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Frank Leven Albert Gerbode

FRANK LEVEN ALBERT GERBODE:
PIONEER CARDIOVASCULAR SURGEON

With an Introduction by
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An Interview Conducted by
Sally Smith Hughes
1983-1984

*Underwritten by the Gerbode children
in memory of their father.*

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INTRODUCTION

Frank Gerbode was a man of many parts. Fortunately, these transcripts reveal some of the facets that made Frank Gerbode a household name everywhere there is any surgery of the heart. In 1954 after years of careful research Dr. Gerbode performed the first successful open heart surgical procedure in the western United States. In 1958 an actual open heart surgical procedure was televised live from the old Stanford Hospital in San Francisco. An atrial septal defect was found to have anomalous pulmonary venous drainage so a more complicated surgical procedure was carried out than was originally planned. The patient made an uneventful recovery, and a wide public audience began to realize the potential of this new approach to previously hopeless cardiac diseases. Working first with the ingenious Dr. John Osborn, then with the dynamic Dennis Melrose of the United Kingdom, Dr. Gerbode developed a safe and reliable heart-lung machine to maintain the patient during open heart surgery. Dr. Gerbode was among the first to appreciate the importance of a versatile and loyal laboratory staff. Bing Moy and Don Toy were of outstanding help in the early days of the open heart, and they reflected Dr. Gerbode's admiration and confidence.

Dr. Frank Gerbode was a meticulous and outstanding cardiac surgeon. He was the first to suggest the median sternotomy for all kinds of cardiac surgery. Prior to his use of this approach, the bilateral tranverse sternotomy was universally utilized. The number of postoperative complications incidental to the bilateral thoracotomy was greatly reduced. Dr. Gerbode reported the first series of left ventricular-right atrial shunts and their successful closure. In the very important area of postoperative care for the open heart surgical patient, Frank Gerbode was at the vanguard of those who computerized the various physiological parameters so important in that crucial period of convalescence.

Outside of the operating room, Frank Gerbode was a most generous individual. Colleagues from all over the world were welcome in his beautiful home, and he liked nothing better than to take them out in his sailboat for a day on San Francisco Bay. Having trained upwards of 200 cardiac surgeons worldwide, Dr. Gerbode never needed to find hotel accommodations wherever he travelled. He was the father figure for many younger cardiac surgeons and physicians.

Frank Gerbode brought much worldwide attention to Stanford University. As it is said, however, a prophet is never without honor except in his own home town. With the retirement in 1955 of Emile Holman from the chair of surgery at Stanford, the obvious choice of Frank Gerbode to be the successor was not forthcoming. The Pacific Coast Surgical Association, for which Frank Gerbode

INTERVIEW HISTORY

Frank Leven Albert Gerbode was interviewed by the Regional Oral History Office to document his professional career as a pioneer of cardiovascular surgery and to record other aspects of his many-sided life. Highlights of the medical and surgical portions of the interviews include his contributions and those of his surgical colleagues to the explosive growth of cardiovascular surgery after World War II, his development with M.L. Bramson of a membrane heart-lung machine, his formation and leadership of the first open heart surgery team on the West Coast, his collaboration with John J. Osborn in the organization of a computerized monitoring system for postoperative patient care, and his prominent role in the foundation of the Institutes of Medical Sciences (now the Medical Research Institute) at Pacific Medical Center, San Francisco.

Although retired from surgery since 1980, Dr. Gerbode at the time of the interviews was anything but inactive. He was director of the Heart Research Institute, and a trustee on the board of directors of both MRI and the Pacific Medical Center. He was an active member of numerous surgical societies, and made frequent trips to attend meetings across the country and around the world. On these occasions he usually encountered some of the former fellows of the training program in cardiovascular surgery which he founded at the Heart Research Institute. Dr. Gerbode regarded the training of this outstanding group of surgeons as his greatest professional accomplishment.

Dr. Gerbode's international renown in cardiovascular surgery appears from his account in the interviews to have been due to a combination of factors. He returned from World War II with wide surgical and organizational experience. However, like many other American surgeons who had interrupted their careers to go to war, he found few opportunities to operate when he returned home. With time on his hands, he turned to the dog lab where he developed operative skills and procedures which were to serve him well when surgical cases subsequently were referred to him. The war and immediate postwar years produced the ingredients for the rapid growth of cardiovascular surgery: such things as antibiotics to control postoperative infection, better blood typing and handling methods, improved techniques for administering anesthesia with an open chest, efficient respirators, and the first primitive heart-lung machines.

There was in addition a conceptual change. The prewar notion that the heart was surgically inviolate had been proven wrong by Dwight Harken and other pioneers of heart surgery. Dr. Gerbode, well trained in the practice of surgery and the protocol of the research laboratory, was in a fine position to take advantage of the opportunities in the promising new field of cardiovascular surgery.

Circumstances of the interviews: The first twelve interviews were conducted between July 20, 1983 and October 23, 1983 in Dr. Gerbode's office in the Medical Research Institute at 2200 Webster Street, San Francisco. The office, replete with medical books and memorabilia, included a couch stacked with current journals and catalogs which he was in the process of reading. Over his desk hung a collage of family photographs and mementos, including several shots of his sailboat.

A second set of ten interviews was conducted between April 12, 1984 and November 14, 1984 after Dr. Gerbode and the interviewer realized that several topics had inadvertently been omitted from the earlier sessions. Many of the topics were suggested by reading Dr. Gerbode's extensive correspondence which provides an insider's account of the growth of cardiovascular surgery on the West Coast.*

The second series of interviews were conducted in the library of Dr. Gerbode's large, art-filled home on Divisadero Street in San Francisco. The sessions were preceded or followed by lunch and conversation in the dining room overlooking an old fashioned flower garden and San Francisco Bay.

Editing: The transcribed interviews were edited with an eye to accuracy and clarity. In a very few instances material was rearranged for the sake of continuity; the change in such cases is noted at the bottom of the appropriate page. Repetitions understandably occurred because of the long period (almost one and a half years) during which the interviews were conducted. They were not eliminated unless they added no further information. Dr. Gerbode reviewed the edited text and made minor deletions, changes, and additions. His sudden death prevented his editing the final three interviews.

Note on terminology: The name changes of several institutions with which Dr. Gerbode was associated may be confusing to the reader. Stanford Hospital in San Francisco became Presbyterian Hospital when Stanford University moved its medical school to Palo Alto in 1959. The new Presbyterian Hospital, whose operating and recovery rooms Dr. Gerbode helped to design, opened in April 1973. In 1959, the Institutes of Medical Sciences (IMS) were organized by Dr. Gerbode and others to continue the medical research activities of Stanford Hospital. In 1982, the name of the IMS was changed to the Medical Research Institute. The organization consisting of the Presbyterian Hospital, the Medical Research Institute and several other buildings, and bordered by Clay, Sacramento, Buchanan, and Webster Streets, is now known as the Pacific Presbyterian Medical Center.

Sally Hughes
Interviewer-Editor

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*At the time of writing, the destination of Dr. Gerbode's correspondence was unsettled.

I FAMILY BACKGROUND, EDUCATION AND EARLY CAREER

[Interview 1: July 20, 1983]##

Grandparents, Parents, Brother and Sisters

Hughes: Dr. Gerbode, could you tell me a little about both sets of grandparents, what their names and professions were, and where they lived?

Gerbode: I don't know too much about my grandparents, because they were in Europe, except for one, and they were quite old. I was the last of four children, so that by the time I came along, they'd pretty much vanished from the scene. But in any event, the first Frank Gerbode came to California in 1850. He apparently came through the southern route, from New Orleans. He was Frank Albert Gerbode and the first one in California. He became a goldminer. What he was before he was a goldminer, I don't have any idea. He established a homestead in El Dorado County and started gold mining. When he was there, he hired some Chinese and French [workers] to help him with what was then a pocket mine. We still have the property. It's a hundred and sixty acres in El Dorado County. It hasn't been mined since he died many years ago.

He brought over my father, Frank Albert Gerbode*, from Germany when my father was quite young, and became his foster father. In other words, he adopted him after he got him over here. My father's

##This symbol indicates that a tape or a segment of a tape has begun or ended. For a guide to the tapes see page 505.

*Frank Albert Gerbode II was the nephew of Frank Albert Gerbode I.

Hughes: So Gerbode is--

Gerbode: Gerbode is an old Saxon name. It's a strange name. Once I found a Gerbode in the telephone directory when I was traveling around. I didn't look them up because I wasn't sure that I might want to get connected with them. You never know what you might run into. There are some big advantages in having a name that's rare. People know who you are.

A friend of mine in Australia once was curious about the name. He's a voracious reader, and he found an old Belgian book. In it there is a Count Gerbod, and he thought this probably was an ancient ancestor. He apparently was a soldier-type who lived in the early fifteenth century. But whether that's true or not, I haven't taken the trouble to find out. But he thought this was a great discovery, that he'd found a Count Gerbod, who was apparently from an old Belgian family. It's possible, because it's not too far from Saxony. I suppose if I wanted to spend some money, I could trace it all back.

Hughes: I'm interested in the fact that your father was adopted by your great uncle. Do you know any more about that?

Gerbode: No, I don't know why. It was so long ago by the time that I got curious that none of us in the family really paid much attention to it. I guess when [my great uncle] brought him over here, he felt that he'd do better adopting him than just having him live here.

Hughes: But it was more than a working arrangement.

Gerbode: I think he was very fond of him, and I guess helped him get started in his business. There's the old miner's cabin there on the wall. [points to photographs] That's the original miner's cabin, which my father and I rebuilt when I was seventeen years old, using some of the original logs, but cutting other logs from the same property.

Hughes: Was he successful as far as the gold mining was concerned?

Gerbode: He apparently was fairly successful, but unfortunately, he was very generous, and no one came by his place, I guess, without leaving with something. He hired quite a few people to help him with that mine. He once also saved old man Studebaker's life. The original Studebaker lived up there at the same time. I guess they were out at a wild party some Saturday night. He pulled him out of a creek before he drowned. So the story goes, anyway.

The Decision to Go into Medicine

Hughes: What about your parents' attitude toward education?

Gerbode: My father wanted me to be a businessman. I don't know why he thought I would have made a good businessman, but to satisfy him, I went to a business college for about six months and learned how to do bookkeeping and accounting and a few things like that.

Hughes: That was in Sacramento?

Gerbode: Sacramento. I got a good job for about six months with the Pacific Gas and Electric Company and showed him that I could do it. Then I went to him and said, "Now I showed you I could do it, but I don't want to do it." My mother wanted me to be an architect.

Hughes: Why did she have that idea?

Gerbode: I don't know. She thought I could draw, and she thought it was a very good profession. They both thought being a doctor would take too long, and maybe it was uncertain. It was a kind of a future that they hadn't been closely familiar with.

Hughes: There was nobody in the family in the medical profession?

Gerbode: No.

Hughes: How did you get the idea to go into medicine?

Gerbode: I suppose because in Sacramento I got to know a few doctors, and they all seemed to lead quite independent lives, which I liked. They didn't have bosses, and they weren't beholden to anybody. I think the independence appealed to me, as well as being able to do something for somebody else. So I think it was the independence and the desire to do something for somebody else that got me started on it.

Hughes: Had you had any particular interest in the sciences?

Gerbode: No, I hadn't. I took the usual courses in high school, but I can't say that I was very good at them, [although] I got fairly good grades. I think all the courses I took in high school, and later on in college, were to accomplish the aim of getting there. If they set a path for you in any career, and they say you have to go through these steps to get there, then you have to do it. So I did it.

Hughes: This is medical school or undergraduate?

Gerbode: Undergraduate. I kept it for a year. It was a scholarship which paid my tuition. I also worked in the summers at various jobs. When I ran short of money, I would call my family for support, and he always helped, but I didn't really depend on him entirely. Although he would have helped me more than he did, I didn't want to do it that way necessarily.

Hughes: Were they pleased that you were going to Stanford?

Gerbode: Yes. I think it scared them half to death to think that I was going to try to become a doctor rather than a businessman, but they accepted it after a while.

The Major in Physiology

Hughes: I know you majored in physiology. Did you know immediately that that's what you were interested in?

Gerbode: I think the reason I got involved in physiology was that I realized that this was a science very close to medicine. Also I had an opportunity to do research in the summer in the department of physiology, and I liked the idea that I could start doing research as an undergraduate.

My brother probably is responsible in part for that, because he was also very interested in research and worked with Thomas Edison for quite a while on electrical devices. Even when he was in real estate, he worked some with Edison. Maybe my brother was a hero to me in a way, and maybe I thought, "If he can do it, maybe I should try to do it, too."

Hughes: Did he have any special background?

Gerbode: He was trained in electrical engineering, and he was on a submarine during the First World War as a trained electrical engineer. Submarines run on electricity, so they need people who can understand it. I guess maybe he inspired me in a way which he didn't know about. Then when I had the opportunity to do research at Stanford in the summer in the physiology department, I was rather intrigued with the possibility of making a discovery. It was a very good summer.

Hughes: Can you tell me about your first research project?

The Decision to Become a Surgeon

Hughes: When did you decide that it was going to be surgery?

Gerbode: I decided that after my sophomore year. I think I decided that I could do it, and if I could do it, then that's what I probably should do.

Hughes: Do it in what sense?

Gerbode: Manually do it. And the other thing is, when I came up here to the campus.... You see, the second year [of medical school] was in San Francisco. It was in the old Cooper Medical School building, which was then the Stanford Medical School. I got interested in research as a student in the surgery department. That helped me, because then I could operate on animals and do certain experiments. The one who helped me with that was Professor [F.L.] Reichert. He got me interested in doing research. Dr. [Emile] Holman, who was the professor, was also very keen on doing animal research. He did a lot of experiments, and I started helping him as well.

Hughes: Was that unusual for a medical student to be engaged in research?

Gerbode: No, not so unusual. There were always a few medical students who were doing some research. I would say that the vast majority did not do anything like that, but there were always two or three or four in every class who were interested. Later on when I was on the faculty and found a student who was interested in doing research, I was very anxious to help him, because I knew what pleasure he was going to get out of it. We had several students in the old lab whom I helped get started, who are now professors of surgery.

One of them was a biomedical engineer. He had two degrees from Stanford, one in biology, and the other in engineering. He went to Cornell as an intern, and he soon was doing better research in the medical school than some of the senior departmental people, because he was trained properly, and he had the experience in the laboratory, so he knew what to do.

Hughes: Was the European model of medical research still in force? I know very early that Germany was held up as the prototype.

Gerbode: The big thing in those days was Vienna, but Vienna was not so well known for research as they were for pathology. The people who went over to Germany in surgery, when they came back, were very

Hughes: What subjects did you take in the second year?

Gerbode: It was required that we took physical diagnosis, history taking and learning how to write orders, and pharmacology. I found pharmacology pretty hard. I don't know why. I got a B in it finally, but it didn't come easily for me for some reason. I think the professor scared me.

Hughes: Do you think it was the chemistry?

Gerbode: It may have been the chemistry.

Hughes: Were you finding that your undergraduate education was holding you in good stead?

Gerbode: I think it was all right. I managed to get good grades. I could understand what was going on all the time.

Hughes: Was the medical school pulling from all over the country, or was it a local, California school?

Gerbode: They brought students from all over the country, but most of them were Californians.

Hughes: What was its reputation?

Gerbode: It was considered among the top medical schools in the country.

Research in Medical School

Hughes: Tell me a little about the research that you did in medical school.

Gerbode: I got interested in some research, first of all, on a certain inflammatory disease of the intestine. Nobody could find out why it occurred in certain people, so we tried to simulate it in the experimental animal. Professor Reichert thought it was due to obstruction of the lymphatic system of the small intestine, so we had to try to design an experiment which would prove or disprove that. I'm not sure that we ever proved that it was caused by that, but we spent a lot of time on it. I wrote a couple of papers.

Hughes: Was there anything else?

Gerbode: He had strong feelings about right and wrong. He was of German ancestry, and this was also very apparent. So he combined some of the things he picked up from his father with his Germanic background; it brought out a very strong person.

Hughes: I'm sure that influenced your relationship.

Gerbode: I had to cope with it.

Hughes: He was very much the boss.

Gerbode: No question about it, he was the boss. And if you did something he didn't like, he told you right away. There was no question about that.

Hughes: Was he a general surgeon?

Gerbode: He started out being a general surgeon, but he really finished by being a general and a thoracic surgeon. He also made his reputation by being one of the early vascular surgeons, although he didn't do many of the new, innovative things as a vascular surgeon. He was mainly interested in arteriovenous fistulas, which are connections between the arteries and the veins. These connections produce certain physiological changes in the veins and in the circulation, which interested him a great deal. He spent most of his experimental life working on these particular abnormalities.

Hughes: In animals?

Gerbode: In animals and in humans, too. Some [arteriovenous fistulas] are congenital, and some are the result of stab wounds or gunshot wounds. So we always had a certain number of patients around with these abnormalities. For somebody interested in the circulation, this was very good.

Hughes: And the fistulas could occur anywhere in the body?

Gerbode: Usually they were between the major vessels, like the femoral vessels or iliac vessels or arm vessels.

Hughes: That would mean operating right around the pericardium.

Gerbode: Operating there, and also on the major vessels.

Hughes: Which I believe was very unusual in the prewar days, was it not?

Hughes: Was it mainly the length of the operation?

Gerbode: No. The brain is a very sensitive organ. If it gets a tumor, unless it's one of the rare benign tumors, you can keep people alive, but they are not very well when they're alive.

Hughes: So it was the poor success rate that discouraged you.

Gerbode: Yes. Actually, a great many young men were quite entranced with the idea, brain surgery being the big thing when I was a young surgeon. It was very exciting to be a brain surgeon, or to be training as a brain surgeon. I didn't like the poor yield.

Hughes: And yet some people would have considered that you had jumped from the frying pan into the fire by turning to cardiac surgery.

Gerbode: Yes, I think so, but on the other hand, I could see that [cardiac] conditions could be mechanically corrected, if you could just figure out how to do it, and you didn't end up by having somebody who was decerebrate or paralyzed.

Hughes: Were you doing a fair amount of reading at this time, too?

Gerbode: Yes.

Hughes: Did the fact that you were doing so much practical work mean that there wasn't a lot of bookwork connected with your studies?

Cardiovascular Surgery Before World War II

Gerbode: The reading in cardiovascular surgery was very limited at that time, when I was in my early training years, because there wasn't very much going on.

Hughes: What was there?

Gerbode: In medical school there was very little. During the war, we got more of it. But before I went into the war, around that time, some of the first heart operations were beginning to be done. This was very exciting, to see that you could physiologically improve somebody with an operation on the heart, and you had a living person who then could walk and work and be effective again.

Gerbode: Yes, my last year at Stanford.

Hughes: Was that a bit unusual in those days?

Gerbode: A little.

Hughes: How did you handle it financially?

Gerbode: My wife, Martha Alexander Gerbode, had a little money, and between the two of us, we were able to make it go. She had quite a bit more money than I did.

Hughes: So she didn't have to work.

Gerbode: She didn't have to work.

Hughes: Tell me how you met.

Gerbode: We met in the experimental psychology class at Stanford. My parents had meanwhile moved to Piedmont across the bay and her parents were in Piedmont, too. So we started riding back and forth to Stanford together.

Hughes: Does that mean you lived at home?

Gerbode: No. I went home for weekends. That's how we got to know each other.

Hughes: Why did your parents move to Piedmont?

Gerbode: I can't remember why they did. But I guess it was because my sister was living in the Bay Area, and they wanted to live closer to her. It wasn't because of me, because I'd already wandered off into this academic path.

Hughes: Where did you live?

Gerbode: We lived at Stanford together. First, we rented a little house. Then when I came up to medical school here, we lived in a nice little brown house on Broadway. We had our first child there, a son, Wallace Alexander.

Hughes: What year was that?

Gerbode: I think that was about 1933. He subsequently was killed at Stanford in an auto accident.

Gerbode: I think the most I ever made as a resident was sixty dollars a month and room and board and laundry. Now they get paid over a thousand a month.

Hughes: You were living at the hospital?

Gerbode: No. We found a little house in Piedmont, and rented it. Once in a while I had to stay the night, of course, when we had some special thing to do.

Hughes: Did Highland have any special reputation?

Gerbode: It was a favorable place for a general rotating internship. It had a loose connection with Stanford.

Hughes: Stanford rather than UC? Do you know why that was?

Gerbode: I guess because several of the people who became prominent in running the place were Stanford graduates.

Hughes: What about research?

Gerbode: No, there was nothing at all. I had to drop that. I was just too busy taking care of sick people.

Hughes: Did you learn a lot from that experience?

Gerbode: I took out a lot of tonsils. I delivered a lot of babies. I helped at a lot of gynecological operations and things like that, which I never really ran into afterwards, but I'm glad I did it.

I was glad once, years later, when I was up at Lake Tahoe, and the clerk at the desk said, "There's a lady in labor in room X-Y-Z, and she found out that you are a doctor. Would you mind going to see her?" [laughs] So I went up to see her. She was certainly in labor, all right, but not too far along. I said, "Why did you come here when you're [about to] have a baby?" She said we just went to various resorts until we found there was a doctor registered.

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Gerbode: Dr. Leo Eloesser was a good friend of mine. He was one of the famous professors [at Stanford San Francisco Hospital]. He had operated upon my mother, my father-in-law, and my mother-in-law. He had an extremely interesting life which has just been written up by Harry Schumacher. He liked me and was interested in me. Of course, I got to know him fairly well because of his having

Gerbode: Another man on the Stanford faculty, Alvin Cox, a pathologist, went with Aschoff the same year that I went to Borst. I found Borst to be an extremely nice gentleman, a real cavalier of the old school. We hit it off perfectly.

The other reason I went was because I was curious to know what was happening in Central Europe at that time. The Nazis were getting terribly strong and talking a lot about things which I thought were very important to the world. So I decided if I went there, I could really look it over a bit without getting involved and at the same time get this training in pathology.

Borst gave me the job, which meant I had a little lab. I went there every morning, went through the whole business of pathology every day, and went to the lectures. It was a very, very interesting time. Then my wife and I had to find a place to live, and we almost gave up in desperation. We were living in a tiny hotel in Munich. Finally somebody said, "We know a woman from Boston who's got a house just outside of Munich, and she rents it once in a while." So meanwhile I'd gotten myself a little Ford, and we went out and found this beautiful house outside of Munich in Geiselnberg. That's where the movies are made now. They were beginning to make movies then, too. She said, "I'm terribly glad to see you, because I want to leave very shortly, and I'd much rather have somebody living in the house." She said, "You can have my servants, too."

So we had this beautiful house with a driver and a cook and an upstairs maid on practically nothing. I was a young doctor, and she liked me. She was married to a wealthy banker from Boston, so the money didn't make any difference to her. So we moved in very promptly. We had one son at that time, the one that was killed later. The living part was wonderful. Johann, the man-servant, was terribly excited that I had a little Ford. He was a good driver, so he would drive my wife to do shopping once in a while. The lady had him fitted out with various uniforms for every occasion. So when he went into town, he had a driver's uniform. By the time you drove up in front of the house, he'd go around to the back of the house and open the door for you with a white coat on.

Hughes: Wonderful! How is and was your German?

Gerbode: I'd taken two years of German at Stanford. I could just barely get by, but the conversational German came to me fairly easily, because of the German I had at Stanford. I can still converse in German to a certain extent if it isn't too complicated.

Hughes: And the lectures, of course, were in German.

Gerbode: Yes. We had to leave the money and to pay a fine, and then come back, and it was all right. But Mrs. Ophüls was so indignant with this guy later in Munich that he finally dropped all the charges against me. She was such an aristocratic woman, who spoke perfect German. She just slayed him verbally.

Hughes: You were lucky.

Gerbode: Oh, lucky, yes. But you know, they took her off and searched her completely. They made her take her clothes off, and they took my wife in a back room and did the same.

Hughes: Why were they so concerned about the marks leaving Germany?

Gerbode: They wanted to have everything regulated and under control.

Hughes: What were your colleagues in the institute saying about the situation?

Gerbode: Periodically they would say, "Don't you think that Germany is much better than the United States?" Little things like that. Or they'd ask me if I wanted to go to one of these indoctrinating lectures. I went to a couple of them where they were talking about racial background. This was when they were talking a lot about Lebensraum and about the people in East Prussia and Poland being of German extraction, and they really ought to be with the German government, and "We need that land; they ought to be with us." There wasn't very much going on about the Jews that you could see on the surface, although there was an awful lot going on beneath the surface, I'm sure.

Hughes: But you weren't really aware of that?

Gerbode: Not in the beginning. But after I was there about six or seven months, I began to hear about Jewish people losing their property and jobs.

Hans Borst

Gerbode: Professor Borst had a son by the name of Hans. He was a charming young man. Then he was only about fourteen years old. [The senior Borst] began to worry that there was going to be a war. We began to discuss whether I would take Hans back with me to the United States. I said, "Sure, I'll take him."

Gerbode: I went back to Munich several times after the war and kept in touch with Hans. I finally went to Zenker and said, "You can't do this to him. You've got to get somebody else to run that machine and put him in the regular training program in surgery, starting with general surgery and going through the whole business." So he did. He stayed on in the department there in Munich for quite a while and divorced his wife. I won't go into why. Subsequently he got married to a charming girl and had another daughter. He has a son by his first wife, who is a very fine student, very brilliant. He'll undoubtedly be a professor one day. When they started a whole new medical school in Hanover, [Hans] applied for the job and got it. So he's now the professor of surgery at Hanover and one of the strongest academic surgeons in Germany. Big, handsome, wonderful guy. Speaks perfect English. Very intelligent. Reads a lot. I see him almost every year. When he comes out here, he stays with me, and I see him at various meetings.

So anyway, the year went by over there. I managed to stay out of trouble, and I think I learned quite a bit about pathology. My wife had a grand time. She loved shopping with the German hausfraus.

Hughes: Were you being singled out as a foreigner?

Gerbode: Yes.

Hughes: You'd be particularly watched?

Gerbode: Oh, yes.

Hughes: What were they worried about?

Gerbode: I guess they were afraid that we might take money out of the country or help people who were under surveillance. As an example, our cook's husband was a writer of some kind or other, and he was arrested because he wrote an article against the Nazis. He was put in a concentration camp. He stayed there for about six months, and they finally let him out if he agreed to write articles for the Nazis. They decided he might as well do that rather than die. So he came back to the house. He'd lost all his teeth. He looked like a walking cadaver.

Hughes: So you were beginning to--

Gerbode: Get the picture. Then another family whom we met there, a Jewish family, an ophthalmologist, wanted to get out, too, because he could see that his job in the university was going to be terminated before long, and he might even be shipped off. So we helped them get out of the country, and I got him a job here at Stanford.

Gerbode: Only pathology. He was a full-time pathologist and a very famous person. Because of his work on tumors, he was an international scientist, you might say. Another part of the Borst story is that he had a little place in the mountains where he used to go on weekends. The head deiner in the institute would drive him up there. He invited me up a couple of times to this lovely little place in the mountains outside of Munich. After the war, his car broke down. He was standing on the highway while a man was fixing it, and an American truck came along and hit and killed him.

Hughes: Does that take care of the University of Munich?

Gerbode: I think the other thing that I enjoyed very much there in Munich was the museums. Munich is an art center, always has been, for generations, I guess. Hitler, wanting to show people that he had an interest in art, built a whole new museum, with big pillars in front, advertising the fact that the Nazi party was for culture. It's still used as a museum now, but nobody knows that Hitler built it. I guess they all know, but they don't say anything about it.

Hughes: Was it very selective in the art that they exhibited?

Gerbode: Yes. The Nazis threw out all the modern paintings. They only kept classical and propaganda paintings.

Hughes: Did Munich perk your interest in the arts, do you think?

Gerbode: I think it probably did. I certainly paid more attention to it there than ever before. I also enjoyed a lot of the people, their lifestyle. They like skiing, they like music. The opera was a great feature there and still is. The opera house in Munich is one of the great opera houses in the world. It's the first one I'd ever seen where the stage could go up and down and turn. It was almost totally destroyed during the war. They rebuilt it and made it bigger, but exactly in the same form. It's really quite beautiful.

Surgical Resident and Instructor in Surgery at Stanford, 1937-1942

Gerbode: After I returned to California, Dr. Holman took me into the department of surgery as an assistant resident on the lowest level. So I started like anyone else, learning how to be a surgeon.

Hughes: Did you ever have any thoughts of going anywhere else?

Early Cardiovascular Surgery

Gerbode: Yes. Reichert was, too, but Holman was running the department. He had more administrative work to do. During those few years we began to do more major vessel cases. Then later on we began to do mitral cases and patent ductus and coarctations. These were some of the early operations. I was able to assist on them, and later on able to catch one every once in a while for myself.

Hughes: You were allowed to do these big operations?

Gerbode: Later on, after I was there for two or three years.

Hughes: What was the success rate in those early days?

Gerbode: I don't know that we ever lost a patent ductus. I think I only lost one coarctation out of a lot of them. The mortality rate for mitral operations was about 5 percent, something like that. But they weren't open; they were closed mitral operations. They were all done with instruments or an index finger in the heart.

Hughes: The valvulotome?

Gerbode: Yes. I devised an instrument for cracking the valve, too, which we used in many cases. You'd put it in through the apex of the heart, and then you'd feel it in the atrium and then get it in the valve and open it. That would split the valve so it could move again.

Hughes: Does it have a name?

Gerbode: They called it a mitral valve dilator. It's still sold, as a matter of fact.

Hughes: Did you patent it?

Gerbode: No.

Hughes: The name of the game then was to operate as quickly as you could?

Gerbode: No, the name of the game by then was to operate cautiously and selectively. For example, the first criteria we set up for mitral valve operations were that the patients shouldn't be over forty-five years of age, they shouldn't have this and shouldn't have that.

Hughes: Was that social usefulness, or was that just chances of survival?

Gerbode: [Now] it's done routinely by residents. A patent ductus is a connection between the pulmonary artery and the aorta. [The ductus arteriosus is] a tube which is present in the embryo, and that's the way the blood gets from the mother into the child. Within a few weeks after birth, the duct closes. If it doesn't close, then it produces a physiological change which is not very good for the patient and can produce heart failure.

The operation consists of a left thoracotomy, exposing the connection which is right near the heart. Initially it was just tied with a couple of sutures. But later on there were perhaps 5 percent recurrences when this was done, so then surgeons began to divide it, by first putting clamps on it, then cutting between them and sewing each end.

Hughes: The actual suturing had to be very quick, didn't it?

Gerbode: No. The ductus doesn't do much to the rest of the circulation when it's clamped off.

Hughes: You weren't actually operating on the heart itself?

Gerbode: Not in those days. It wasn't until 1953, more or less, that we started on the heart.

Prewar Cardiovascular Research

Hughes: Were you doing research during this time as an assistant resident?

Gerbode: Yes, I always had a little something going.

Hughes: What was going in 1937-38?

Gerbode: I was trying various things on the heart, producing conditions in an experimental animal which were like those found in the human, and then measuring them and seeing what we could learn from them.

Hughes: What types of things?

Gerbode: Experimental hypertrophy of the heart, for example, making the heart muscle bigger [on] one side or the other.

Hughes: I know there were some postwar papers about ligating one of the great vessels in puppies.

Gerbode: Oh yes, because when you're a chief resident, you do all the operations on the clinic service, unless you think you shouldn't be doing it by yourself. Or the chief would help you do a difficult case.

Hughes: But you were expected to be able to do all of the cases?

Gerbode: Expected to do most of them.

Hughes: What about these very innovative ones?

Gerbode: If you were doing an innovative one, you'd usually have one of the professors scrub with you.

Hughes: Were you considered a cardiac surgeon at this time or a general surgeon?

Gerbode: General surgeon. At that time, there wasn't really a specialty of thoracic surgery. It wasn't until after the war that they began to recognize the subspecialties.

Hughes: Because you and Holman were particularly interested in the heart, was Stanford developing a reputation for heart surgery?

Gerbode: I think Holman really developed a reputation for being interested in circulation and great vessel, not heart.

Premonitions of World War II

Hughes: The next step is the war.

Gerbode: Having been in Germany before the war started, I could see that was coming. One taxi cab driver there said, "One day Austria will go. The next day we'll take Poland just like that." They'd figured it all out. Austria did fall while we were there, and Poland came not too long afterwards.

Hughes: But that was not the thinking in 1937 when you returned to this country, was it?

Gerbode: People had their heads buried in the ground. When I told them what I'd seen them doing over there, they thought I was praising them. I said, "I'm not praising them. I'm merely telling you what I saw."

II SURGEON, U.S. ARMY MEDICAL CORPS, 1942-1945

[Interview 2: August 1, 1983]##

Decision to Go to War

Gerbode: [Anyone] around the time of 1938 to '42, would wonder whether or not we were going to get into this war which Hitler had started. But having been there [Germany] for practically a year and having seen the preparations and having heard what the Nazi ideology was turning out, it was quite apparent [to me] that we would have to get into the war eventually, because there would be no stopping Hitlerism if he won the war in Europe. The next thing would be South America, and then Lord knows what else.

So I decided pretty early that I would have to get into it. I suppose in my position I could have stayed home, stayed in the medical school and taught like some of the men did. It was necessary for some of them to stay home to keep the medical school going. Also having a rather large family, I could have used that as an excuse for staying home, too. But I wanted to be counted. My thoughts came to a head in New York when I heard a lecture by a very distinguished English surgeon by the name of Sir Gordon Gordon-Taylor. He was a very fine, beautiful gentleman. He came to New York and showed pictures of the bombing in London and the problems the English were having with fighting the Germans. His mission was, of course, to get Americans more interested in fighting Hitlerism.

I also was very impressed with The Life of Harvey Cushing, which is a biography written by one of Harvey Cushing's students, [John Fulton]. In it it was quite apparent that an affiliated team of doctors, in that instance from Harvard, was able to accomplish a good deal in a war effort.

Gerbode: as a complete hospital. I was glad to do this, because otherwise there wasn't much else to do at Ft. Ord except hike and eat and complain about the army. [laughter]

So I set up really what amounted to a construction unit, making boxes and things to put all this stuff together. I kept asking the commanding general down there for more and more material, and once he got so fed up with me that he said to the man on the phone, "God damn it, don't give him what he wants. Give him what he requires." [laughter] Well, I felt that I did require this stuff, and we got it finally.

The unit was put together just before the Dieppe raid. I think that the idea was that we were going to go to England and then follow the Dieppe raid into Normandy if it was successful. But, as you may recall, the Dieppe raid failed. It was kind of a disaster. So instead of going there, we were sent to Virginia for further waiting to see what would happen next. Meanwhile all that equipment which we had put together had gone to England, which was lucky, because it wasn't any good anyway.

Before that we had a very brief period in New Jersey where we were supposed to be staging for the leap to England, but when the Dieppe raid failed, we were moved down to Farmville, Virginia. There we put together another hospital, but this time with more modern equipment. We had the experience, so it was easier to do it the second time.

Hughes: This was a complete hospital?

Gerbode: A complete hospital, tents right down to the bedpans. Everything. It came in boxes, and then we had to sort it out and put it together. We would have an operating room set of boxes and an intensive care room set of boxes and so forth. Why the commanding officer put me in charge of this, I don't know, but later on I think he had a feeling that I had logistic ability. In any event, I didn't mind doing it.

To do this, I found a couple of very fine noncommissioned officers to help. One was a fellow by the name of Carson, who was a very fine carpenter. The other was a fellow by the name of Querhammer, who was a farmboy from the Middle West. They turned out to be excellent workers and very enthusiastic about the project, and really, with guidance, put it together. So then we had another complete hospital. We stayed there until the army decided where we were going to go.

Gerbode: We set up a very good tent hospital and realized for the first time that you could do very good surgery in a tent hospital.

Hughes: Had you worked with most of this team before?

Gerbode: No, I hadn't. We were all from around here. There were several men from the University of California. But they were all highly trained. They were all residents and had good training in surgery. Carl Matthewson, who was the chief surgeon, was particularly good because he had had special training in the treating of fractures. Since so many of the injured had fractured bones, it was very useful to have him establish methods of treatment for the unit.

Hughes: Were you doing vascular surgery?

Gerbode: We did everything. Anything that was on the table, we did, including brain surgery. I did brain surgery and spinal cord surgery. But we weren't doing very much reconstructive vascular surgery at that time. That came later on in the war. In retrospect, of course, we were not very quick to realize that a lot of this could be done.

Hughes: When you say that, are you thinking in terms of grafts?

Gerbode: Grafts and repairing arteries, and using vein grafts to insert for deficits in an artery.

Hughes: Not too much of that had been done anywhere.

Gerbode: No, that's right. It was really developed at that time. But we were kind of silly not to think of it, you know.

Hughes: Do you think the war gave an impetus to vascular surgery?

Gerbode: Oh, yes. But actually, vascular surgery in the front areas really was developed in the Korean War.

Hughes: That late?

Gerbode: Quite a bit later. Some repair work was done in old injuries in base hospitals after they had been evacuated from the front.

Gerbode: into the countryside and then through a network of intelligence people send messages back as to the number of planes going in and out of a certain airport and various items of that type, which he successfully did, and he was never captured by the Germans. Finally, when the Allies landed in North Africa, he said, "I was a member of the welcoming committee." His job when I met him in North Africa was to interrogate Polish prisoners who might defect when they got well and join the American forces. That was what he was doing actually at that prisoner-of-war camp.

I've subsequently met Andrew several times. He'd gotten rather fat. He was trained as an engineer. The last I heard of him, he was in South America somewhere. The mother who was there at that time, lost her second husband. She came to the United States and married a Kellogg, the very rich man who owns much of the cereal business. She then moved to Minneapolis or St. Paul and lived in rather splendid circumstances there, but never would help her children. I think Grajina now is working in a restaurant in London.

Palermo, Sicily

Gerbode: In any event, we stayed in Casablanca until the Germans were chased out of North Africa, which took about seven or eight months. Rather heavy fighting. Then we went to Bezerte, which is in the north, and staged in an olive grove, got all our stuff together, and then finally we were put on a boat in a convoy and went to Palermo, Sicily, the Germans having just been driven out of there.

There was a bit of bombing after we got there, but not very much. Our billet as a hospital was in the University of Palermo Medical School building. The place where I slept was the professor of orthopedic surgery's office. That was quite luxurious compared to the other things we'd done. We took care of a lot of Italian wounded there and a lot of Italian prisoners of war, who defected by the hundreds. They were pretty tired of the war even then and were easy to capture.

Hughes: Were patients coming in in rushes?

Gerbode: We had to chase the Germans off of Sicily, so there was a lot of fighting right up to the Straits of Messina. They were treated in a field hospital first and then sent to us. Sometimes they came to us straight from the front, but usually through a field hospital.

Gerbode: Anyway, we stayed in Palermo for quite a while. We must have been there about five or six months. Then we had to somehow get a landing in Italy, so they landed us just south of Salerno. General Mark Clark was in charge of the operation there. They just barely made it, as a matter of fact. But they finally did get a foothold, and also at Anzio. At Anzio they were surrounded by the Germans and took an awful beating.

Hughes: How were you getting news about all this?

Anzio

Gerbode: Through the wounded soldiers who came back. Anyway, we stayed in Palermo until it looked as though we were going to chase the Germans north. Then they brought us over just south of Anzio. Then we went into Anzio and relieved all the other hospitals, took all their wounded and let them go on up toward Rome. Anzio was an absolute stinkpot. There were so many thousands of soldiers in a very small area, that about every hundred feet was an old latrine. We had to sleep in a dugout below ground, which smelled terribly, because the latrine odors seeped through all the soil. It wasn't very pleasant.

Hughes: When you were moving like this, were other Americans being relieved?

Gerbode: Yes.

Hughes: What was the rationale for that?

Gerbode: There were different kinds of hospitals. There were field hospitals, which were smaller units. They were up closer to the front than we were usually. We were a big unit. We had a capacity of seven hundred and fifty beds if we used all of them.

Hughes: So each time you made one of these moves, you were taking all the contents of your hospital along with you?

Gerbode: Yes, everything. Which meant truckloads full of boxes and stuff.

Hughes: How good was your equipment proving to be?

Hughes: That must have made a tremendous difference.

Gerbode: It made a big difference, yes.

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Wound Treatment

Gerbode: A lot depended on how you treated the wounds. You see, all the wounds were left open, except the abdominal, chest and brain wounds. The rest of them, the flesh wounds, were all left wide open. The big thing was to let them granulate for a while, and then do secondary closure. That was something that really was developed on a big scale in that war.

Hughes: That wasn't a prewar technique?

Gerbode: Not so much. So when we did the original debridement of a wound, we tried to debride it in such a way that ten days later or two weeks later, it could be closed loosely. We'd try to think of which way we'd make the excision so it would be easy to close later.

Hughes: This was so that the wound would drain?

Gerbode: Yes. It would have to stay open until it was not grossly infected. Of course, it was still somewhat infected, but as soon as there was healthy granulation tissue, not very much in the way of secretions, then you could close it loosely. That saved a lot of time. There were a great many things about the war which we learned which were new. That was one of them, secondary wound closure.

Hughes: Did you carry on that technique after the war?

Gerbode: It was used later in the war and in accidental injuries.

In any event, we stayed in Anzio, which was a smelly, rotten experience, and cleaned up the patients who were there, shipped them back to base hospitals or put them back into active duty. Meanwhile, they were pushing the Germans back toward Rome. You may remember Cassino, the big battle there where some of the Germans were in this monastery on top of a hill, and it was devilishly hard to get them off those buildings. They just were terribly resistant, and it was terribly hard to get at them. This

Gerbode: One of my problems in the army was to keep that logistic number off my records, because I felt that if I had a logistic number, I'd be taken out of the hospital and put back in headquarters somewhere in a planning unit. I didn't want to do that. So I got to know the chief sergeant in the office who controlled these numbers--they were called MOS numbers--and bribed him to keep that MOS number off my file. Which he did. [laughs]

Then we started chasing the Germans up the Rhone Valley. We'd no sooner get a hospital set up than they'd say, "You've got to move it now. Tomorrow we move up another fifty miles or so." We set up three hospitals before we got to a little town called Carpentras. Now the story goes back to before the war again.

The Story of Carpentras*

Gerbode: My wife and I got to know Lily Pons and Andre Kostelanetz quite well. They came to the Hawaiian Islands and had part of a summer with us. Then periodically when they came to California, they would stay with us or we would see them.

They had a friend by the name of Bill Schweitzer in Elizabeth, New Jersey, who is a short-wave expert and was president of a large paper company which made paper for Chesterfield cigarettes. The linen for their paper largely came from southern France. I didn't realize that linen was such an important part of making cigarette paper, but apparently it is.

In any event, as things got closer to our being involved in the war, I would see Andre and Lily once in a while in New York, and also got to know Bill Schweitzer pretty well, and actually visited him in New Jersey. Then when we got into the war and I got a commission, it was apparent that I was going to be sent with our unit to the European theater one way or the other, and Bill Schweitzer also had joined the army. He once said to me in New York, "If you ever get to southern France, we haven't heard anything from our factory, which was taken over by the Germans, please look up our manager, we don't know what happened to him. His name is Mr. LaDerriere. Tell him that our family is fine and that you'd like to have him get in touch with us."

*The section on Carpentras was moved from the interview on 10/23/83.

Gerbode: on the way down, having told them that I was going to be there on a certain day around late afternoon. Well, we got there and they laid on the most terrific banquet you've ever seen in your life. The mayor, the photographer, Mr. LaDerriere, and a couple of other friends of his took over a whole restaurant. We started eating about four o'clock in the afternoon and had about ten courses. Each one we thought was going to be the last, and it wasn't. With all kinds of wine and everything. We finally got out of there at nine o'clock. And I still had to drive all the way down to Ez. But anyway, it was a great occasion with speeches and all this sort of stuff. We set out for Ez about nine o'clock. About a mile out of town I stopped and Alec got rid of the entire dinner. Then he felt much better.

We finally arrived at Ez about one o'clock in the morning, and my wife and the hostess were still waiting outside on the terrace for us to arrive. We had a little confusion in finding the place that delayed us about half an hour, but we got there safely. So that is the story of Carpentras.

Hughes: How is your French?

Gerbode: No good.

Hughes: Was this going on in French?

Gerbode: They were all talking in broken but understandable English.

So we stayed in Carpentras for about two weeks and gradually went up north in several hops until we got to Epinal and set up a hospital in an old French barracks.

Field, Mobile and Base Hospitals

Hughes: When you were moving so often, what happened to soldiers that were wounded and needed care?

Gerbode: We would take care of any freshly wounded patients, and then the ambulances would take them to an evacuation port where they were put on a ship and sent home, or sometimes flown home in ambulance planes to base hospitals in the United States or England.

Hughes: But at some point it seems that you would be in transit when patients were needing care.

Gerbode: Then we were stuck there trying to get them out of these mountains for quite a while. We had very heavy casualties there. We were extremely active. But luckily, we had this old French barracks in Epinal set up as a hospital. When I went there to set this place up, the German operating list was still there in German script on a chalkboard. There was potato salad all over the place. Mattresses were bloody and dirty. I had them take everything out of the place, put it in the yard, pour gasoline on it, and burn it all up. Then we moved in our own equipment.

Hughes: Did it make any difference in any way whether you were dealing with an American or a German wounded?

Gerbode: No, we treated them all exactly the same. Actually, there were always other nationalities around who were watching out for their people. For example, there was always a Polish liaison officer who would watch out for Polish prisoners or wounded and try to see how they felt about the war and see whether or not they were good enough to fight for the Americans when they got well.

Oh, incidentally, at that time this Mr. Schweitzer whom I mentioned before had gotten into the army and was in charge of rehabilitating prisoners of war or moving them out to one place or another. He found out where I was, and he came to the hospital, and he didn't recognize me, I was so thin. [laughter] I didn't realize how thin I'd gotten.

Wartime Surgery

Hughes: What sort of hours were you working?

Gerbode: Sometimes we'd work almost twenty-four hours, if it was very busy. Then we'd just flop down and get some rest and start over again. At other times, we wouldn't have anything to do for days and days.

Hughes: Were you learning a lot?

Gerbode: Harvey Cushing said, "War surgery either makes or breaks a surgeon." If he goes into the war not knowing much surgery and does a lot of war surgery, he compounds his mistakes and comes out really worse off. But if he's well-trained and applies his good training to war surgery, then he'll come out knowing more than he did when he went in. I think that's true. In our unit, which was mainly an

- Gerbode: across the river, so they'd run out of water, because the water came across on the bridge. That was a problem until the army built another bridge and brought the water back again.
- Hughes: When you went into a hospital like that, would you just literally take over?
- Gerbode: Oh, yes.
- Hughes: What would happen to people like Wolf?
- Gerbode: He stayed on. In fact, he even stayed on as professor after the war, until Fritz Linder went there to take his place. In fact he stayed on after that. They gave him a cancer institute to run.
- Hughes: But he wouldn't have been caring for patients once the Americans arrived?
- Gerbode: No. I think they let him take care of the Germans who were still there, but not the Americans. We moved in our whole unit there.

Mutzig

Gerbode: We moved out of that area and chased the Germans all the way up to the Rhine. I set up a beautiful little hospital in Mutzig which is in view of Strasbourg across the Rhine. I set it up in the middle of the night in a gigantic rainstorm. It was in an old French barracks. Our boys really did a tremendous job of converting it into a hospital. They worked just like demons. It became a beautiful little hospital in about forty-eight hours.

We took care of the wounded there for about two weeks. This was over Christmas. We had a Christmas tree. The Germans were on the other side of the Rhine at that time, which was not too far away. Every once in a while, they'd come over and bomb some of the units nearby. They tried to knock out the water tower, for example, that we were using, but they missed it.

Hughes: Were those teams static? Did you work with the same group?

Gerbode: Not always, but pretty much they worked together. I had the same assistant pretty much during most of the activity. The other thing was, to use the noncommissioned officers and sergeants. It was great to train some of these fellows to be assistants. After a while, they were so good, they were really better than some of the doctors, because they would do what you told them to do, and they would remember. Then they'd do it exactly the same the next time. There was never any argument about what they should do when they were assisting. Not that the doctors would argue, but still, it was great having a first-class assistant. I had two that were excellent. I think I mentioned their names before. One of them was Querhammer, who was a farmer from the Middle West. The other was Carson, who was a carpenter from Los Angeles. I've lost track of Querhammer, but Carson is a successful contractor now. I met him a couple of years ago. Very attractive, very intelligent guy.

The patients would be brought into the operating room, the ones who needed operations, and we had one captain who was assigned to arranging all the anesthesia. He immediately would get busy getting the anesthetic things together. Sometimes he would be an anesthetist, and sometimes other doctors would act as anesthetists. Sometimes we'd use the nurses. Then we would operate, and then the patients would go back to a recovery room, which was another tent, where they would sometimes be evacuated in a day or two or three to another base hospital or might even stay there if we thought they would recover quickly. The patients would come in pretty muddy and pretty messed up, so it was a job getting them cleaned up so that they could be operated upon. But luckily, they were mostly in good health, so you were operating upon somebody who was young and healthy, and this helped a good deal, particularly when we had enough blood so we could replace their blood loss.

We tried to send patients to tables where the surgeons had a little more expertise in one field rather than another, and this meant that those who had good orthopedic training would get most of the bone injuries, and those who had other training would get the other kind of [injuries]. My table, I guess, got pretty much anything that came along. We had lost our neurosurgeon somewhere along the line, so that we had to do the neurosurgery as well as the general and thoracic surgery. I had to do a fair number of brain cases and spinal cord injuries as well.

Hughes: Had you done anything like that before?

Gerbode: No. They were about half medical and half surgical, and various levels of training. I was lucky, although I was young and not too far out of my surgical residency, I was given a major's commission. This was pretty good for a young guy going right into the war.

Hughes: Why?

Gerbode: Because I'd had very good training, and they recognized this. Then there was an opening in the unit, so I fitted the bill pretty well and got the commission. This of course was a great help, because being a senior officer gave me lots of opportunities which I wouldn't have had if I was a junior officer.

Hughes: You haven't said anything about diagnostic tools.

Gerbode: We had a mobile xray machine which we used. We had a whole team of roentgenologists who did nothing but take pictures and interpret them. They were pretty fast at it, so that if you had a compound wound with a fracture, they'd have a picture for you in fifteen minutes or so. Then you could use that to decide what to do about the patient.

We were lucky in having surgeons who were very good at orthopedic surgery, particularly Dr. Matthewson, who was the chief surgeon. He had had good training in fractures and bone injuries, both in Europe and at San Francisco General Hospital, so he helped a lot to establish the kind of operations which would be best for these patients.

There were quite a few joint injuries which required special care. We'd try to get them cleaned up and closed so that they wouldn't be infected. An infected joint is pretty difficult to cope with later.

The operating activity would come in great bursts of furious work and then there would be periods when there wouldn't be anything to do for quite a while. This is bad in any army or navy unit, because then everybody starts looking around and finding things to complain about. Usually it's the army or the commanding officer, and anything bad, including the food. I tried to avoid these long discussions as much as possible, and maybe that's why the commanding officer gave me these special assignments, because he realized I didn't want to sit around and gripe very much. I would much rather be busy doing something than worrying about what was wrong with the army.

Booby Traps and Mines

Gerbode: Another thing that I found out, when we started exploring places to set up hospitals, you had to watch out for booby traps. Those clever Germans would put a little bomb on a toilet flushing chain, or they put something that would look like a little prize or a souvenir on a pedestal. If you picked it up, the thing would explode and blow your hand off. So we were very careful about any objects like that.

Hughes: Did you have a crew that went through when you first arrived?

Gerbode: Yes. Then of course in some areas they had mined the roads and the areas around where they thought the [U.S.] army might go. So the army had a whole team of people that would go ahead and find out about mines and remove them. Some of the mine wounds were terrible. They had a cement mine which, when it exploded, would drive hunks of cement into the tissues. Of course that makes terribly infected wounds. We had a terrible time getting some of that [out].

Hughes: Was that the point?

Gerbode: That was the point of it. It was cheap to make them out of cement rather than steel or nails or whatever. Then when they exploded and drove these hunks of cement into the tissues, they all had to be gotten out, otherwise they were surely going to cause infection. When they went in through cloth, they carried bits of cloth with the pieces of cement. That all had to be removed. It was pretty messy.

Pushing Back the Germans

Gerbode: When they drove us all the way back to Epinal again from Mutzig, it was a very depressing turn of events, because we didn't realize the Germans were that strong. They had made this big effort to push us back. It was one gigantic, final effort.

Hughes: This is 1944?

Gerbode: Yes, 1944. So anyway, we went all the way back to Epinal. Then we waited there for a while until the Battle of the Bulge was over, until we started pushing the Germans back again. We had to go through the Hindenburg Line, so-called, and get through heavy fortifications.

Gerbode: of oil to burn the bodies, so they just stacked them in this big room about seven or eight feet deep, one on top of the other, and smelling pretty awful. [The Germans had] taken their clothes off, and of course taken all the gold out of their teeth and any rings they'd had. Outside of the gas chamber was a big pile of bodies of men, women, and children, just skeletons really, piled up like cordwood. Then outside was a couple of open tank cars filled with bodies as well. Some of them died of starvation; some of them had been killed; and some had died of typhoid or typhus or various other things. If anyone disbelieves this happened, they shouldn't, because it was really true.*

One thing I can say for the Germans is that they have documented this. If you go to Dachau now, you can see pictures of the whole thing, although some Germans just still don't want to believe it. But the Germans have made a big point of showing actual photographs of how they did everything, the places where [the Jews] had to sleep, and how they killed them and so forth.

Hughes: Why did you want to go? Was it for a medical reason?

Gerbode: No, I was just curious. I had known about Dachau; I just wanted to see it.

Hughes: It was well known?

Gerbode: Oh, yes. Remember I told you, when I'd been in Germany before, my cook's husband had been sent there.

Munich

Gerbode: In any event, Munich fell the same day [I went to Dachau]. So Dr. Cohn and I went right down to Munich. I found the little house we had rented in Geiseltasteig. It was in a forest, a beautiful location. There was an air-raid shelter dug in the front lawn. The house was locked; there was nobody there. I looked in the window, and there was a meal unfinished on the table. The people had left in a great hurry.

Hughes: Where did people like that go?

*Partly because of this experience, Dr. Gerbode contributed to the construction of the statue commemorating the holocaust, which stands near the Palace of the Legion of Honor in San Francisco.

Gerbode: Just before that the thing that was so obvious [was] that we had complete dominance of the air. Every night, and during the day, too, these huge flights of British and American bombers would go over to bomb various cities, just bombing them off the face of the earth. That was the only way you could get [the Germans] to give up, really: wreck the factories and the towns. They actually went after the center of the towns, too, because they had to get the people to realize that they were losing the war.

In fact, one thing that happened several times on the way down through western Germany, the mayors would come out and surrender the village, and then as soon as our troops started going through, the windows would open on the second floor, and the SS would start shooting at the troops. They killed a lot of our soldiers this way. They were such rabid Nazis, they just couldn't believe that they were going to lose the war. So then our commanding general said, "Look, if this happens once more after the village has surrendered, we're going to back off and level the town. Nobody is going to survive." So the next time it happened, it was a town called Crailsheim. It was a modest sized town, maybe fifty thousand people. And sure enough, the SS was there with their machine guns. So then the general pulled everybody out, surrounded the town with tanks, called in the air force, and they absolutely leveled it. I don't think there was even a chicken alive. But that was the last time the Germans did that. That was the only way you could deal with it, you know. We went through Crailsheim right afterwards on our way down further south--just smoking ruins.

Hughes: Would you do anything about the German wounded?

Gerbode: Oh, yes, we'd take care of them, just like the Americans. We took care of a lot of civilians that way.

Hughes: What was their attitude?

Gerbode: Well, at that point, they knew the game was up. They were sad, dejected, disillusioned people. This was even true of the soldiers, the old people they brought in, and the young people; they realized that it was hopeless.

The other thing, of course, is the German air force was wiped out. We could never find Stücker bombers in airports. They used the Reich autobahns for their airstrips, and then they'd bring the planes into the forests where they had everything camouflaged.

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Gerbode: So we were all told to get ready to go in the drink. Brodie Stevens said, "Well, Frank, I guess this is it." Luckily, these kids who were driving the plane--to us these youngsters looked like high school students--managed to feather this crazy engine and got it under control so they could get it into Newfoundland. We were very happy to land safely. [laughs] That was really something, to think that we'd go down in the ocean after going through all this other business [during the war].

They put us on another plane in Newfoundland, and finally we got to New York, after a couple of transfers of airplanes. My wife met me there. She was waiting in the Gotham Hotel. We had been able to send messages saying that we were coming home.

The thing that I remember so clearly on arriving in New York was to find business as usual, no sign of any suffering, and nobody really seemed to care very much about the war. It was very strange. And the same thing was true in San Francisco later. I could write another little chapter about the attitude of the people that didn't go away during the war.

Hughes: Could you say something--not a whole chapter--about that?

Gerbode: One of them that didn't go away said, "We're going to have refresher courses for you fellows [who have come back from the war] so you can remember how to take care of gall bladders and hernias and so forth, and get you back into shape." This was a terrible thing to say.

Hughes: Yes, as though you'd been away on a vacation.

Gerbode: We looked healthy, because we were all slimmed down and brown, so they thought we had been on a gigantic vacation. They were home taking care of everything and really suffering terribly.

Dwight Harken

Hughes: Dwight Harken crops up a lot in talks about the war. Since you both were more or less in the same field, I wondered if you had any contacts with him or knew about what he was doing?

Gerbode: Dwight is a friend of mine. He was with a Harvard unit which stayed in England at a base hospital, so he got a lot of these patients who had been evacuated by hospitals like mine. There he

Gerbode: Yes, everyone got one. It's a little star on a bar. I don't think any of us were wounded, so none of us got a purple heart. But there were several medals for meritorious work that were given to members of our unit. I didn't get one.

Hughes. But you got a unit citation.

Gerbode: Yes. The whole unit was cited for having contributed such a lot of good work during the war.

Hughes: When they say good work, they mean in the medical-surgical sense.

Gerbode: Yes.

Hughes: I know it's hard to be objective when you were part of it, but I've had the feeling this was an exceptional unit.

Gerbode: It was. It was so good, because we had all been academically trained, we all had gone through residencies, we knew good medicine and good surgery, and we tried to apply it to work in the field, which is a very good way to do it. We were so good that they constantly tried to break us up, put us in other units. But most of us resisted any attempts to move us. If the question came up, we said, no, we'd rather stay with our own group. But there were two or three surgeons who left the group and went to other units.

Other Base Hospital Units

Hughes: I saw allusion to the Fifteenth Medical General Laboratory which in 1943 was apparently moved into Italy. I don't know much more about it, but I thought maybe since you were there, it might have influenced what you were doing.

Gerbode: There were several big base units that were moved into--

Hughes: This was in Naples.

Gerbode: Yes, and also later on in Rome. For example, the Harvard General Hospital I think moved into Naples first and then Rome and stayed there during these final pre-evacuation treatments of patients. They did close a lot of the wounds secondarily that we had made originally in the evacuation hospital.

Hughes: It's a primer, isn't it?

Gerbode: It's a children's primer. He carried this all during the war.

Hughes: What was that for?

Gerbode: I don't know why he did it. Maybe he read it once in a while.
[laughter] It was only when people started griping and complaining a lot that he'd get cranky and do things that they would dislike even more. To me that was kind of a waste of time, because if you weren't acting up, he would leave you alone.

Hughes: That's all I have to ask about the war. Do you have anything more to say?

Gerbode: I don't really have anything much more to say about it. I said already that Harvey Cushing had long since said that war either makes or breaks a surgeon. From my own personal point of view, I guess what I got out of the war from a surgical point of view was confidence, because there wasn't anything, really, that phased me after doing all that work in the war. I guess that you get used to handling all kinds of situations.

Correspondence To and From Home

Gerbode: From the point of view of hearing from home, this was difficult, because we got very little mail. Once in a while, we'd get a batch of mail. I had a few people who wrote to me regularly. Mrs. Happy East Miller, a very lovely older woman of the Miller family in San Francisco, wrote to me regularly, and several other acquaintances. I guess they enjoyed writing to a soldier overseas. I would answer their letters, and they would go through all right.

Hughes: I wonder if any of those letters have survived.

Gerbode: I have some letters that I wrote at home. I haven't looked at them since I got back.

Hughes: Don't let anything happen to them!

Gerbode: I wrote a lot of letters, because it was a way to soak up time.

Gerbode: to operate upon and there wasn't much else to do, there was always a lot of work we could do in the laboratory. So that's when I started working with things which finally led to extracorporeal circulation.

Hughes: Why?

Gerbode: Vascular surgery was just beginning to be born, and I could see its future was going to be very exciting because if you could correct a congenital lesion, you usually had a pretty whole person. The choice then was either to do that or to do brain surgery or cancer surgery. Cancer surgery didn't make me very excited. It's a matter of cutting out a lot of tissue and then waiting to see whether a patient was going to get [the cancer] back again. One of the professors wanted me to be a neurosurgeon, and he tried everything possible short of killing me, which is really true, to get me to be a neurosurgeon.

Hughes: This was [Reichert] during your surgical residency?

Gerbode: Yes. It was really something to cope with him, because he was a very strong man. He had a very strong wife, who had decided, too, that this would be best for her husband, to have me be a neurosurgeon.

Hughes: Of course it was a compliment. [laughs]

Simulated Congenital Lesions and Extracorporeal Circulation

Gerbode: I finally just said, "No, I don't want to do that at all." So then I started making simulated congenital lesions in animals and trying to reduplicate what sometimes happened congenitally and then experimenting finally with extracorporeal circulation. Some of the first things we did were really quite curious. For example, the first oxygenation we did was to put the venous blood in bags with oxygen and shake them. Then we'd get the blue blood to turn pink, and then we'd give that back to the animal. This was the first time we had tried to do anything to simulate an artificial lung. I did this with John Callaghan, now a professor in Edmonton, Canada.

Hughes: This was right after the war?

Gerbode: Late '40s and early '50s.

- Gerbode: Eventually, as I worked my way into the faculty a little and became useful to them--I thought I was useful to them in the beginning, but more useful to them--they gave me a place in the old Stanford Hospital where I could see patients twice a week. But then the dean said, "I don't really want you to send any cards announcing that you have an office here." [laughs] He said, "You can see patients here, but don't send out any cards."
- Hughes: What did he think would happen to you?
- Gerbode: I didn't really want to find out why he said that. He was a rather peculiar man anyway, so it didn't matter.
- Hughes: How did that situation gradually change?
- Gerbode: Well, one thing that changed it was the fact that Dr. Holman found I was a good assistant, and he was the professor, so he had a pretty large private practice. So did Reichert, the neurosurgeon. They needed good help in the operating room, aside from the residents. So I would just scrub in and help them, and then finally once in a while, somebody would refer a case to me instead of to them, particularly if they went away. [laughs]
- Hughes: Was that all right with them?
- Gerbode: They couldn't say much about it. If the boss goes away, whoever is left behind can do the work if he can get it. This is generally true in all medical schools. The second or third in command is always very happy to see the boss leave.
- Hughes: This sort of thing, I would imagine, always happens to a younger man trying to break into a field, but--
- Gerbode: It does.
- Hughes: --the fact that you had been away and they hadn't would aggravate that situation.
- Gerbode: Yes. The other thing is that there were quite a few people who hadn't gone away, you see, and they had most of the practice.
- Hughes: Yes.
- Gerbode: Holman went away to the navy, and Reichert didn't. Holman served very well in the South Pacific and at Mare Island. But when he returned he was the professor, the chief, so he had no problem getting patients again. Reichert had stayed home, and I must say

Robert Gross: Operations for Patent Ductus and Coarctation

Gerbode: Anyway, there were two men in our country who really pushed things forward, and they were both men who'd worked a lot in the laboratory. One was [Robert] Gross in Boston, who did the first patent ductus arteriosus. Dr. Holman had been offered a patient to operate upon a patent ductus before this by Bill Dock, who was then on the medical faculty, but [Holman] turned the patient down. He didn't want to do it for some reason. So then he lost a chance to become immortal. But Gross did one, and he ligated it successfully. There had been a couple of attempts before, and they had failed. But his patient survived, and he was working in a hospital where there were children with all kinds of defects, and so he had lots of material. He immediately did a whole batch of patients with patent ductus.

Hughes: He was from Boston?

Gerbode: He was at Children's Hospital in Boston. He worked with Charlie Hufnagel in the laboratory. Between the two of them, they had made experimental coarctation and perfected an operation. About the same time that Clarence Crafoord in Stockholm had done a successful coarctation [October 19, 1944], they had done one in Boston [June 28, 1945]. This also caused tremendous excitement.

Hughes: And then you did one not long thereafter. You published a paper on it in 1951.

Gerbode: Yes, I did some very early. I did the first patent ductus at St. Bartholomew's Hospital in London in 1949.

Hughes: Yes, I read that paper--a young boy with a psychiatric problem.

Gerbode: That was a coarctation. Christopher Frye. He became a doctor at St. Bartholomew's later, and I saw him in London when I was over there recently.

The Blalock Procedure

Gerbode: Anyway, Blalock had also been experimenting on animals to try to correct coarctation. He really didn't think he could cut out the coarctation and sew the ends together.

Gerbode: The mortality rate wasn't so very great, maybe 5 or 6 percent.

Hughes: Most of these children were terribly sick, were they not?

Gerbode: They were very blue. Well, most of them were not very well developed, because they hadn't been able to run or play very much. But they blossomed with this operation.

Anyway, with [Clarence] Crafoord's operation for coarctation, Gross's operations for patent ductus and coarctation, and Blalock's developing the Blalock procedure, this caused a tremendous amount of excitement. Then everybody started trying to find other things to do. The ones who could were better off. These were usually ones who had worked a lot on experimental animals in the dog lab. This was generally true of the young academic surgeons. Now, the other thing that contributed to this a bit later was the fact that a lot of these young faculty members, like me, didn't have much to do when they came from the war. [laughter] So we were working in the lab anyway to keep busy.

Hughes: So it was a blessing in disguise.

Gerbode: They were the ones, then, who pushed the field forward. Harken was one. He very quickly started doing these mitral valve operations. He was accepted as a thoracic and heart surgeon because of his war record.

Factors in the Advance of Thoracic Surgery

Hughes: Would you say something now about some of the other things that were coming along that were essential to the advance of thoracic surgery?

Endotracheal Anesthesia

Gerbode: There was a great deal of activity in thoracic surgery. In fact, because of endotracheal anesthesia, surgeons were able to control an open chest operation much better than they could before [the war], when we didn't have very good anesthesia, didn't have anesthesiologists who could manage patients with an endotracheal tube.

Gerbode: the head stuck out of the end, and they had a rubber collar around the neck. The inside of it would expand or contract the chest by negative or positive pressure. We had one of these machines over here and used it for a while on polio patients, but that was a terrible way to do it.

Anyway, the Engstrom respirator was a volume respirator. It would take over the patient's respiration for long periods, months. It was a big advance.

I got to know the Swedes pretty well. I had been over there a few times. In '49 I went over there from England and saw this machine in operation. When I came back, I said we need to get an Engstrom unit, which seemed to me much better than having the anesthesiologist stand there squeezing the bag during the whole operation. The anesthesiologists said, "We can tell much better by the feel of the bag whether we're doing a good job or not." I said, "You may think that, but..."

There was only one anesthesiologist who was willing to try one of these machines. I got my friend Viking Bjork to send me a second-hand one. I didn't have enough money to buy a new one, but he gave me one which was about a year old and had it shipped over. I gave him what he thought was a fair price for it. Everybody in the place was scared to death of it. My associate, Dr. [John] Osborn, after we'd been experimenting with it for a while, wrote me a memorandum telling me he thought it was a dangerous machine that was killing patients, and we shouldn't ever use it.

Hughes: Was it killing patients?

Gerbode: No, it was saving patients. The chief of anesthesiology, [Philip] Bailey, wouldn't use it. One anesthesiologist by the name of [Ernest] Gianotti finally was willing to try it, and he began to use it very successfully.

Later on they were still not convinced, so I brought over the engineer and professor of anesthesia from the Karolinska Institute in Stockholm. I got money enough to pay for them, to bring them over to keep them here for a couple of months to work in the intensive care unit, in postoperative care, and also in the operating room. They finally were able to demonstrate that the machine was a big advance. We were the first unit in the country to use the volume respirator clinically.

Gerbode: the work. It was very difficult to get this room [from] the administration. The people in control of the rooms were not quite sure whether this was going to be a big thing or not, and people like to hang on with great enthusiasm to their territorial acquisitions in any setup. So I finally got a storage room in the basement to start the lab. Then we bought some catheters and used them on experimental animals first of all. Then as time went on, we found Herbert Hultgren on the East Coast, who was trained in cardiac catheterization. He got a fellowship to come out and start the lab.

Hughes: Excuse me for interrupting you, but with a technique so relatively new, how would Hultgren have received training?

Gerbode: He trained with some people in the East who had one of the early catheterization laboratories.

Hughes: Where was he?

Gerbode: He was trained [at Thorndike Memorial Laboratory, Boston].

Hughes: So there were a few institutions that did cardiac catheterization.

Gerbode: There were a few institutions that had already started, that's right.

So [Hultgren] came out. I think it was the Giannini Foundation that paid his fellowship. But the amount they were willing to pay for a fellowship at that time was pretty small. However, he was willing to accept it as a starter. Then we had to get money for technicians as well, because somebody had to do the blood chemistries on the blood samples. We found money here and there to do that.

Dr. [Arthur] Bloomfield, who was professor of medicine at that time, said, "Well, we shouldn't charge anybody for this test the first year, because it's an experimental procedure. We have to do it for nothing." Which shows you how tentative the faculty members can be with new things. They have to go ahead very cautiously.

Hughes: Because it was experimental, in those days did you have to get any special patient consent?

Gerbode: No. At that time we didn't have to go through the business of getting informed consent. However, we would tell patients anyway what the risks were. But the risks were practically nil anyway. The patients were very anxious to find a proper diagnosis.

Gerbode: Well, there was quite a bit of science and history connected with making a diagnosis without catheterization in congenital heart disease. You could tell by the contour of the heart and the physical findings, the sound of the heart. You could tell pretty well the general category of the type of congenital anomaly there was. Then they had a lot of hearts to examine postmortem, because a lot of these children were dying. So they were very careful to do postmortem examinations on them. They developed quite a science of correlating what they had seen preoperatively or before the child died with what they found in an autopsy. You can do a pretty good job of guessing what's wrong that way.

But coming back to catheterization, the other thing the catheter would do, you could take a blood sample from the chambers of the heart, and if, for example, you found the oxygen saturation in the right atrium very high, as compared with a vein, then there is certainly mixing of arterial blood with it. This meant that there was a shunt somewhere, a hole between the two sides of the heart. If you found the step-up oxygen saturation to be in the right ventricle, and it wasn't so much on the right atrium, then that meant the shunt was between the two ventricles. There were also pressure differences, too, when there was a shunt from left to right in the ventricle.

Hughes: [Werner Forssmann inserted a catheter into his own heart in 1929.] I was just wondering why it took so long for the technique to catch on.

Gerbode: Because people shuddered at the thought of sticking something up the vein into the heart. It's like murdering your sister or something. It's the same idea as you can't touch the heart and operate upon it. You're doing something which everyone said would never be possible or should never be done.

Hughes: So really, one reason that catheterization came into general practice after the war was because the heart was by then considered touchable.

Rapid Xray Film Changers

Gerbode: Yes. It was not inviolate any more, and they found out they could do it repeatedly and not harm anybody. So this made it very much more acceptable. Later on, of course, we began to inject dye into

Hughes: I thought thorium was a no-no by then because of the danger of radiation damage and cancer.

Gerbode: [It was later stopped because it was absorbed by the spleen and other organs and was thought to be carcinogenic.]*

We used that catheterization unit for a number of years. They took the old machine down to [Palo Alto] when Stanford moved, which was just as good, because then we were able to get a more modern one here. As luck would have it, a very wealthy man came into the hospital with heart disease around that time, and he appreciated very much how well he'd been treated, not surgically, but medically. He said, "What do you need now that Stanford is moving to Palo Alto?" We said, "We need a modern angiocardiographic machine," which then cost about eighty thousand dollars, I believe. He said, "All right." So he gave us the newer model. We came out all right on that one.

Hughes: [laughs] I bet the people at Stanford were hating themselves!

Gerbode: Yes. But since then they've done very well. They have everything they need down there, so there's no worry about them.

Blood Transfusion

Hughes: What about techniques for rapid blood transfusion?

Gerbode: There wasn't anything really special about rapid transfusion. The blood came in bags, and you'd just squeeze [blood] into a vein by squeezing the bag. Or you could put a blood pressure cuff on the bag and pump it up and squeeze it that way, which works very well.

Hughes: These were techniques that you'd been using before the war as well?

Gerbode: Yes. The blood bank here in San Francisco [Irwin Memorial Blood Bank] has always done a fantastic job. [San Francisco] was among the first to have a voluntary blood bank, because of the war in the South Pacific.

*Dr. Gerbode added this comment later in the course of editing.

Hughes: Do you have any idea why there weren't many reactions during the war?

Gerbode: No, I don't know why. I guess maybe it was not as pure as it is now. From some reason, it wasn't apparent that there were many people sensitive to it.

Hughes: Was the dosage well worked out?

Gerbode: Yes, the dosage was pretty well standardized.

Hughes: When you returned to the states, was the supply still plentiful?

Gerbode: No, it wasn't very plentiful when we came back. For civilian use it wasn't nearly as plentiful and generally used as it was during the war. But it was later, of course. There was a tremendous market, and all the companies started making it. That brought the price down and made it available very quickly. As soon as there is a big market for anything, situations improve.

Hughes: In those early postwar years, how were decisions made about which patients would receive penicillin?

Gerbode: Virtually every wounded person has an infected or contaminated wound, so you give penicillin to protect [him] against massive infection.

Hughes: I was really meaning when you were back in the states and the supply wouldn't cover everybody. Then you had to make a decision.

Gerbode: You didn't give people prophylactic penicillin, for example. You'd give it to people who really had a serious infection.

Drugs Regulating Blood Coagulation

Hughes: I see. Drugs to regulate blood coagulation.

Gerbode: We were using massive quantities of blood in extracorporeal circulation. In fact, at one point, our unit here was using 10 percent of the total output of the Irwin Memorial Blood Bank. We were the biggest users of blood because of the heart-lung machine. We were the only ones [on the West Coast] doing open heart surgery then. So we were very important customers for them. I realized very soon

Visiting Professor at St. Bartholomew's Hospital, London,
1949-1950

Frank Rundle, George Ellis and Emmanuel Amoroso

Gerbode: In 1949 I was offered a position as an associate [in surgery] at St. Bartholomew's Hospital. It was largely because of the experimental work I was doing in a field which was opening up. Some of the papers I'd written on experimental vascular and cardiac surgery were being published. I guess I had a mini reputation at that time. Frank Rundle was the associate director of the professorial unit at St. Bartholomew's. Actually, as time went on, I was offered the job, because he wanted to go back to Australia.

Hughes: What was the unit?

Gerbode: The professorial unit is the main teaching unit, although they [also] teach in other units there.

Hughes: In surgery?

Gerbode: Yes. But they had a professorial unit in medicine as well. Then the other London hospitals had similar ones, where they were teaching medical students. That unit is the one that makes up all the schedules for the medical students and arranges the lectures and does all the teaching and research functions.

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Gerbode: The ward services are run by consultants; they teach, too, but not as much as the professorial unit.

I had an operative list that I was given almost daily. I operated very soon after I got there. I did the first patent ductus at St. Bartholomew's. I operated upon some blue children, too. This was before open heart surgery. They would just assign me some cases on the operative list every week. At that time the anesthesiologist became a very good friend of mine. His name was George Ellis, a very, very fine chief of anesthesiology, a bachelor and a very interesting man. He used kind of old fashioned medicines, but he was very good in managing an open chest, usually just by inflating a bag by hand.*

*This sentence was transferred from the session recorded on 10/23/83.

Gerbode: children by her. But I think they've subsequently been divorced. She was a great help to us, because she loved to go back on weekends and take care of the animals. She just thought that was a great thing to do, and she was very good at it.

Dog Surgeon

Hughes: All this was unusual for British surgery at this time?

Gerbode: Oh, yes. I mentioned before that most of the British surgeons didn't believe in experimental surgery. They called the people like me "dog surgeons." Not all of them, but some did.

Hughes: How did they expect surgeons to learn?

Gerbode: They would just start doing things on human beings. Of course, they weren't doing very much. They were doing what you might call old-fashioned surgery, because they weren't doing vascular or cardiac surgery, and they were just beginning to do thoracic surgery. They were operating on lung tumors or bronchiectasis or tuberculosis; that was acceptable, and that was about it. There were a few people who recognized that to get on in a new field, you had to use experimental animals. Otherwise you'd be doing experiments on humans.

Hughes: Is that what Rundle recognized?

Gerbode: He recognized that I could do it. He saw in our old lab [at Stanford San Francisco] experiments that we were able to conduct, and Amoroso in London believed in it, too. That's why he was very anxious to help me.

Hughes: It sounds as if you were very fortunate in having these two connections. You could have gotten over there and found you had no [opportunity for research].

Gerbode: It was. Well, I wouldn't have gone unless I had a pretty good prospect of being able to do something. The dean was a fellow by the name of Harris, and after I'd been there for a few months, he began to ask whether I would be interested in staying. He told me how lovely it was to have a house in the country, and so forth and so on. But...

Hughes: It didn't work. [laughs]

Hughes: What were the wrong concepts?

Gerbode: One of the concepts was why did the blood pressure go down when there was too much intrapulmonary alveolar pressure. The old concept was that the heart was squeezed by the lungs, and that's why the pressure went down. My feeling was that the pressure went down mainly because the alveolar circulation was interfered with by too much intrapulmonary pressure at the capillary level.

Hughes: How do you get a feeling like that? Observation?

Gerbode: No, it's just that you think about a concept, and you think about whether it's right or wrong. If you think it's not right, you have to prove that it isn't right. That's where experimental work comes in, you see. Or if you think something is right, and everybody else thinks it isn't right, then you have to show why it's right.

Hughes: But the hard part is getting the idea to counter the existing idea.

Gerbode: Well, I suppose that is hard, but you're not filled with some of these things every day. You think of one thing, and then you have to work on it for months to prove it so or dispose it so. That's what experimental surgery is about.

Anyway, we had a wonderful year there in London. I made lots of friends and have kept up an association with England ever since in various ways. I had made some friends among the English surgeons during the war, mainly in Sicily. They were friends when I got to London, and we saw them and got interested in their careers, and this was very nice for us.

Honorary Perpetual Student

Gerbode: Later on, because of having been at St. Bartholomew's, they made me an honorary perpetual student, which is the only honorary degree they can give at St. Bartholomew's. I guess when I was made an honorary perpetual student, there had only been seventeen before, or maybe I was the seventeenth. They had a little ceremony and gave me three huge volumes of the history of St. Bartholomew's Hospital, which started in the fifteenth century. They said at the time, "We have to make you a perpetual student because it's going to take you that long to read these three books." So anyway, that meant that I could wear the honors tie of St. Bartholomew's. They have two different kinds of ties. They have one [for] a regular graduate.

Gerbode: surgery was done in big hospitals by men who were consultants after they had been trained for some years. Sometimes they weren't as modern as they might be, but they were good anyway. They followed concepts which were pretty well developed, and technically they did good work. They always had good assistants and good people to take care of the patients afterwards.

The other thing about the British hospitals is that the nurses have a great deal to say about the patients. They take the patients very seriously, and if they find that a patient hasn't any place to go home, they'll keep the patient [at the hospital] until they feel it's nice to send the patient home. They don't allow the surgeons into the surgical wards until a certain time, ten o'clock or something like that, because they say, "This is our time to clean up the patients and get them set so that you can come around and have your ward rounds at ten o'clock." I was trained [in the U.S.] to arrive at the hospital at seven thirty or eight o'clock in the morning, and [in London] I'd get there every day, and I couldn't do anything. They would look at me as though I was a little bit nutty by getting there so early.

Hughes: Did you find that in general British surgeons were open to new ideas?

Gerbode: I think after the war they were a little more receptive to new ideas. As I say, British surgery had been good for a long time. It didn't set the standard for the training of surgeons as much as the Germans in the prewar period. The Germans really were the ones who set the standards for the training of surgeons and were the basis for what later developed as the surgical residency type of training in this country. That was brought over by [William Stewart] Halsted and some others from Germany. Halsted is credited with being the first to introduce the resident surgery training program, which is about five years of graduated responsibility. This is still called the Halsted method in this country.

Hughes: Did the British have something similar?

Gerbode: Not really. Not quite as formal as the Germans. But they kept their young men around in hospitals for a long time before they were made consultants.

Hughes: They still do.

Gerbode: This was when it was starting.

Hughes: But they weren't funding experimental surgery?

Gerbode: Not very much--it was very, very difficult. To do experimental surgery, you were supposed to have a veterinary license at that time. So they said if you are going to operate on animals, you're going to have to get a veterinary license. So I said, "Okay, I'll apply for one," and I got it the day I left, almost a year later. [laughter]

Cardiovascular Surgery

Hughes: Now that we've talked so long, maybe we've covered everything in this quote. You start the paper, which is called "Experimental Surgery of the Heart and Great Blood Vessels"*--you're the first author; the second author is F.F. Rundle--with the following paragraph:

Substantial as are the recent advances in the therapy of the congenital defects, it is not too much to say that cardiovascular surgery is still in its infancy. Thus the chief scourge, coronary artery disease, is still beyond surgical grasp. So, too, are the chronic valvular defects. Yet we are conscious today that the field is developing rapidly. Further spectacular advances may well lie just ahead, for the surgeon has new and powerful weapons at hand, drugs to regulate the coagulability of the blood, penicillin, blood transfusions, controlled respiration during thoracotomy, and methods for vascular suture and hemostasis.

I was wondering first of all what you were thinking about when you said cardiovascular surgery is still in its infancy.

Gerbode: We didn't know exactly how to close a hole in the heart. It wasn't until later that the patient's own pericardium was used, or various cloth materials, the same as for vascular grafts.

Hughes: Were there not people operating for holes in the heart before the war?

Gerbode: No.

*Stanford Medical Bulletin 6 :247-256, 1948.

Gerbode: It's on the right side of the heart, and either with a medial or a right thoracotomy, it's right there in front of you. You can cut into the atrium and sew on it and take pieces of it out without interfering with the circulation. The atrium will tolerate that.

Hughes: But wasn't that a new concept in itself, that you could do these things without interfering with the circulation.

Gerbode: Well, it wasn't a concept; it was a finding, really.

Vascular Anastomoses to the Heart

Hughes: Was that your finding when you were doing the work on vascular anastomoses?

Gerbode: Yes, it was. When I was doing experimental surgery, I found that I could sew the atrium and do anastomoses to it. In fact, I wrote some papers on it.

Hughes: Right after the war.

Gerbode: Yes.

Hughes: Now, was that a first? You were working with the superior vena cava, as I recall.

Gerbode: Yes, that's right. It was among the first, but I'm sure other people were working, not exactly the same way that I was, but they were finding out they could cut into the heart and sew it up.

Hughes: I read something that gave me the impression that keeping the heart in its natural position was very important. One of Elliott Cutler's problems apparently was that he was displacing the heart as he was operating, and it was only--

Gerbode: Yes, it was. You can't do that.

Hughes: --later that it was found that you really had to keep the heart--

Gerbode: You had to keep the heart--if it was going to pump--where it belongs.

Hughes: The reason I bring this up now is that when you were doing these anastomoses, you really had to be very careful about how you were handling [the heart].

IV THE DEVELOPMENT OF CARDIOVASCULAR SURGERY

[Interview 5: August 16, 1983]##

The 1983 California State Bill on Animal Experimentation

Gerbode: Even now there is a bill before our state legislature to limit the use of animals for experimental purposes. This is extremely foolish, and is mainly sponsored by southern Californians, mostly in Hollywood. What they don't realize is that animals are sacrificed in pounds every year by the thousands. In San Francisco alone we kill five thousand dogs a year, stray dogs that have been cast out by people who don't want them. These animals could be used very beneficially for humanity for experimental projects of a wide variety. The animals do not suffer. They're all anesthetized or very carefully taken care of. This work is always supervised by special people who are watching constantly about whether or not bad treatment is given to the animals. High standards have to be maintained because we get government projects, and they maintain surveillance over the work.

Oxygenators, Hypothermia and Open Heart Surgery*

Gerbode: When we came back from the war, most of us, as I mentioned before, didn't have very much clinical work to do, so we were interested in working on what we thought was the frontier of medicine, and we turned to the laboratory. Just with regard to open heart surgery,

*See the session recorded 4/23/84, pp. 349-352, for further discussion of these topics.

John Kirklin and the Gibbon Heart-Lung Machine

Gerbode: It was a screen type of oxygenator and was only used extensively in one place in the country, and that was with Dr. [John W.] Kirklin at the Mayo Clinic. He quickly used it, or a modification of it, on a large series of patients at the Mayo. Dr. Gibbon himself did the first successful patient with that machine, but he did not have the volume nor the organization to do lots of cases, which was true of Dr. Kirklin.

Hughes: Was it deliberate that Kirklin was the only one that had access to the machine?

Gerbode: The Mayo Clinic decided that it was very important to get into the field of open heart surgery. They have tremendous resources and a big organization, so they can go into anything that way with lots of people participating. Then the Mayo also is in the center of the United States and is a place where they collect all kinds of cases. They made it advantageous for the cardiac patients to go there.

Hughes: Why did the Mayo decide that cardiovascular surgery was the thing?

Gerbode: They always like to get into whatever is going to be important in medicine or surgery, and they are financially so well off that they can do it. They can get resources, spend money on equipment without delay or the problems that you might find at a university. So they got into the picture very quickly.

The DeWall Bubble Oxygenator

Gerbode: Working in Walt Lillehei's laboratory was a fellow by the name of [Richard A.] DeWall. DeWall used the principle of running oxygen through blood to oxygenate it. The oxygen would drive out the carbon dioxide, so he had blood that was fully saturated with oxygen without much CO₂. He made what is called the DeWall bubble oxygenator, which is the prototype for the most widely used type of oxygenator everywhere now. It's not the best, but it's practical and it's cheap and easy to run, and this has big advantages. For a short case it's adequate, but for a long case it isn't.

Hughes: Why is that?

Gerbode: The problem with all these devices is that things have to be simple to use and be economical. So it's been a problem to make it so simple that any profusionist could use it and then have it disposable and not have to be reesterilized or cleaned, because that increases labor and raises the cost a good deal.

There have been three or four membrane oxygenators developed since Clowes introduced it. They are sold commercially by a number of firms now. We think the one we've been working on is going to be better, but we'll have to wait and see whether it will be. The tests seem to indicate that it will be. It takes an awful lot of money to develop something like this. I can't tell you how much money we've spent on this one project, but it's probably a hundred and fifty or two hundred thousand dollars. The company that is working on it has already spent a half a million dollars to bring it up to commercial availability.

Hughes: Was that a competitive matter?

Gerbode: Oh, yes, it's competition against several others which are on the market already. People, logically, will pick the one which works the best and is cheapest.

Hughes: What are the advantages of yours?

Gerbode: One advantage is that it has a built-in heat exchanger, so you can cool and warm the blood easily, which means that you can use hypothermia, reduced body temperature, quite simply with the device. Some of the other devices require another instrument to raise or lower the body temperature. The other things is that it is extremely atraumatic. Also it preserves the platelets better than some of the others, and platelets are very important in blood coagulation.

Hughes: I assume it's a synthetic material from which it's made.

Gerbode: It's mainly design, the internal method of oxygenating the blood. The blood goes through a very thin layer while it's exposed to the oxygen through a membrane. The way that turbulence is caused inside, in the machine, either damages the blood or doesn't. It either oxygenates it perfectly or it doesn't. And we've done so many experiments on how to run the blood through the machine to make it atraumatic and efficient that we think that maybe we're better than others in that respect.

Hughes: Were you influenced at all in the theoretical stage by anatomy, by how nature does it?

- Hughes: That, then, is not a standard part of a residency in anesthesia?
- Gerbode: Oh, I think most residents have at least to be there when babies are done, but I don't think a first-year or second-year resident in anesthesia would be given a baby to do until they were pretty sure he knew what he was about.
- Hughes: I hope not. You mentioned in the case of the early British machines that the rubber tubes were causing damage.
- Gerbode: Yes. It's even true now. Russia and China don't have a very good plastic industry. China has virtually none. So they take the tubes which they've used to conduct blood and clean them with brushes and chemicals in a special room. Then they're all hung up like spaghetti on the wall to dry out. Then they're sterilized. But you cannot really clean a tube perfectly that way. There are always tiny bits of foreign material still left in there, and the body senses that very quickly. So when you use equipment like that, there are fevers and sometimes infections. Where the tube is put into the vein, in an arm, it will thrombose quite easily or get infected.
- Hughes: So that's yet another advantage of your machine; the very fact that you're seeking to make it disposable isn't just a money matter, it's also a safety precaution.
- Gerbode: Well, you know, it is a money matter in the end, because you know the one who can produce the best disposable machine is the one that's going to be sold.

Hypothermia (Continued)

- Hughes: You mentioned hypothermia and talked a little bit about it last time, but I'm curious about the fact that hypothermia and the heart-lung machine were really going in tandem, and yet it took a number of years, maybe ten years, before the two techniques were put together. Why was that?
- Gerbode: The main reason that hypothermia took hold in the beginning and was used by people like Henry Swan, John Lewis, and Walt Lillehei, among others, was that they didn't trust the heart-lung machine. Maybe this was justified, because the early heart-lung machines were traumatic and not terribly good. So they would choose

Gerbode: uses it now. They inject cold solutions into the coronaries through the root of the aorta to stop the heart, make it quiet, and then you have a bloodless field which isn't moving, so you can operate faster and it's better.

Hughes: Is that the way you initially used hypothermia?

Gerbode: No. We didn't use that until after it was introduced in Germany, mainly, and after a few other places in this country started using it. We were not very early in the development of hypothermia of the heart.

Hughes: I've seen pictures of bathtubs in the operating theater.

Gerbode: Yes. [laughter] That was total body hypothermia, mainly for children. Some people even now use total circulatory arrest for complicated repair of children's hearts. The Japanese and some surgeons in New Zealand have the child in a tub of ice-cold water and reduced the body temperature to twenty or twenty-one degrees, and then operated quickly, and then raised the body temperature again after the repair.

Hughes: Is that [done with] children particularly because they can bounce back better?

Gerbode: They bounce back. They can respond to this better than an adult can, and of course they're smaller, so you can [better] control the [temperature] of the mass of the child.

Hughes: I understand that was quite a problem: the temperature would drop after you thought you had reached the proper level.

Gerbode: Yes, it goes down even more, and it's slow to recover, too. We find, for example, when we use hypothermia with a heart-lung machine and we think that the body temperature is thirty-seven in the operating room, by the time the patient is in the recovery room, very often it's lower. So we always quickly start putting blankets on to keep the patient warm so that won't happen.

Teamwork

Hughes: Perhaps this is the time to talk about teamwork. I think it underlies a lot of your research, but in one paper you particularly stress the importance of teamwork in cardiovascular surgery. I was wondering if you could say a little more about this, because I think, again, this was a postwar realization, was it not?

Gerbode: to try to solve them. Well, making a membrane oxygenator in the early 1950s was not anything you did in a few months. We realized that it was going to take a long time, and we had [a backlog of] patients waiting for operation. So he and I and Dr. Osborn made another type of disk oxygenator as a temporary expedient, waiting for the years to roll by before the membrane would be ready. We used that disk oxygenator for maybe three hundred cases or more. It was very good, atraumatic, and we could control body temperature very well with it.

In any event, Bram worked shoulder to shoulder with us all the way through. Finally, it got to the point of having our first prototype membrane oxygenator, which was used in prolonged profusions, mainly with the help of Dr. [Donald] Hill, who took over the project of applying it to traumatic lungs and viral pneumonia patients who were really in desperate shape because of their reduced pulmonary capacity. Bram participated in all the early experiments using that prototype membrane oxygenator. We found that we could keep a dog alive for days with it, which was something you couldn't do with a bubble oxygenator. And we finally applied it to human beings in a project sponsored by the National Institutes of Health. This was a cooperative project with a number of other centers in the world. It was a controlled experiment of alternating patients to see whether or not using a device like that in patients who were dying from severe pulmonary insufficiency would work.

We found out [we could]

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Gerbode: ...quite safely keep a patient alive for days. The longest one was twenty-three days. We kept a patient on almost complete control of the lungs with a machine for twenty-three days. That's a record, I think, and it showed that a membrane oxygenator could be a very useful tool in various types of pulmonary insufficiency.

Industrial Development of the Membrane Oxygenator*

Gerbode: We finally got our membrane oxygenator up to the point where it had to be further developed by industry, because you can show the value of a certain concept or a certain group of instruments to do a

*This section was moved from the session recorded on 9/27/83.

Gerbode: Yes. A peer group outlines what has to be done. So with our membrane oxygenator, we've gone through all this already, and now the company is just getting it down to the point where they can produce the device with virtually no possibility of any failure in any part of it.

Hughes: Remarkable. To graduate from one stage to the next, i.e., from the animal experimentation to the human, is solely based on survival rate?

Gerbode: No. It's a matter of making certain observations, and these observations are designated by a peer group of experts. For example, [if] you're using something in which blood is being used, you can't have a certain amount of hemolysis, you can't lose platelets, you can't lose red cells. A lot of criteria are set up. The FDA has done this, acting on advice from experts.

Hughes: Yet when it comes to pure surgical procedures, without the use of artificial devices of any kind, there's no such regulation, is there?

Gerbode: If you're using a new surgical procedure which has been more or less established, you have to go to the patient and say, this is still somewhat experimental. You require the patient to sign a document stating that he understands, because otherwise he might sue you.

Hughes: But that's a different sort of regulation.

Gerbode: Yes.

The Disk Oxygenator

Hughes: How did the disk oxygenator fit into the picture?

Gerbode: The disk oxygenator was a temporary thing which we were using because we couldn't get the membrane oxygenator working properly. We finally did, but it was only a prototype. The one we are hoping to get on the market soon is an outgrowth of that prototype, but is a much better device and very easy to use, and it's disposable.

Hughes: Do you remember the date when the disk oxygenator was first used?

Gerbode: It was late '50s, early '60s.

Hughes: Was that always just a one-model machine?

Hughes: Would you care to say something about the acceptance of these machines by your colleagues?

Gerbode: The acceptance is a bit difficult until you can make it easy [to use], because the men who run the perfusion devices, run the heart-lung machines, are usually technicians, and they don't really like anything that's very complicated. They like to have it easy to put together, easy to run, easy to get rid of. We've always been lucky here, because we've always had a physician supervising the work. Dr. John Osborn has followed all this work and has been responsible for many of the developments from the very beginning. So we were always ahead of the game by having an expert physiologist, you might say, standing side by side with the project that whole time.

Pump Technicians

Hughes: What about the training of the technicians?

Gerbode: We were lucky in training our own. We got a technician from the East Coast who was very good with bubble oxygenators (which we finally had to say we were going to use as a temporary expedient, and we still use them). Angelo Iatridis is a very good perfusionist. He trained at least five technicians with us, who are equally good, and one who was especially good at doing research. See, we still do a lot of research on animals in various ways. We're constantly testing devices and doing things on animals to find out what's best.

Hughes: Is there now a formal setup for training technicians?

Gerbode: No. I don't know exactly where there is right now. I know that they've been wanting to have a formal training period. They have their own society, and they meet once or twice every year, and they have a publication. But I'm not sure what the requirements are for training. The ones we have are really good. Actually, Mr. Iatridis and Dr. Osborn very seldom had to be there early in the morning to get things going. [The other technicians] got it all going very well. Then Mr. Iatridis and Dr. Osborn came in and kept an eye on it, and were there if anything happened.

Hughes: Do technicians have some engineering know-how?

Gerbode: Oh, yes, they know how to run it very well, and if anything goes wrong, they know what to do.

Gerbode: Yes, physicians and profusionists. But it's really mainly run by physicians or research people. It's called the American Society for Artificial Organs.

Hughes: You mentioned that some people preferred hypothermia and distrusted the heart-lung machine. I wonder if that interfered with grants in the beginning. Were people in NIH, for example, skeptical of the success of the heart-lung machine?

Pumps

Gerbode: No. Actually, I was on the surgical study section at the time when this all exploded, you might say. There were many applications for devices which when put together would become a heart-lung machine. In fact, one of the pumps they were using at that time was the so-called sigma motor pump. It was used by people in the field because it was the first pump available that would pump something through a tube. It was a pump which was used by the milk industries to move milk along in a tube from where they took it out of a cow to a tank where it was stored.

On the surgical studies section where all these applications were coming through for research funding, they all [required] a sigma motor pump, and a lot of them were put together so they could get a sigma motor pump. I suggested one time during one of the meetings that we buy a whole bunch of them and give everybody a sigma motor pump so they wouldn't have to apply for it formally through a research protocol. [laughter]

But then other pumps came in which were much better. There was another type of roller pump which is called a DeBakey pump. It was actually devised by some French people. Dr. DeBakey brought it over from Europe many years ago to push blood along in a tube for transfusions. Then they made larger and improved versions of it. Roller pumps just roll the blood through a tube. They've become less traumatic and much better as time has gone on.

Hughes: What was happening in Europe in regard to the heart-lung machine?

Gerbode: Yes, that's right.

Hughes: So it's more than just a technical barrier. It's a whole conceptual barrier.

Gerbode: It was. That's true of the pump aspect of it. The pump was relatively easy, but the pulmonary part of it, to get the gas exchange in the blood, was the more difficult part. That's why all these different types of oxygenators were developed, to find which was the most satisfactory.

Patient Response

Hughes: What about the patients' responses?

Gerbode: The early patients frequently had fevers postoperatively, and some of them didn't wake up as quickly as we wanted them to. There were minor complications quite often in the early days. But we gradually sorted out the reasons for everything by constantly testing and watching. Every time, in the early days, you did an open heart case, you kept track of everything, and if a little thing went wrong, you corrected it that day. Nothing was left over. Even if you had to go back at night and fix something. You did it that day.

Hughes: So you mean you would not do another operation until--

Gerbode: Until that was corrected.

Hughes: Was that common procedure everywhere, do you think?

Gerbode: I think mostly it was pretty common. I don't think anyone would go on with a complication that was repeating itself, but I guess some people would.

Hughes: I'm wondering about the degree of patients' [concern about] going onto a machine to sustain their life.

Gerbode: You'd have to explain to the mothers or the fathers or the patient what it was all about. In a child with a hole in the heart that was making the child very sick and almost dying a number of times, you'd have to say, "Well, now, there's only one way that we can try to stop this, and that is to try to close that hole. And in order to close the hole, you have to use a machine." Then you'd tell them what the machine was about, and you'd tell them what the risks were,

Gerbode: Oh, you always have problems with cardiologists. [laughter] One of my best friends, who is a very, very famous cardiologist in New England--he's one of the great cardiologists, a pioneer with a tremendous reputation--said to me, "Frank, a cardiologist without a surgeon is a nothing." [laughs] And it's true, because cardiology as practiced today really got started because surgeons could repair these things in the heart. That brought out all the diagnostic techniques--cardiac catheterization, angiocardiography, use of sound to diagnoses abnormalities in the heart. It all started because the surgeons could do something about it. Many cardiologists forget this. They get to the point where they think they can order an operation and even order the type of repair as they would order a meal in a restaurant. This is very irritating to surgeons. Some surgeons will take it because they don't want to offend the cardiologists.

Hughes: Because of this resistance, did you have times have trouble getting patients?

Gerbode: Right after the war, when we were doing closed mitral valvotomies--that is, we were fracturing tight mitral valves--there was a lot of resistance among the full-time faculty in the medical school. They wanted to treat the patients with digitalis and diuretics forever. Patients started coming in when they found out that one could correct mitral stenosis with a rather simple operation. If they ended up in the cardiology ward, they'd stay there for days and days while everybody scratched their heads and decided how many pills to give them and how sick they were. It was only very rarely that they would turn one of these patients over to the surgeon. So when I found that a referring physician wanted to have a patient come into the hospital, I'd get him to bring the patient in on the surgical ward [rather than on the medical ward]. And then I'd invite the cardiologist who was most surgically minded to see the patient and bypass all the rest of them.

Hughes: How long did this go on?

Gerbode: It went on for a couple of years. We obviously had to prove ourselves to them. But when they found that the mortality rate was very, very low and the results were good, they got more confidence in the procedure. They were always very quick to point out the complications. They were afraid of the unknown, afraid of their reputations. Fear has a lot to do with it.*

Hughes: Was some of the resistance due to the knowledge of the really rather discouraging prewar record of operations for mitral stenosis?

*These two sentences were moved from session 1, 7/20/83.

Gerbode: He was looked upon as being kind of a wild man because he was doing this, too, you know. He has a son with the same name who's a surgeon.

Hughes: [laughs] Do you know any of these people?

Gerbode: Oh, sure.

Hughes: I know you know Harken--

Gerbode: Oh, sure. I knew Elliott [Cutler] quite well.

Hughes: Is this the place to say a little bit about these men?

Gerbode: Starting with Bailey, I'd say that he was so successful in Philadelphia that it really went to his head. He proposed all kinds of operations which were very often radical. As we would say, he would try the operation on the human, then prove it on the animal. [laughter] He did an awful lot of straight operations on humans before it was established that the procedures were feasible, because there were a tremendous backlog of people with congenital and acquired heart disease that needed doing. So he had lots of material, and he ran kind of a factory there at Hahnemann Hospital in Philadelphia.

Hughes: In those days, the decision to operate was solely that of the surgeon?

Gerbode: Yes, or he had very compatible cardiologists. In that particular place, there wasn't really much wasted time on ward rounds and decision making. If it looked as though there was something that could be done, they'd just do it.

Dwight Harken in Boston was quite a bit more careful. He used his cardiologists and the other people at Harvard in determining the feasibility of operations. But he did an awful lot of cases, too. There wasn't anybody really to stop it. It was like sinking a hole in the ground and getting a gusher. There was oil there and it was coming out like crazy, then you tried to capture as much of it as you could.

Hughes: In general, were they operating on very sick patients?

Gerbode: The first ones we got were quite sick, too. There the problem was really one of not getting patients from the cardiologists unless they were pretty sick, class 3 and class 4 heart failure very often. So the mortality rate was high.

Gerbode: how bad it is. It's pretty well standardized. There are differences, however. One big clinic in the Midwest--I won't say which one--for many years would not use cardiac catheterization or exotic testing for routine cases. They felt so confident of their ability to make a clinical diagnosis, they would take an xray, an EKG, and make a clinical diagnosis, and let the surgeon find out during the operation how bad things were. If you're good enough, you can do that, and it's a lot cheaper.

In fact, my own feeling is we do too many tests on these patients. Whenever a new test comes along, there's a tendency not to subtract another test for the new one, but to add it onto the list, which means that there's another five hundred dollars or whatever in expenses. So now a patient comes in, has a physical examination, a chest film, electrocardiogram, an echocardiogram, a cardiac catheterization, and pretty soon he'll have several other very expensive things done to him. Then they'll add it all up, and it'll come out exactly the same as their clinical diagnosis was in the beginning. But you have to keep all these people busy, you know.

Hughes: Is there now a system derived from the granting organization itself that ensures that an institution follows these guidelines?

The Crippled Children's Services

Gerbode: No, not really. The only control [was] that the Crippled Children's Services in the late '40s and early '50s decided that it would set certain minimum requirements for heart surgery, and these requirements had to be met before it would approve payment for patients. We helped establish the first criteria.

Hughes: Can you tell me what they were?

Gerbode: You had to have a cardiac catheterization laboratory. You had to have done a certain number of cases with a very low mortality rate. You had to be able to do good angiocardiology, with good equipment, and you had to have a pediatric service which could take care of the ordinary illnesses associated with children. Initially you had to have the use of an experimental laboratory. This was very difficult for some people. For example, the ones in Oakland who wanted to do open heart surgery were held up for a while because they had no experimental laboratories over there. But the Crippled Children's Services realized that an institution to be very good would have to

Hughes: How was Crippled Children's Services raising this money? It must have been considerable.

Gerbode: They got more of an allocation. The next year around, they just said we are going to have to take care of this many more children. and so they allocated more money.

Hughes: From the state?

Gerbode: From the state, and some federal.

Hughes: Was that the major source of your income?

Gerbode: Most children with congenital heart disease come from families with not very much income. The families who had enough income so that they wouldn't be eligible for Crippled Children's Services had enough money to pay for their [treatment] because it wasn't very expensive then. A lot of them had comprehensive insurance. The insurance companies found out that if they had a family policy, it had to cover the child, too. This was quite a discovery on their part. They began to pay the same fee as the Crippled Children's fee then.

Funding for Cardiovascular Research

Hughes: What about the research side of it? Where was that money coming from?

Gerbode: All the research money came out of Heart Association grants, private contributions, or NIH.

One of our first contributions was not from any of these; it was from the Life Insurance Medical Research Fund. [It] must still exist, although we've never applied for it since the early days, but once we got twelve thousand dollars from them. I remember our professor, Holman, couldn't believe that anyone would give us twelve thousand dollars to do research.

Hughes: How did that come about?

Gerbode: He applied, and then that came right back, and he was bowled over.

Hughes: How did the life insurance people learn so quickly that this was a field that they should support?

Gerbode: in experimental animals, before we had a [heart-lung] machine, to study the physiology and to see what could be done. I tried to pass various kinds of experimental devices into the heart with the heart beating--buttons and things like that to close those holes. But I never had very much hope that it would work. But we were stimulated by the fact that if we could figure out a way of doing [the operation], that there were lots of people who needed to have it done.

Communication Among Surgeons*

Hughes: Now, when you were working on these very innovative procedures, were you following the literature very closely?

Gerbode: Oh, very closely. We were not only following the literature; we went to every meeting.

Hughes: Is that generally the way you kept up?

Gerbode: I think there were a group of people in the country who were working hard in the laboratory and trying to get [cardiovascular surgery] put forward. They would appear at various meetings in the country, and sometimes abroad, two or three times a year. My travel budget for those years was very big, and I was away from home a lot, as were these others, too.

Hughes: Meetings occurred frequently enough to keep you abreast?

Gerbode: There were at least two or three very important meetings a year. But then also, even in those days, we had a kind of a communication network, where you met people in the same position you were in and knew them by their first names and liked them, and they liked you, and so you'd call them up quite often and discuss things on the telephone. Or if they did something that was very important, they'd call you and tell you about it, knowing that you'd always give them credit if it was something original.

Hughes: So because of that system, people were very free?

Gerbode: Not all of them, but most of them were. The good ones were. And it was important to always remember if you did something that was an idea that somebody else had had and gave to you, that you'd give them credit for it. That's still mostly true.

*See the session recorded on 6/13/84, pp. 415-416, for further discussion of communication among surgeons.

Hughes: It sounds like a rather gross thing, to just push your finger through the valve. But I gather that the split was rather clean, and that the valve leaflets, once split, would appose correctly?

Gerbode: Oh, they would mostly appose correctly. You would very seldom produce insufficiency. The main problem is if the valve is so fibrotic that it doesn't move properly, so that it doesn't open. Even though you split it, it'll only open a little bit, because it's still too stiff. Also if it's too stiff, it makes it much more susceptible to fusion again.

Hughes: Did you ever have to cut?

Gerbode: I cut a few, but I never liked to do it very much. I had all the knives to do it with, but I didn't use them very often, because it was always dangerous to put that knife in there.

Hughes: I understand that antibiotics influence the very character of the valve, that before antibiotics came into use, calcification of the valve itself tended to be much more severe.

Gerbode: I don't know that antibiotics were really responsible for that. I think antibiotics stopped the course of rheumatic heart disease.

Hughes: Ah, so the problems didn't go on as long.

Gerbode: They didn't go on as long, or never appeared. If you give antibiotics to a patient with a certain type of strep throat, then he won't get rheumatic fever. That's why the incidence is going down.

Hughes: At some state you must have been dealing with patients that had had rheumatic fever before antibiotics came into use.

Gerbode: We didn't have as many children with rheumatic heart disease as is found in many other countries. For example, the Eskimos have quite a bit of rheumatic heart disease in children. In certain other foreign countries, this is true, too. It's very difficult to take care of those patients, because they get a severe form of valvular disease. You can't use a palliative operation very much on them. You have to put a valve in some of them when they're a child, and we don't like to do that. If you put a valve in a child, you have to expect it to last a long, long time, and most valves probably won't last that long. Then, if it's a mechanical valve, one has to give cumadin or a cumadin-like drug to prevent clotting on the valve. With Eskimos and Indians and some other people, it's almost impossible for them to regulate the dosage very well.

Gerbode: Yes.

Hughes: Were you doing a lot of cases of mitral stenosis?

Gerbode: Yes, it was the most frequent operation. But even now there are a lot of operations for mitral and aortic valve disease that are being done in all the units in the country and in the world, because a lot of the patients in whom we had done the palliative operation of mitral valvotomy, are coming back now with more fibrosis or calcification, and they require an open heart operation and a valve. So there are a lot of repeat operations being done, and then, quite a few people are coming in who avoided operations all these many years because their doctors just didn't believe in having them operated upon. So they come in at sixty-five or seventy requiring a valve replacement. We do these cases without much worry any more, because we can manage most of them.

Heart Valve Replacement*

Gerbode: We very early realized in the '50s that we'd have to replace valves. So I had a fellow by the name of Franz Segger start working on making an artificial [aortic] valve. We had models made, and we finally made a valve out of plastic material, which looked and functioned like a human valve. But we didn't know how long it would last. However, I had several very sick patients who were dying from valvular disease, so I used it on several of these people. It functioned perfectly for about a year and a half or two years, and then it fell apart. You can do a certain amount of investigating in animals, but you really have to try it on a human eventually.

Later on in the laboratory we made pig valves, and we sterilized the pig valves with formaldehyde, which we found was not the chemical to use. Later on it was shown that glutaraldehyde was the aldehyde of choice. This was developed by Alain Carpentier in Paris and a number of others. Glutaraldehyde is the kind of aldehyde they use to cure leather so it'll stay soft and pliable. This was adopted by certain people and proven to be quite good. Most of the pig valves, other animal valves and pericardial valves that are made now are sterilized and cured with glutaraldehyde, with various pH regulations and so forth. Virtually thousands of these have been put in patients.

*This section was moved from the session recorded on 9/27/83. See the session recorded on 5/15/84, pp. 362-364, for further discussion of heart valves.

Gerbode: We thought this would be the big thing. It was a strong material, and it came from the same person, so we thought it might be quite good. The early work on this was done by Marian Ionescu. He is a very innovative surgeon in Leeds. He had put in quite a few of them there, and he claimed a very early success. Well, the ones that I put in, about twenty of them, I guess, all finally became calcified or fell apart after a year or so. So that didn't turn out to be so good. They had to be replaced with other valves, which fortunately were coming along at that time.

Then ball valves were developed. The first one was developed by Dwight Harken in Boston. The Edwards Laboratories then worked on another type of ball valve with Albert Starr in Portland, and they produced a Starr-Edwards ball valve which was a silastic valve in a metal cage. This was the valve of choice for several years. Some people still use them.

Hughes: Is that the one that makes a lot of noise?

Gerbode: It clicks, all right.

Hughes: Did you ever use that?

Gerbode: Yes. We put in a lot of them.

Hughes: What is the lifespan of those valves?

Gerbode: Some have been in for a long time. I've got some in for fifteen years. The early silastic ball wore out or fragmented, and it would escape from the little cage and produce a very serious insufficiency, and then you'd have to find this ball valve in the system somewhere and remove it. Usually it was in the aorta. Later, better material was developed which lasted.

Hughes: Are these all aortic valves that you're talking about?

Gerbode: No, mitral valves, too. So anyway, we used that Starr valve, and they finally changed the type of material in the ball so it was harder and wouldn't wear out. At the same time, in Sacramento, another group produced another type of ball valve in a cage, the Smelloff-Cutter valve, and that probably in many respects is the best one.

However, with all the mechanical valves, regardless of which one, the surgeon is obliged to use anticoagulant drugs, because the incidence of thrombi forming on these valves is pretty high without the use of cumadin.

Gerbode: I always thought that tissue valves were going to be the best eventually, and that's why we made some out of the patient's tissue and studied some in the laboratory. Any mechanical device in the circulatory system has certain inherent disadvantages. True, there have been thousands of mechanical valves put in patients, and for the most part, about 75 percent of them have lasting virtue and a very low failure rate; about 75 percent of them survive more than five years with a low incidence of thrombotic complications. But there is always some instance of thrombotic complications, and they all have to take anticoagulation drugs, cumadin.

Hughes: Forever?

Gerbode: Forever. There are a certain number of incidences of bleeding from cumadin. In our own service here, I know of several disastrous hemorrhages from patients taking too much cumadin and not regulating it properly, and getting brain hemorrhage and other big hemorrhages. You have to be very careful.

Hughes: Tissue valves may have to be replaced in a few years?

Gerbode: Well, the tissue valves are almost as good and [of] lasting quality as the artificial valves.

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Gerbode: One basic reason is that the tissue is made inert by being cured by glutaraldehyde, so it's like a little piece of flexible leather, you might say. And this is true whether it's pericardium or any other tissue.

Hughes: Did you use donor valves to any extent?

Gerbode: I only put a few fresh aortic valves in. The ones I put in actually have lasted very well. I have one in an Indian doctor, for example. It's [been] about fifteen years now; he's still doing well.

Hughes: Why did you put so few in?

Gerbode: They're hard to get, and we didn't have a massive supply available, and we had a massive number of patients to be operated upon.

Hughes: Do you think that covers valve surgery?

Gerbode: I haven't talked about all the various people who've worked on this problem. There's Carpentier in Paris at the Broussais Hospital who's made some very good contributions. And Marian Ionescu in Leeds has

Gerbode: was at that time a lieutenant colonel in the army reserve. But to move me around in Korea, I had to have a title a little bigger than that, so I could get priority on airplanes and helicopters. So the surgeon general said, "Don't tell anybody about your being a lieutenant colonel in the reserve; I'm going to make you a temporary brigadier general [laughter] so you can get around." So I was a brigadier general during the Korean War.

Hughes: They withdrew that title after the war?

Gerbode: Yes. There wasn't any necessity to keep it going. Actually, when I came back, I decided that if they thought enough of me to make me a general when they wanted me, that there wasn't much point in my retaining a lieutenant colonel's commission, because all I would do is make myself susceptible to being drafted. Then when I was, I'd be brought in as a lieutenant colonel, whereas if they really wanted me, and I had no title, they'd make me a general. I think my reasoning was valid.

I went to Seoul first. The ritual was to visit all the hospitals and to have ward rounds and give a few lectures. I had a few subjects I talked about, resuscitation and shock and things that were common to the treatment of seriously wounded soldiers. I would give these lectures if they were necessary. But mainly I would go on ward rounds with the young surgeons who were doing most of the work--they were mostly captains--and see how they were handling the wounded, and make suggestions if I thought they were pertinent. I did this in virtually all the army hospitals, and some of the navy hospitals, in Korea.

Hughes: Did you find that people were pretty much up to date?

Gerbode: Yes, they were. Some curious things happened though. I ran into one station hospital where they had a young captain who had been trained in a certain hospital in the Philadelphia [area] where the professor had used fine wire in most operations.

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Gerbode: Well, wire is fine in certain situations, but it's not very good in traumatic wounds, because eventually it has to be taken out. It's irritating. I tried in my ward rounds to try to dissuade him from using it. He really didn't think very much of my advice. I said, "When I go back to the base in Japan, what would you like to have me have them send you?" He said, "Just have them send me some more wire." [laughter]

Gerbode: It's interesting, though, that in both wars it wasn't the regular army that was doing this. The regular army was in all the command positions. But the work was mostly being done by reserve officers. The regular army could never have done the job in World War II.

When I came back from the Korean War, it was very hard to find a regular medical officer who'd been over there. They were all in base hospitals starting training programs in thoracic and cardiovascular and general surgery, and not over there in the front line. There wasn't much future in doing that.

Hughes: Now, are you speaking just about medicine?

Gerbode: Yes, I'm speaking about medicine and surgery.

Hughes: After the Korean War, I know you wrote a number of papers on repair of war injuries to the major blood vessels.

John Howard: Blood Replacement

Gerbode: There were two fellows who really made a lot of contributions to the understanding of the wounded during the Korean War. One was John Howard. He was the one who made the observation that [when there was] a lot of bleeding, you had to give [the patient] more blood back than the blood that was lost. This was a very important observation, because it meant that blood replacement had to be much greater than you might expect. The physiology of why this was true was not understood. It probably still isn't fully understood. But the body usually needs more blood than it has lost. John Howard [made] a lot of physiological observations over there in the field which were very good. He's a very, very nice fellow, lives in Philadelphia.

Hughes: How did he even come to that concept?

Gerbode: He found out that by the time they replaced all the blood they thought the boy had lost, that he still had a low blood pressure, and there was also other evidence.

Hughes: Ah, so they put a little more in.

Gerbode: Well, basically that, but they had methods of studying blood volume, too, which refined the concept. But it was mainly that they found they had to give more blood. Later on they did blood volume observations, which made it more scientific.

Gerbode: No, it just takes that long for the idea to sink in. Now, the great people of this present generation are the ones who recognize those things which are all about us now and start doing them now rather than [waiting] for the next generation.

Hughes: Was the main problem the fear that the sutures wouldn't hold?

Gerbode: Yes, they didn't think they could do it technically.

Hughes: You published a paper on coarctation with Geoffrey Bourne in 1951,* which meant you did the operation in 1951 or 1950, very soon after the first operations for coarctation had been done. Was that a fear of yours? I would think that suturing the aorta would be one of the most scary things to do.

Gerbode: Yes. The difference between that operation and suturing an artery in a wound is that if you suture it in a wound, you'd feel that maybe the wound would get infected and then the arterial suture would break open. That was one of the scary things. But as it happened, there are methods of covering that arterial repair with a flap of tissue, and then also being sure that the tissue that you used was absolutely clean. Also, later we had antibiotics. We had penicillin. We could cover infections a lot better. Those were the main reasons. But I think just the fear of being [unable to suture it together and the fear that it might break open or rupture was something you had to overcome.

Hughes: Was that in the back of your mind when you first started?

Gerbode: I don't know. When I was operating on children for congenital disease, I wasn't really thinking very much about war surgery.

Vein Grafts

Gerbode: Later on, toward the end of the Korean War and in Vietnam, I was still a consultant for the navy, so they had me over at the Oak Knoll Naval Hospital about once a week operating on arterial injuries. I was doing the leg repairs over there. I wrote a paper on it.**

*"Surgical treatment of a case of coarctation of the aorta with unilateral hypertension, associated with ungovernable tempers," British Journal of Surgery, 1951, 38:3840386.

**E.H. Dickson, T.E. Ashley and F. Gerbode, "The definitive treatment of injuries to the major blood vessels incurred in the Korean War," Western Journal of Surgery, 1951, 59:625-634.

Gerbode: Because it was thin and strong and easy to work with. But we found later on that nylon disappeared in the body. It was absorbed. After a year or two these grafts would get soft and become aneurisms or would get weak. So it was later that dacron was used. Dacron was found not to disappear this way. This again was based on experimental surgery. This was all found in animals.

A lot of the best research on cloth grafts was done by Dr. [Michael E.] DeBakey. He quickly saw that he should get the cloth manufacturers interested in it, which he did. They produced some materials, first with rayon and nylon, and then later dacron. They found that rayon and nylon didn't last long enough; they got soft and broke. But dacron lasted indefinitely. So when these [dacron grafts] became available, we used those in clean wounds, and they still do, although at the present time, it's still a bit better statistically to use a vein for a graft in a leg than it is to use a cloth graft.

Hughes: Does anybody know why?

Gerbode: Because it's living tissue, the patient's own tissue.

Hughes: Then why wouldn't that apply elsewhere?

Gerbode: Well, that's where they're using them mostly, in the leg. We use them everywhere--around the heart, in the heart.

Hughes: And calcification isn't a problem?

Gerbode: No, it isn't.

Hughes: So the body obviously is, in a certain sense, recognizing that the homograft is foreign.

Gerbode: Sure, it's a form of rejection.

Hughes: Can you say something about the knowledge in those days of the mechanism of rejection?

Gerbode: We really didn't know about the whole field of rejection until people were able to type blood and tissues. People could type tissues to find out whether they were more or less compatible or completely incompatible. This was necessary because of the early

Gerbode: "I don't think there's anything to this tissue typing. I think the main thing is just to put that heart in." Well, he put about twenty of them in, and they all died. But he's that kind of a fellow.

Hughes: This isn't a Texan now?

Gerbode: Well, I'm not saying.

More recently drugs have been used to control rejection. We can talk about that later sometime perhaps, although that's not much I have anything to do with, because I never got into transplantation.

Hughes: Why?

Gerbode: I stopped operating a few years ago. We did a lot of experiments in cardiac transplantation in this lab in 1975-76-77. The animals would live for a certain length of time, but the hearts would be rejected. And there wasn't anything we knew about in an animal that could keep that [from happening]. So it was kind of a futile thing to me at the time.

Hughes: Yet other people were using the technique on humans, is that not true? Christiaan Barnard?

Gerbode: Yes, they were. Shumway was using it on humans then, too. But the success really got going when they began to use drugs to help prevent the rejection phenomenon and improved tissue typing.

Hughes: So that's what held you back?

Gerbode: Yes, I couldn't see any way of controlling [rejection].

Norman Shumway

Hughes: Could you wind up by saying a little about your association with Shumway?

Gerbode: Norm was trained in Minneapolis. He didn't have a full residency in surgery according to the regular method of training a surgeon. He was exposed to hypothermia as a technique for doing open heart surgery through the work of [John F.] Lewis, who was then on the faculty at the University of Minnesota. Norm came out here looking for a place to work. Dr. [Victor] Richards was the acting chief of

Gerbode: [He] did. It took twenty years for them to catch up with what Carrel was saying. But the same thing is true about vascular suture and arterial repair. As soon as surgeons demonstrated that they could repair arteries and help patients with arteriosclerotic occlusive disease with grafting, then this brought out the production of vascular grafts made out of fabrics--the biggest industry of this kind in the whole world. There isn't any country that can touch us in this industry of making grafts out of prosthetic material.

Consultant Positions##

[Interview 6: August 24, 1983]

Oak Knoll Naval Hospital, Oakland

Gerbode: After the war, both the army and the navy recruited some of the people who had been in the war to be consultants. The first government group to ask me to become a consultant was the United States [Oak Knoll] Naval Hospital in Oakland. I guess they invited me over because I'd already established myself to a certain extent in vascular work and was doing the beginnings of heart surgery. They had a fair number of patients there who were service people who had vascular and heart problems. I would go over once a week and lecture and occasionally would do an operation. In the beginning [I would] operate perhaps once a week on the same day as doing a lecture. I found this very rewarding. I liked going over there, because they were very fine people, and they approached everything very much on an academic level. The pay was very small, fifty dollars a day.

Letterman General Hospital, San Francisco

Gerbode: I felt I was continuing to do my duty toward the armed forces.

Then a year later, I guess some of the army people realized that having been in the army for three and a half years, it was rather strange that I was being a consultant for the navy. So the army invited me to be a consultant at Letterman. This was very good, because I could easily get there, and the people who were in charge

Hughes: I was wondering what the differences, if any, were between Letterman and the naval hospital?

Gerbode: They were very much the same. In fact, for a long time there was a big discussion about whether they should build a new hospital in Oakland and a new hospital at Letterman. The programs were so similar that I was one who advocated building one armed services hospital instead of building two. My friend Frank Berry, who was then undersecretary of health in Washington, was also a strong advocate of building one hospital. But one cannot get these services together. The one place where they got them together was in Honolulu, where they built one hospital for the army and the navy and the marine corps. But it went down as a very strong, big pill, which nobody really liked to swallow.

Hughes: Too much territoriality.

Gerbode: Yes.

Hughes: Was it unusual for military hospitals to have such an academic interest?

Gerbode: It was unusual before the war, but after the war the veterans' hospitals and the [military] service hospitals realized they'd have to have training programs to train specialists in general surgery, general medicine, and all the other specialities. In order to do that, they had to have some sort of an academic program going, so they had to utilize the nearby medical schools.

The veterans' hospitals reorganized their entire approach by putting the hospitals in charge of medical schools. The dean's committee of the medical school in that area really ran the professional aspects of the veterans' hospitals and improved the care of the veterans enormously as a consequence. This is still in existence. The professional part of the veterans' hospital here in San Francisco is really run by the dean of the University of California. He puts men over there as consultants, and usually they're academic people. He actually puts residents through there from his training program at the county hospital [San Francisco General] and at U.C. So it's been very good.

Hughes: After the war, you wrote a number of papers on vascular surgery [where] the injuries were the result of the war. Were those cases done at one of those hospitals?

V PRESBYTERIAN MEDICAL CENTER, THE HEART RESEARCH INSTITUTE,
AND COMPUTERIZED PATIENT MONITORING

The Stanford Medical School's Move to Palo Alto, 1959

Debate Over the Move

Hughes: Do you want to move on to the move to Stanford?

Gerbode: Yes. As soon as I came up [to San Francisco] from Palo Alto and medical school, which was 1932, I began to feel that there were people around who wanted to move that school to Palo Alto. The faculty in San Francisco mainly wanted to rebuild the hospital and the medical school up here. They liked San Francisco. They had a very good teaching program at the county hospital, half of which they ran. They felt that it was better for a medical student to grow up in a relatively big city, and see all the various aspects of medicine than to be in a small town which is not representing a cross-section of what the world is about.

However, as time went on, we had a president [of Stanford] by the name of Don Tressider, who was a member of a family that had been with Yosemite for a long time, and he was very interested in rebuilding the school in San Francisco. He was a very good friend of the dean, Yank [Loren R.] Chandler. As long as Tressider was president of the university, the thought of rebuilding the school was predominant. But unfortunately he had a coronary and died on the East Coast.

Then Wally Sterling was made president. Wally was very much influenced by some of the people in Palo Alto, particularly some of those who were connected with the Palo Alto Clinic. Although he is a very fine man, and I've liked him, and I think was a great

Gerbode: The other reason I didn't want to go was that I felt that in building a new medical school at Stanford, there was going to be an awful lot of administrative planning, a lot of committee work. This would mean that if I had gone, I would be in committees all the time and not trying to develop heart surgery. I knew the history of other medical schools that had moved. It usually took one whole generation before all the problems were sorted out.* So I had to decide whether or not I wanted to become the professor or develop heart surgery. I decided that I wanted to stay in San Francisco, and my wife didn't want to go to Palo Alto. So that was the decision.

Attempts to Retain a Connection With Stanford

Gerbode: We tried desperately to get Stanford to keep a connection with us up here, retain an academic program as a post graduate medical school, or something. But Dr. Sterling wanted to cut it off completely. He wanted a complete amputation.

I can remember the discussions with some of the board members of the university, notably Dave Packard, who was chairman of the board of trustees. He obviously was told, "Don't let those San Francisco people have anything, because we need all the patients. We need everything we can get down here to get this school going." This was a different point of view than what they were saying. They were saying that there were plenty of patients in the area around San Jose and Palo Alto, and they had big charts to show this. They also had charts showing the population growth, so they needn't have feared competition up here at all. However, at meetings, which were being held mainly at the Fireman's Fund Insurance Company, Dave Packard's theme song was to bury the old medical school. They even wanted to close the outpatient clinics, thinking that if we retained an outpatient clinic, that this would take patients away from Palo Alto. Obviously, most of the patients didn't come from Palo Alto. A great many lower income residents came from nearby. This was, again, a foolish position to take. They said [they were] going to lose money to keep those outpatient clinics going. This was then called San Francisco Stanford Hospital. So then I said to some of my colleagues, "Suppose we get a group of people together and say we will underwrite the expense of keeping the outpatient clinics going?" So we got forty doctors to each pledge a thousand dollars if necessary to keep the outpatient clinics open. With this threat,

*The two foregoing sentences were added from the session recorded on 8/16/83.

Gerbode: They weren't willing to do anything.

Hughes: Were they just hoping that the place would fold up?

Gerbode: Oh, yes. They wanted it to fold up. In fact, a lot of the doctors who had been sending patients into the old Stanford Hospital thought it was folded up. But anyway, the thing that really saved it was the fact that heart surgery was really kind of exploding, and we began to fill up the place with heart patients, because we were the only one on the West Coast doing open heart surgery. All the old channels opened up, and they sent all the patients to us. This wasn't only from the Bay Area, but also from Alaska and Oregon and Nevada.

Hughes: The whole West.

Gerbode: The whole West, really. Some of the patients even came from Los Angeles. Of course, this also made Stanford want us to move to Palo Alto even more. Anyway, the lady that runs the cashier's desk [at Presbyterian Hospital], who's still over there as a matter of fact, said, "Please, Dr. Gerbode, don't leave town." [laughter] The heart surgery and all the cardiology connected with it was really keeping the place alive.

Staff Decisions about the Move

Hughes: What about the staff, now?

Gerbode: A handful of the senior, high-level faculty moved to Palo Alto.

Hughes: They were attracted by good positions there?

Gerbode: Good positions. Some of them were promoted. They were made professors or associate professors, and they automatically got tenure then, which appealed to them a good deal.

Hughes: It would have been possible here, too.

Gerbode: No, we had no way of giving them tenure up here. The bulk of the clinical faculty who was not full-time stayed here in San Francisco, because they had practices here and didn't want to move. Some of the full-time faculty decided to stay as well.

Hughes: Who was there at that time in cardiovascular surgery?

Gerbode: I had doubts, but I felt that, knowing the history of the place-- You see, it was the first medical school in the West, and it was the best hospital in the West for many, many years, even before Stanford took it over. It had a beautiful location in San Francisco. The property was ideal for a hospital and for a teaching hospital, because they were right next to the people on one side that could pay for services, and on the other side, the people who needed to have services and couldn't pay for them. [Elias Samuel] Cooper and [Levi Cooper] Lane, who started this whole thing, realized this. So they had both the outpatient services and the paying beds filled. An ideal situation.

But in any event, I really believe that heart surgery saved the place. That plus the fact that we really kept telling people, "We aren't dead. The place is still open, and we're going to go somewhere."

The Institutes of Medical Sciences*

Gerbode: Then the question came up, what to do about research? With Stanford pulling out and not being willing to sponsor anything in research or teaching, I decided that the hospital really couldn't have a very good research program at that time, because the departmental chiefs were not particularly interested in research, and everybody was thinking more than anything else about how to save the hospital, which was justified.

So I decided that I'd get together with the people who were going to stay who were former full-time teachers in the medical school and put together some other kind of organization to keep the research going. At that time, we had about two hundred and fifty thousand dollars of grants with NIH and the Cancer Society and a couple of other small organizations, like the Heart Association. I asked them if we [started] another [research] organization in San Francisco, would they transfer the money to this organization. I also went to Stanford and asked, since the money wasn't going to go to Palo Alto, would they mind letting us move it into another organization. They all agreed.

*See the sessions recorded on 5/15/84, pp. 380-387.

- Gerbode: No academic connection at all. Some people had academic appointments with the University of California, and some of them retained clinical appointments with Stanford. I was made a clinical professor at Stanford and a clinical professor at U.C., which meant that I would teach part-time or be called upon to do teaching, research, or administration, when necessary.
- Hughes: I know that the clinical appointment at Stanford had been long-standing, but do you remember when the appointment at U.C. occurred?
- Gerbode: When I decided not to move to Palo Alto--at that time I was an associate professor--the dean, who was Windsor Cutting, promoted me to clinical professor. This was about the same time that U.C. made me a clinical professor as well.*
- Hughes: Was there any particular tie-in with the move?
- Gerbode: I guess U.C. wanted me to be [part of the U.C. program]. I was not the only one who was brought into the U.C. program one way or the other. We had a pretty good thing going [cardiovascular surgery], better than theirs, and so they wanted to have us associated with them.

Since the heart surgery was going so well, and since the people in Washington were really quite sentimentally connected with some of the people who didn't want to go down there, they were anxious to help us. There were people in Washington who felt that it was a mistake to move the school back to Palo Alto, that it would have been better to leave it in San Francisco. They cited Northwestern, New York University, Harvard and Hopkins as examples of medical schools which are great and which had stayed in the bigger city. So they were rather favorably inclined toward helping us one way or the other. We had such a vigorous program going in cardiac surgery. We were writing papers, too, and developing research to back up the programs.

The NIH Program Project Grant

- Gerbode: So I applied to NIH for a huge grant, called a program project grant. The administrator in Washington of the Heart Research Institute of NIH came out, and we spent a couple of days talking about it. I

*According to Dr. Gerbode's curriculum vitae, he became clinical professor of surgery at UCSF in 1964. The appointment ended in 1976.

The Heart Research Institute Fellowship Program in
Cardiovascular Surgery*

Gerbode: No, this was direct contribution from my practice. We had some money for training from Washington, and I got Mrs. Ed Heller of San Francisco to give me another training fellowship for about three years. So I began to bring fellows in to train in cardiac surgery. I needed them anyway, because we didn't have any residents. The residency program [had] moved to Palo Alto. We had a few interns, but that's all.

Hughes: How did you select the fellows?

Gerbode: A lot of people wanted to come and work with us, because there was a lot of heart surgery [and] research going on, and it was one of the most active places in the country, both in the laboratory and clinically. So I had applicants from a lot of places, and I decided that I would choose the best men every year regardless of where they came from. This was quite different from the attitude of many other places, which felt obliged to take only Americans in their training programs. But I felt that cardiac surgery was a world enterprise, and that all countries needed to do it, and they needed young men to push it forward. So I took people from any country. If the candidate was better than anybody else I had locally, I would take him. As a consequence, among the very first were the English. I eventually had twelve men from the U.K. whom I had trained.

Hughes: Each of whom stayed for a year?

Gerbode: One to two years, sometimes even three. I gave them a lot to do. They didn't really do all of heart surgery when they were in training, but they did parts of every operation. Whatever I felt they could safely do, I let them do. I thoroughly enjoyed this part of my career. I just loved working with these young men, because they were all bright and very able, and they had a place to go. That was one other stipulation I made, that I wouldn't take them unless their institution would take them back in the field [of cardiovascular surgery]. So that meant that a professor would send his brightest man over, or the man he was going to designate to carry on with the work when he came home.

*Some of the fellows participating in the program are discussed on pp. 400-407.

Gerbode: track of them pretty well--sixty-three currently now are either chiefs of service or associate chiefs of service or professors of surgery. There are only two or three that went into pure private practice. And they're scattered all over the world.

Hughes: Did the fellows not only operate, but also do research as well?

Gerbode: It wasn't a requirement that they do research, but everyone had a research program, either clinical or experimental. Most of them did experimental surgery.

Hughes: I imagine that in most cases that was unusual in their countries of origin.

Gerbode: Yes. Many of them had never done any experimental surgery at all. When they went back, they helped their institutions set up experimental laboratories, and that pushed their programs forward quite a good deal.

The great thing about having these fellows all over the world is wherever I go now, there's somebody there who's been in the institute. It's like being a member of the family. For example, in India there are four outstanding heart surgeons who may meet you at the airport. There are four in Australia, all doing very well. Twelve in the U.K. I think three of them in Germany. Two of them in Norway. One in Sweden. He's going to be made professor of surgery in one of the biggest and oldest medical schools this year. Halsted, who was the so-called father of American surgery, the professor of surgery at Hopkins, was quoted to have said that if a professor or a chief trains six men in his lifetime, he will have accomplished what he should have.

Hughes: Well, you did much more than that!

Gerbode: Anyway, it was really great fun, and also my wife enjoyed having people from outside of the United States in my home. We'd have little after-dinner discussions once in a while at home. My daughter [Maryanna], who was a little girl then, used to like it because we always had donuts, and she loved to come down during the party and eat a donut.

Hughes: In most cases, did they go home to find that their chiefs were receptive to the changes....

Gerbode: In most cases they were. But they found that it was very difficult to get things done in many places.

The Presbyterian Church

Gerbode: Yes, I think probably. [We] got a new board of trustees when Stanford finally decided to transfer the property to the Presbyterian Church. The presbytery of San Francisco said they'd be willing to take on the hospital. Traditionally in the Presbyterian Church they have good hospitals in a lot of parts of the country that are very successful. There's one in New York. They'd just finished another one in southern California at that time. It was very good for their church, I guess, to be associated with a good hospital. They changed the name from San Francisco Stanford Hospital to Presbyterian Hospital.

Hughes: What does that mean, when the church takes over?

Gerbode: Well, it didn't mean as much as people thought. They thought that the church then would pour money into making a new hospital. But the church poured very little money in. As somebody said, the Presbyterians are mainly Scotch. They're very good at collecting money, but not very good at giving it away. [laughter] There were various committees about the old hospital, about what we could do to rebuild it. They had several planning groups come in and do things. But it was obvious you needed to get another group of people with some money or influence to make the thing go.

St. Joseph's Hospital

Gerbode: So at that time, the nuns at St. Joseph's Hospital here in San Francisco said that they looked favorably upon joining with us. They had some money to put into the program. This was fine, in the beginning, but then as time went on, the trustees realized that they weren't going to put in very much. They wanted to dominate the board of trustees of the newly formed hospital group. All they really were basically interested in was to get this hospital into their domain.

Hughes: Did they have access to a hospital?

Gerbode: Yes, they had St. Joseph's Hospital, and they were members of a national group in the Catholic Church. It was apparent that the national group was not going to put up any money either. Although the local people thought they would, they didn't.

The Bank of America##

Gerbode: The day before the meeting of the consortium was supposed to occur, Ed had a call from Rudy Petersen, the president of the Bank of America. The president of the Bank of America said, "Ed, don't meet the consortium. We'll take the whole thing." I've forgotten how much they loaned us, something like eighteen million dollars or so, a big sum of money.

Hughes: Why do you suppose he made that decision?

Gerbode: He knew that there was connected with the old hospital a tremendous number of people, old friends, old patients, faculty, new patients. He knew that if the Bank of America was advertised as being the backer of this enterprise, that they'd put their accounts in the Bank of America--which is true, a lot of them did--and that the hospital would put their accounts with the Bank of America. It was a good deal from their point of view, as it turned out, because now, even after all these years, we're right up to snuff on paying off our principal and interest, and we have money in the bank. So that was a wise decision.

Designing the New Presbyterian Hospital*

Gerbode: We got the hospital built. There were a lot of design characteristics of the hospital which were influenced by the fact that they thought that eventually it might have a bigger role than just a community hospital. So they allowed for space for seminars and small groups to meet. This has proven to be very, very beneficial for conferences and things like that.

The only thing they didn't build into the hospital was a big conference hall. But they finally converted something which was originally designated for administration into a meeting [hall], so they have a conference center now.

Hughes: Did you have a role in the design?

Gerbode: Yes, I did. Luckily, I can read plans. At the same time as we were designing this hospital, they were designing Stanford Hospital in Palo Alto. We were supposed to make suggestions about

*See the session recorded on 5/22/84, pp. 398-399, for further discussion on the new Presbyterian Hospital.

Computerized Patient Monitoring*

IBM

Gerbode: The characteristics of how it was designed were influenced to a certain extent by the research we'd been doing with IBM Corporation. We began to use computers among the very first in the country. IBM wanted to get into the computer business, so [Thomas] Watson, [president of IBM], himself, came out with a small committee and met in the library here on this floor to discuss what might be done in monitoring with a computer. We began to show him some of the things we'd done. Jack Osborn had gotten together some very nice illustrations of what he had done with a computer which somebody had given us.

Finally Mr. Watson turned to me and said, "Dr. Gerbode, you've got this wrong. We didn't come out here to have you sell us your program. We came out here to sell you our program." [laughter] I said, "That's fine. When do we go to work?" They agreed that they would put their main research emphasis in developing computerized monitoring in our hospital.

Hughes: What was the date?

Gerbode: This was '60 or '61. We signed a contract with IBM. They sent out a team of Ph.D.'s to work with us full-time. We set up a computer room on the top floor of this research building. At that time everything was on tape with big disks, so this huge computer machinery went in up there, at the expense of IBM, with their full-time people running it and connecting it with the old hospital intensive care unit. John Osborn worked out a program. On our big research grant, we were able to put two or three people into this computerized monitoring effort as full-time research people. So the joint committee worked out all the details of what was necessary. The computers got smaller and smaller. We finally got rid of those big machines. IBM worked with us for about ten years. They spent over a million dollars developing the programs which were largely directed by John Osborn.

Hughes: Meanwhile computerized monitoring of patients was spreading to other centers?

*See pp. 198-200 and 437-438, for further discussion of computerized monitoring.

Gerbode: At that time, a man by the name of [Newton] Bissinger was in the hospital and liked very much how he was treated for his heart attack. He asked, "How can I help you fellows?" They said, "Why don't you buy us a new angiography machine." So he did. So we got the latest model then, and they had taken the old model to Palo Alto. [laughter] (But a few years later they got the new model down there, too.)

Hughes: What about other equipment?

Gerbode: The other equipment was very expensive, and we constantly had to raise money to pay for our share of the development costs of all that equipment in the intensive care unit.

Hughes: How'd you go about raising money?

Gerbode: One big thing I did, I applied to the Bothin Fund here in San Francisco, which is run by the descendants of the Bothin family--Princess Genie de San Faustino and now her son, Lymon Casey, run it--for a large grant to support the development of the intensive care unit. They gave us a lot of money to help complete the program.

Hughes: Do you think most of this was thanks to the growing reputation in cardiac surgery?

Gerbode: Oh, yes. It was very exciting. The other thing was building a new hospital; we could design everything so they could put the monitoring equipment in properly.

One thing I insisted on was not to have the electronics connected with monitoring or the display screens in view of the patients. They were in back of the patient.

We designed it so that any repairs to the monitoring equipment would be done in a room behind the room where the patient was. So there was a wall; in front of the wall were all the displays; in back of the wall was another room where the repair people could work on the equipment as it broke down, or replace it.

Hughes: In general, had the instrument companies jumped on the bandwagon very quickly?

Research Programs at the Heart Research Institute

Hughes: How were you dividing up your research and your surgery? Did you have certain days when you were in the dog lab?

Gerbode: In the beginning, I was in the dog lab most of the time. But then as we worked out the programs and got busier in the operating room, we shifted some programs to those related to the clinical work. In other words, we'd study patients.

Postoperative Problems after Open Heart Surgery*

Gerbode: One of the principal problems in those days was to find out why people were sick after open heart surgery. Some of them would be mentally confused for a while. Some of them would have fevers which were unexplained. So a lot of our research at that time was to find out why the patient didn't wake up as quickly as after a normal operation. It was something to do with the machines. So we had several big research programs going, both in the dog lab, which was then here in this new [medical research] building, and in the operating room.

One of the first things we found with our own oxygenator, which Bram had designed, was that it had to be absolutely meticulously cleaned. Even the tiniest bit of old blood in there would cause a fever and make the patient sick afterwards. It wouldn't kill him, but it would make him sick and have a fever. So we finally realized we had to clean that machine with concentrated acid to get everything out of it.

Hughes: Did that mean taking the machine completely apart?

Gerbode: Completely apart, and it had to be taken over to Cutter Laboratories. We were constantly sending them over by car and bringing them back. We ended up by having twelve of them in rotation. It was expensive and cumbersome. We found out a lot of things about what happened to blood in machines, and wrote quite a few papers on it.

*See the session recorded on 5/22/84, pp. 370-371.

Gerbode: oxygenator was not very good, was not very easy on blood, either. It was also very difficult to clean, for the same reason that I mentioned with our disk oxygenator. You had to clean it so meticulously that it was a big chore. In Gibbon's own unit, very soon after he had retired from the chairmanship of the department, they switched to a bubble type of oxygenator, and the Mayo Clinic did the same.

Hughes: Is one of the advantages of the membrane oxygenator that you're developing that the membrane is disposable?

Platelets

Gerbode: That's one thing. But the other is that it's less traumatic to blood. If you study platelets, for example--we did some of the original work on platelets here--you find that whatever machine you use, in the first few minutes of any perfusion, the platelet count goes way down. The platelets simply disappear from the blood.

So we tried to find out what happened to the platelets. David Hill found out in our laboratory, that they went into the liver temporarily. They went into hiding, so to speak. Then slowly, after the perfusion was over, they'd come back into the circulation. With a bubble oxygenator, they'd come back much more slowly and not completely. With a membrane oxygenator, they'd come back slowly, but they came back almost completely and faster which meant that they weren't made as sick while they were hiding in the liver, or on their way to or from the liver. This was rather a basic discovery.

Hughes: That meant no clotting then.

Gerbode: Well, the fact that the platelets disappeared meant that the patients bled more postoperatively. We frequently had to give them platelet transfusions.

Hughes: Were the platelet transfusions a direct outgrowth of the discovery that platelets were going into seclusion?

Gerbode: No. We discovered that we had to give them platelet transfusions because the platelet counts were so low. We didn't know at that time where the platelets had gone or what had happened, but we knew that they weren't in the circulation. So we had to give them platelets to build up the quantity so that the blood would clot. The [Irwin Memorial] Blood Bank had to develop methods of getting platelets out of bank blood, so we could give platelet transfusions. They developed that quite successfully.

Gerbode: At times it has been difficult to find enough research to keep that animal laboratory funded properly, so they've had debates about whether it should be a core facility. But presently this has been worked out. For a long time we had a tremendous amount of work in the animal laboratory testing devices, such as heart-lung machines and membrane oxygenators, and so forth.

Politically, there really weren't very many problems, except relative to space. This had to do with people wanting to have more laboratories and more office space for their research workers and looking at others who perhaps weren't utilizing their space as well as the others thought they should be. But we established some committees to settle these matters, and finally formulae were worked out so that there was very little hard feeling about it.

Gradually, from a single woman running the office and taking care of the bookkeeping, we have added more and more people until now we have a rather huge staff of administrative people. We worry about it being greater than it should be, but bureaucracy always grows. You can't stop it very easily. So now at this moment we have a lay president, an executive vice president, personnel managers, chief accountants, bookkeepers, and all sorts of other people keeping track of the approximately three million dollars of expendable funds every year.

Hughes: Is there a medical president as well?

Gerbode: No, there isn't. We have had medical presidents in the past. In fact, I was president for about three years. We had various other doctors who were president, but they resigned for better positions.

One of the best ones we had was Dr. James Hundley, who came to us from Washington. We liked him very much and he was very effective. He got to be so good and well known that the American Heart Association offered him quite a bit more money than we could pay him and some other prerogatives, so he left and went to New York to run the American Heart Association. But within six months he was disillusioned not only about the job but also about how he had to live in New York, and a short time later resigned, moved back to California, where his daughter was living in Marin County. A month or so later he was killed by a truck in a highway accident, which was very sad. We would have been very happy to take him back again, but unfortunately the accident prevented this.

Gerbode: we will establish an institute because a certain group has x numbers of dollars. I'd rather have them have fewer dollars but bigger ideas.

Hughes: Aren't the strikes against you in a sense if the board is composed of people without predominantly scientific or medical interests?

Gerbode: It is difficult because they don't really understand research. It's very hard to find lay people who really understand voluntary research efforts. This is generally true throughout the world except in some places where people have made fortunes out of their research and development. Then they understand the beginnings of an idea and how it develops into something worthwhile and profitable.

We are one of the ten largest private research organizations in the country, and we are known. We belong to all the voluntary nonprofit research organizations in the country. So it is an effective and strong institution. It's the biggest [private research institute] in San Francisco. There isn't anything else here that could match it except for the University of California. It has by far a much bigger budget with many more researchers than when the [Stanford] medical school was here.

Hughes: What is the division of labor between the board of trustees and the science council?

Gerbode: The science council is composed of scientists. Each institute can appoint two members of the science council. They discuss things like compensation and the value of the science. They determine who gets money which has been awarded on a broad basis to the institute as a whole. For example, NIH gives us a grant every year based on how much money we have raised ourselves. This amounts to anywhere from eighty to over a hundred thousand dollars a year. It's called a basic research support grant. The science council reviews applications from the scientists in MRI applying for money in this BRSG fund. Everybody accepts its decision pretty well.

Hughes: NIH doesn't place any stipulations about how the money will be spent?

Gerbode: No. The BRSG fund is to be used to stimulate new research, to encourage young people to get into research, to support research which is ongoing but is periodically short of funding in various categories. It's really quite a great thing to have this fund. It's certainly to the credit of NIH that they recognized the necessity for it.

Gerbode: We have some people who have gotten patents on various devices, and we have policies established for that. The policies usually either give all the royalty money to research programs or split it between MRI and the individual.

Hughes: So that would be a real incentive for an investigator to come here.

Gerbode: Oh yes.

Hughes: I'm thinking of the problems that have arisen at U.C. in connection with recombinant DNA and the fact that the university holds the patents.

Gerbode: Yes. Well, we let the individual hold patents mostly. We have an agreement with the individual, if he's developed the new idea or the instrument in MRI, that we will share in any rewards that come out of it. I must say, we haven't made much money from this so far. But a great deal of what you do in research is built on hope.

Administrative Policy

Gerbode: Another thing I should say about the total research effort is that we have brought people here to give them an opportunity to do research without interfering with them. We don't even tell them what to do. We'll help them do their research and answer questions and make constructive suggestions if they're requested. But we don't look down anybody's neck at all. We want to create an atmosphere, as I mentioned before, of freedom of thought and freedom of activity.

This is quite different from the usual university research structure, where everything is under a departmental head, and depending upon what he likes or dislikes, the research can either go forward or stop. This has to do with space and a lot of other political factors in a university structure. We wanted to avoid all that.

Hughes: So the director of an institute has a much looser hold on his membership than the head of an academic department?

Gerbode: If you want to take me as an example of a director, I've brought people in who have independent thoughts about what they wanted to do in their research, and give them space, helped them a little bit

Gerbode: However, there are a great many other projects that are valid and worthy. So they look at the people and the research environment. They look at the track record of those involved, the promise of the individuals, and the age of the individuals. They're more inclined to favor a grant to a younger person than to an older person.

Hughes: Is the feeling there to give the younger person a chance?

Gerbode: Part of it, because in the country as a whole we want to get young people interested in research, so we favor giving them some money to get them started. Also, there is generally a feeling that after forty or forty-five, the prospect of any original research coming out of a worker is slimmer and slimmer as time goes on. Unfortunately for this generalization, not infrequently it doesn't apply at all. Some of the best projects come from older men. But in general, the committees favor younger people.

Hughes: Does NIH give you criteria by which to judge the applications?

Gerbode: No, they don't. The peer group establishes its own criteria. It evaluates the program suggested by the application and either accepts it with a priority or rejects it.

Hughes: Is it pretty much on the scientific merits?

Gerbode: It's not political. Although over the years, it was obvious to me that if one of the Ivy League medical schools applied for something, it was much more apt to get it than some little university in the Midwest. But time, I think, has changed that a bit. I think people began to realize that you could do good research in a lot of different places in the United States other than New England. Some of the very best things are not done in New England or the East Coast.

Hughes: Do you think that the system works pretty well?

Gerbode: I think the system is excellent. The American Heart Association has similar committees which examine these applications. In fact, the local heart association does, too. They have a research committee which looks at all the applications and votes on them.

Hughes: Would that mean taking on new staff?

Gerbode: No, we'd use our own staff. Right now we're talking more about having postdoctoral fellowships, which is a form of teaching. We would take on people as fellows who have gotten their Ph.D.'s and want to get started in a good research program and get them going until they can stand on their own feet. We're going to do more of that in the future.

We have also always had a summer student program. During one summer program Dr. Osborn and I had twelve students working here in cardiovascular surgery. It was like running a boy scout camp. [laughter] I must confess, it was just too much.

Hughes: What level were these students?

Gerbode: They were mostly university students, premed or in biological sciences or engineering. It is interesting to note that many of them have later gone to medical school and have done very well.

More recently we've lowered the number of summer students to three or sometimes four. These are sponsored by the local Heart Association or by a local woman's group, ARCS, who sponsor summer students' stipends. I must say, they are very generous with their stipends, too.

In the hospital we take a certain number of externs in various departments for part of a year, because most medical schools in the world now have some free time for the students to go away somewhere. The West has always looked good to people everywhere, so we always have a lot of people wanting to come to California. We can always take a certain number. Unfortunately, they can't do anything more than observe and take histories. They can't treat or write orders because of being foreign students.

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Hughes: What if they're American students?

Gerbode: American students can do that, and we have externs who can write orders and help in the operating room.

Hughes: What body would choose those students?

Gerbode: Those students are chosen by the department of education of the hospital. They have a director; he or she runs all the interns and residents and would run the externs or fellows, too.

Hughes: How closely are the institutes and the hospital affiliated?

- Gerbode: Nothing's automatic. Currently we're trying to get hospital research increased, and we currently have a joint research committee of trustees and research people in the hospital and MRI. They meet quarterly. Currently the general policy decision is that all research for both should be administered through MRI. This is a bit difficult sometimes because people leave money to the hospital for research, and the hospital doesn't like to turn that money over to somebody else. They want to try to run it one way or the other. That's perfectly natural.
- Hughes: I would think also that the hospital would resist having MRI have control over the decision.
- Gerbode: You see, the problem is that there aren't many people in the hospital who can make [scientific] decisions [about research]. So we [in MRI] have a big advantage there.
- Hughes: I would think that the same would apply to the board of trustees.
- Gerbode: It does apply to the board of trustees, absolutely. For example, one of the most important people on the board of trustees of the hospital once said at a board meeting, "I think all of the research we do should be directed toward improving patient care in the hospital or problems in our patients." In other words, you find out that a certain group of patients gets warts when they come to the hospital; therefore the research program should be designed to eliminate this strange phenomenon. [laughter] That's kind of an exaggeration. He's trying to liken the research in a hospital to that in IBM or Hewlett-Packard or some big corporation, or even the stock market. These big people engaged in the stock market all have research organizations. It's all designed to help them make a decision relative to investing their money, or somebody's money. But so much of research cannot be pointed to a specific problem of the day.
- Hughes: I think that's very difficult for a layman to grasp.
- Gerbode: Even doctors have difficulty understanding it. I would say in general, however, that our research, as I mentioned earlier, was designed to try to overcome some of the difficulties in applying treatments which we were ready to apply but couldn't apply until we understood how to apply them better. This was certainly true of open heart surgery. That's why we spent so much money on developing techniques and instrumentation and studying the physiology of what happens when you use [heart-lung] machines.

Hughes: That of course is feeding into some of the problems you see between the hospital and the institute.

Gerbode: Oh yes. There's a constant deep feeling of the Ph.D.s that they are underpaid and they are the martyrs of the system, because they don't make nearly as much money, and they feel as though they're making all the big contributions toward the improvement of medicine. But I've told them whenever this comes up, "If you wanted to be a doctor, you should have gotten an M.D. degree." It's easier to get an M.D. degree frequently than it is to get a Ph.D.

One fellow who worked with us had a Ph.D., and he kept saying this all the time. I said, "Go get an M.D. degree." So he did, and he continued doing research at the same time he was getting his M.D. degree. But I must say that his research suffered and was really questionable. But as a consequence of this change in direction, he is now a faculty member in a clinical department in New England. I presume he's still doing some research back there in the clinical department. At least he's making more money.

Hughes: Going back to when the institutes were first being formed, what would you say then was the reason for adding a new institute? Was it a matter of money?

Founding New Institutes

Gerbode: Yes. It was a matter of money--well, not so much money, but a group of people who could be funded. In other words, you had to be sure that a person to whom you gave a laboratory could run it financially.

We didn't have any set figures, though. We simply looked at the group and if they had a pretty good track record and had the promise of going somewhere, we'd give them space and help them.

Hughes: Was there any tie-in with current scientific and medical problems?

Gerbode: In other words, have we decided that we should go into certain fields because we feel they're important?

Hughes: Yes.

Gerbode: Informal arrangement, sure. They are very fair about it. So there's never been much problem about that.

Hughes: The dog lab is used by--?

Gerbode: The dog lab is now used by a number of people, but not nearly as much as it was a few years ago. However, they do dog and cow work two or three times a week. The instruments and the respirators are shared. There's a basic charge for using the animal laboratory; for each experiment there is a basic charge. That goes into a fund in central administration which then pays for replacement of instruments and materials, drugs and things like that.

Hughes: Why has use fallen off?

Gerbode: I guess the main reason is that some of the people who were using it a lot are so busy in practice now that they don't use it as much because they're busy taking care of sick people.

Hughes: Do you wish to say anything more about the institutes?

Accomplishments and Reputation

Gerbode: I think my premise that a hospital complex with a research institute would be a much better place to be working and a much better place for sick people has been accomplished. I think the fact that we have a very strong medical research institute here has increased the value and prestige of the [Pacific Medical Center] enormously and has increased the quality of care of patients a great deal. I think quite a few people envy us.

Hughes: What would you say about the reputation of the institutes on a national scale?

Gerbode: Their reputation is very good. NIH and their committees never hesitate to consider an application from MRI. It's considered on an equal basis with universities.

Hughes: Has that always been the case?

Gerbode: It was pretty much, because when we started we had reputations back there, and I was on several committees myself.

Gerbode: I'm sure that part of the reason why Stanford is going into kidney transplants is because they already have all the other elements of what goes into transplantation. All they need is to have somebody to do the work.

Hughes: Is the motivation for setting up one of these programs the idea that you're going to help patients with severe problems, or is it a money-maker? Or both?

Gerbode: I think a great deal of it really is the objective of having a complete center. People want to be responsible for starting something and running it. It does have some financial aspects, of course, because people have to make a living. If they make a little extra money and it's doing what they want to do, then more power to them. The only feeling I have about that is that if a person does get into a field where the money comes in pretty liberally, I feel the person should put something back into the organization.

Hughes: That doesn't usually happen, does it?

Gerbode: No, unfortunately it doesn't happen. But I can say that, as far as I was concerned, over the years I've put as much back into HRI as I took home. Otherwise it wouldn't have gone.

Hughes: You said earlier that one reason that you didn't become involved with heart transplantation was the problem of rejection. Do you really think that that has been handled?

Gerbode: Oh, it's been handled pretty well now, because they have drugs that can control it. They have ways of studying the heart to see whether a rejection is imminent or not. Then they temporarily fire up the drugs.

I think [transplantation] is accepted, and I think it's going to increase in numbers and quality. I think pancreas transplantation is going to be accepted very widely pretty soon, and liver transplantations more than they are now.*

Hughes: Neither of those is done here?

Gerbode: No.

*There is further discussion of transplantation on pp. 468-469 in the session recorded on 5/30/84.

Gerbode: Yes. Now we're getting into things which are not essentially related to research.

Hughes: That's true. But they are things which must be dealt with.

Gerbode: Yes. Usually we've dealt with those things by talking to the family, the husband or the wife. If you can't get through to the patient, spell out the facts to the husband, wife or family in some form, and record in the chart the fact that you have done all this, so that it is well known that you have covered the risks and the essential aspects of what you intend to do. It isn't a complete protection against being sued, but it certainly helps a great deal.

Hughes: What about the moment when you decide that research in the dog lab or wherever has progressed far enough and it is now time to do the procedure on a human? What goes into making that decision?

Gerbode: If you've done it repeatedly in the lab, you know how to do it technically, and you've seen the result physiologically or otherwise, then it is time to apply it. You simply go to the patient and tell him that you've been working on this now for a year or so and have done it repeatedly in animals, and this is the best treatment for you, or your son or daughter or husband or wife. Do you want us to try it or not?

Hughes: You would make it clear that it's a new procedure?

Gerbode: Oh yes, make it clear and write it all down in the chart, and the history. Sometimes people have gone to the point of having [patients] sign a document [which] reads something like, My doctor has told me all the risks connected with this venture and explained all the various possibilities, and I hereby give him consent to apply it.

Hughes: Is that something that the individual physician would decide to do or not do?

Gerbode: Yes, that's right.

Hughes: Are most patients willing to go ahead with a new procedure?

Gerbode: Yes, they are. If they're in a hospital with a good reputation and dealing with good people, they're willing. I never really had difficulty, even in the early days of open heart surgery, getting people to agree to have the operations. You'd present the statistics, the facts, the problems. On the one hand there's hope; on the other hand there isn't much hope.

Gerbode: When IBM came to us, they obviously felt that using a computer would be of benefit to the treatment of patients. We of course had felt this all along and had therefore started using a computer to monitor certain physiological events in the postoperative care of patients.

The obvious things one would think about [monitoring] would be the blood pressure, the venous pressure, and the heart rate. But then there were so many metabolic things which were important in the treatment of a seriously ill patient, it was our decision to monitor some of these as well. So we developed methods of following the CO₂, the work of respiration, and a number of other very useful parameters, and put them into a program which would come out as a display on a screen for a nurse to watch. We could also have laboratory tests put into the computer so that [patients] could come back into the recovery room immediately, as soon as they were finished [with the operation]. The nurse then would not have to wait for a piece of paper to come from a lab or a telephone call; it would be there as soon as the test was completed. So we had terminals set up in the laboratories to put these bits of information into the patient's computerized record. Dr. John Osborn with the assistance of IBM's James Beaumont was in charge of this project.

We ended up by being able to monitor on-line twelve very important parameters. This is very sophisticated medicine, because when a nurse or a doctor can look at twelve physiological effects in a seriously ill patient, he or she has a lot of very useful information. What actually happened after a while is that nurses got to be expert at interpreting these data and could make decisions themselves about giving blood or changing the respirator: increasing the amount of respiratory pressure, the volume of respiration, the amount of oxygen, a lot of things like this.

I likened the use of a nurse in this capacity [to] flying an airplane with the use of instruments rather than with the seat of her pants. If you learn how to fly an airplane with instruments, you can fly it through hail and storms and everything, but if you are doing it with the seat of your pants, you sometimes get into terrible trouble. This obviously requires a certain amount of intelligence, and we were lucky to have nurses who were very intelligent. Furthermore, once they learned the method of following patients with the computer, they liked it very much. Some of them left the hospital for various reasons to go to other hospitals, but they always tried to get back again, because they felt more comfortable having precise information.

Hughes: Did they have to go through a training program?

VI MEDICAL/SURGICAL ACTIVITIES AND HONORS

The Frank Gerbode Medical Research Foundation

Hughes: Now the Gerbode Medical Research Foundation.

Gerbode: A few years ago several members of the board of [what was] then IMS [the Institutes of Medical Sciences], which is now MRI [the Medical Research Institute], thought it would be a good idea to have an endowed chair in my name. So they decided to have a small fund raising activity to establish this chair. Actually, as time went on, it turned out to be more reasonable to have a foundation which would support research than to have a chair, although they could function similarly as far as using money is concerned.

Anyway, this was set up as a nonprofit foundation. Funds were raised. I must say that they didn't pursue a very vigorous fund raising campaign, which was fine with me because it's kind of embarrassing to sit here and have people raising money for you in this way. Anyway, they did raise a certain amount of money, and this has been used to support new research, support young people getting started in research, and to pay for equipment and other expenses which were not foreseen in the beginning of any program. One is always short of money in research.

Contributions come in slowly. The trustees decided that they would not use the capital but only the income from the fund. This, then, meant that there wasn't very much money to spend. But still, it's better in the long run to keep a capital fund going, I think, than it is to spend it all. [The foundation] continues, and I imagine it will continue in the future.

Hughes: Can more than one individual be supported at a time?

Gerbode: The American Association for Thoracic Surgery is the largest and most prestigious thoracic and cardiovascular organization in this country. I felt very highly honored that they made me president. I had served on various committees along the way, the membership committees for one thing for several years. It has an annual meeting. That meeting is always attended by a vast number of thoracic surgeons in the country, most of whom are not members. There are many people who come from other countries to attend the meeting as well. For example, Europeans are always heavily represented at the meeting. It's a very friendly meeting to attend, too. The atmosphere is very good. The scientific papers I think are among the best in this particular category anywhere.

The Society of Thoracic Surgeons

Gerbode: There's another society called the Society of Thoracic Surgeons, which was started many years later because it was felt that younger thoracic surgeons needed to have their own organization, many of whom could not get into the American Association for Thoracic Surgery. It has very good meetings annually as well. Generally speaking, there are more younger people attending it. The attendance has always been excellent right from the very beginning.

Hughes: The associations have membership by appointment, by election?

Gerbode: Yes. Your name is usually submitted by two or three people who write letters of recommendation. Then you have to send in your curriculum vitae and list of publications. Then you go through a long process of being looked over by the membership committee. The society usually accepts the recommendation of the membership committee.

The American Surgical Association

Gerbode: The American Surgical Association is another very prestigious American [organization]. I was fortunate in being made a member of that quite a while ago, too. That probably is the most prestigious of all the surgical associations in this country. Most of the men in it have done quite a bit of teaching or research, have a lot of publications and are more or less in a leadership position, mostly in universities in the country, although not entirely.

The Society of Clinical Surgery

Gerbode: The Society of Clinical Surgery was started by Harvey Cushing and some of the Mayo brothers many years ago. They had meetings twice a year. They'd go to the various clinics, have an operative clinic, a discussion of operations, and a clinical session where the best of what that particular university department or clinic was doing [was presented]. A small group of people [were members], ten or fifteen originally. Membership in that society has gone up to perhaps fifty or sixty. They have a meeting once a year now. The meeting is usually an operative session in the morning and then a sit-down discussion in the afternoon.

Hughes: Do they deign to include West Coast institutions?

Gerbode: Oh yes. I've been a member for many years and they have had meetings here and in Los Angeles.

Hughes: In the early days it was pretty much an East Coast phenomenon, was it not?

Gerbode: Oh yes. In the early days it was entirely East Coast, and mostly New England and Baltimore. But then by the time I came along my chief, Dr. Holman, was a member, and I guess maybe Dr. [Howard] Naffziger at the University of California was a member too.

Presidency of the American Association for Thoracic Surgery

Hughes: Is there anything significant to talk about in connection with your presidency of the American Association for Thoracic Surgery?

Gerbode: I don't think so. If you're president, the big worry is that you have to give a very formal paper. That bothers people. As soon as they say you're going to be president, that means you have to start thinking about what you're going to say. [laughs]

Hughes: Which is on a research topic?

Gerbode: It can be anything you want. Luckily we were right in the midst of this computerized monitoring, [so] I then gave my paper on computerized monitoring for seriously ill patients, which was a very timely thing at that point.

Gerbode: They made me an honorary member a few years ago, which is nice to receive. They meet about once a month, usually in a hospital setting, and talk about any new ideas they have or new contributions. It's a very pleasant organization to belong to.

The International Surgical Society

Gerbode: To me the most important society outside of the American ones which I belong to is the International Surgical Society, or Société Internationale de Chirurgie. I spent many years in that society. I first heard about it through Evarts Graham, who was the president of it at one point. He was professor of surgery at Washington University, St. Louis. He found that this society, which was dominated entirely by Belgians, was so confusing and difficult to understand that it was very frustrating to him. For example, keeping records of payments of dues [and memberships was] done in a curious way, and he couldn't really ever get good figures for them. Even though it was an international society, they had absolutely no democracy in electing their presidents. The same family of people became president by their own decision. "Well, I guess I'll be president for another four years. Then I don't think I want to be president after that." There wasn't any nominating committee or anything like that. It was just sort of handed around. It was just terribly irritating, particularly to Americans. We don't like that kind of thing very much.

[telephone interruption]

Hughes: You were talking about the International Surgical Society.

Gerbode: I was made president of the American chapter of the International Surgical Society and then got on the program committee of the International Society. So I went to Brussels twice a year to work on the program for the meeting which occurs every two years. I got to see the office and to know the people and began to work on the problem [of the society's organization].

The office [was] run by a woman who had been there, firmly established, for years. She really ran the whole thing in her own way. She kept track of who paid dues [by making] little dots in a book beside [members'] names. If they paid it would be a blue dot, and if they didn't pay it was a red dot, or something like that, which was a terribly curious way of doing it. The money I guess got deposited in a bank in Brussels. We never quite could see any balance sheet, although a Belgian accounting firm went over the books

Hughes: So there was money?

Gerbode: Oh, there was an adequate amount of money, because as time went on the Americans had so many members appointed in this country, that that in itself amounted to quite a bit of money. So now the secretaryship is in Basel, Switzerland under the direction of Martin Algower. It's modernized and is very active and very good. What will happen in the long run I don't know, but at least it's on firm footing for the time being.

Another thing which bothered some of us a great deal was the publication [of the papers from the meeting].

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Gerbode: [The papers] would come to you in a bound volume at great expense, and always so late that you more or less had forgotten about them. I finally got the [headquarters office] to tell me how much this was costing them; it amounted to about sixty thousand dollars. A good deal of the money that was being paid into the society went to subsidize this antediluvian type of publication. These things would arrive, you'd put them on the shelf and never read them, or they'd go to libraries, and nobody would ever read them in libraries either.

We finally got the society to consider having a good journal. Various organizations were canvassed, and the suggestion was made to them, "Would you like to publish a journal that would be the official journal of the society?" The papers would be selected for this journal not only from the meeting but from other contributions throughout the year. Finally Springer Verlag, the German [publishing] company, said that they would be willing to do it if we would subsidize them for a number of years. We got enough money together to subsidize the publication for two or three years. Springer Verlag itself lost money, and is still I think losing money. But we finally have the World Journal of Surgery, and it is very good. Only the best papers from the meeting get into it. They have to go through an editorial committee so a lot of the bad papers never are published, which is good. Then they have developed a very good way of presenting symposia on important aspects of surgery, not related to that meeting. They have a very good editorial board from all over the world. It's turned out to be a very fine journal.

Hughes: Is the criterion excellence or is there also an attempt to get a broad representation?

Gerbode: We try to get everybody to participate in it, but they don't take papers unless they're high quality, even though they are from a country that doesn't publish very much.

Gerbode: be and who the president was going to be. We felt this was not being very democratic and we had to change that as well. We did this through the council, which is a group of representatives from various countries. The council finally had courage enough to say no, we're not going to let you decide where the meeting is going to be. We're going to decide. This was a little traumatic for the bureau, but we finally put it through. The Belgians are very strange people in many ways. They're stubborn, difficult to deal with. I guess psychologically they've been affected by being conquered so many times by the Germans.

At the meeting in Kyoto the bureau tried to push through its own president. I didn't think its selection was going to be very good at all. It had selected the person, I think, because it was going to get something back from the person it had nominated, in terms of membership, or paying off an old obligation in one way or another. I was president at the meeting in Kyoto. They nominated this fellow for presidency, and then I had a little group of people who were going to nominate some other people from the floor. I said, "The nominations are now open from the floor," which they had never heard of before. They just said, "We've decided the president will be so-and-so," and then everybody said yes. But I said, "We're going to vote on this." So there was another nomination from the floor. Then I said, "I think we ought to have some discussion of these candidates," which had never been heard of before either. So various people got up and talked about the virtue of the two candidates, and so forth and so on. Finally the candidate whose name had been submitted from the floor won quite easily. [The candidate who didn't win] had to have a major operation on his aorta performed about three or four months after the meeting, and he died afterwards. So he wouldn't have been president anyway. It was too bad. He was a nice man, but not a very brilliant person.

Hughes: Were you the first American president?

Gerbode: No.

Hughes: Is there any subdivision? Surgery is a big field.

Gerbode: No. There has been a conflict, because so many of the bright young people went into cardiac surgery, and the programs are a lot more exciting in cardiac surgery than they are in let's say gastrointestinal or colon surgery. Hardly anything ever comes out that's very new [in these fields]. So the vascular people got kind of snooty about it. We used to have the meetings [of the International Cardiovascular Society and the International Surgical Society] at the same time or

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Frank Leven Albert Gerbode

FRANK LEVEN ALBERT GERBODE:
PIONEER CARDIOVASCULAR SURGEON

With an Introduction by
Norman E. Shumway, M.D.

An Interview Conducted by
Sally Smith Hughes
1983-1984

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*Underwritten by the Gerbode children
in memory of their father.*

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INTRODUCTION

Frank Gerbode was a man of many parts. Fortunately, these transcripts reveal some of the facets that made Frank Gerbode a household name everywhere there is any surgery of the heart. In 1954 after years of careful research Dr. Gerbode performed the first successful open heart surgical procedure in the western United States. In 1958 an actual open heart surgical procedure was televised live from the old Stanford Hospital in San Francisco. An atrial septal defect was found to have anomalous pulmonary venous drainage so a more complicated surgical procedure was carried out than was originally planned. The patient made an uneventful recovery, and a wide public audience began to realize the potential of this new approach to previously hopeless cardiac diseases. Working first with the ingenious Dr. John Osborn, then with the dynamic Dennis Melrose of the United Kingdom, Dr. Gerbode developed a safe and reliable heart-lung machine to maintain the patient during open heart surgery. Dr. Gerbode was among the first to appreciate the importance of a versatile and loyal laboratory staff. Bing Moy and Don Toy were of outstanding help in the early days of the open heart, and they reflected Dr. Gerbode's admiration and confidence.

Dr. Frank Gerbode was a meticulous and outstanding cardiac surgeon. He was the first to suggest the median sternotomy for all kinds of cardiac surgery. Prior to his use of this approach, the bilateral tranverse sternotomy was universally utilized. The number of postoperative complications incidental to the bilateral thoracotomy was greatly reduced. Dr. Gerbode reported the first series of left ventricular-right atrial shunts and their successful closure. In the very important area of postoperative care for the open heart surgical patient, Frank Gerbode was at the vanguard of those who computerized the various physiological parameters so important in that crucial period of convalescence.

Outside of the operating room, Frank Gerbode was a most generous individual. Colleagues from all over the world were welcome in his beautiful home, and he liked nothing better than to take them out in his sailboat for a day on San Francisco Bay. Having trained upwards of 200 cardiac surgeons worldwide, Dr. Gerbode never needed to find hotel accommodations wherever he travelled. He was the father figure for many younger cardiac surgeons and physicians.

Frank Gerbode brought much worldwide attention to Stanford University. As it is said, however, a prophet is never without honor except in his own home town. With the retirement in 1955 of Emile Holman from the chair of surgery at Stanford, the obvious choice of Frank Gerbode to be the successor was not forthcoming. The Pacific Coast Surgical Association, for which Frank Gerbode

had often been the host when that group would meet in Hawaii, likewise failed the opportunity to appreciate Dr. Gerbode by making him its president. Neither of these slights seemed ever to bother Frank Gerbode, but it is interesting to speculate what might have happened to clinical medicine at Stanford if Frank Gerbode had been chairman of the department of surgery when the medical school moved to Palo Alto.

Staying in San Francisco and almost single-handedly building a new medical center to become known as the Presbyterian Hospital and the Pacific Medical Center, Frank Gerbode continued to perform and support significant research as well as developing in a private hospital environment a most respectable educational program. National and international honors compensated for the lack of local recognition and appreciation given to Frank Gerbode. He was an honorary member of the Royal College of Surgeons of England and Edinburgh. He was president of the American Association for Thoracic Surgery. In 1982 he was the first recipient of the Michael E. DeBakey Award for Excellence in Cardiac Surgery.

All-in-all, Frank Gerbode was a man of tremendous quality. Everything he did had the touch of excellence about it. Like the late Henry Kaplan, the renowned radiotherapist and conqueror of Hodgkin's disease, Frank Gerbode would tolerate only the highest quality work.

Frank Gerbode had his off days. As Somerset Maugham once said, "Only a mediocre man is always at his best." But on his best days, and Frank Gerbode was usually at his best, he had mighty few peers. As Frank would say, "Life goes on," so it is left for the rest of us to do our best and hope that its performance will come close to the standard that he established for us.

Norman E. Shumway, M.D.

29 April 1985
Department of Cardiovascular Surgery
Stanford University
Palo Alto, California

INTERVIEW HISTORY

Frank Leven Albert Gerbode was interviewed by the Regional Oral History Office to document his professional career as a pioneer of cardiovascular surgery and to record other aspects of his many-sided life. Highlights of the medical and surgical portions of the interviews include his contributions and those of his surgical colleagues to the explosive growth of cardiovascular surgery after World War II, his development with M.L. Bramson of a membrane heart-lung machine, his formation and leadership of the first open heart surgery team on the West Coast, his collaboration with John J. Osborn in the organization of a computerized monitoring system for postoperative patient care, and his prominent role in the foundation of the Institutes of Medical Sciences (now the Medical Research Institute) at Pacific Medical Center, San Francisco.

Although retired from surgery since 1980, Dr. Gerbode at the time of the interviews was anything but inactive. He was director of the Heart Research Institute, and a trustee on the board of directors of both MRI and the Pacific Medical Center. He was an active member of numerous surgical societies, and made frequent trips to attend meetings across the country and around the world. On these occasions he usually encountered some of the former fellows of the training program in cardiovascular surgery which he founded at the Heart Research Institute. Dr. Gerbode regarded the training of this outstanding group of surgeons as his greatest professional accomplishment.

Dr. Gerbode's international renown in cardiovascular surgery appears from his account in the interviews to have been due to a combination of factors. He returned from World War II with wide surgical and organizational experience. However, like many other American surgeons who had interrupted their careers to go to war, he found few opportunities to operate when he returned home. With time on his hands, he turned to the dog lab where he developed operative skills and procedures which were to serve him well when surgical cases subsequently were referred to him. The war and immediate postwar years produced the ingredients for the rapid growth of cardiovascular surgery: such things as antibiotics to control postoperative infection, better blood typing and handling methods, improved techniques for administering anesthesia with an open chest, efficient respirators, and the first primitive heart-lung machines.

There was in addition a conceptual change. The prewar notion that the heart was surgically inviolate had been proven wrong by Dwight Harken and other pioneers of heart surgery. Dr. Gerbode, well trained in the practice of surgery and the protocol of the research laboratory, was in a fine position to take advantage of the opportunities in the promising new field of cardiovascular surgery.

But circumstance and timing are not in themselves sufficient to explain Dr. Gerbode's professional achievements. First and foremost, he was a man of diverse abilities. In respect to surgery, he possessed the rigorous education, manual dexterity, and wide surgical experience required for the formation of an outstanding surgeon. In addition he had the ability to attract able people as his collaborators and assistants. His successes with the open heart surgery team, the surgical fellows training program, computerized patient monitoring, and the membrane heart-lung machine are testimony to this ability. He also had organizational and leadership skills and what he called a logistical sense which permitted him to keep his complex professional and personal affairs running smoothly and productively. Last but not least, he had vision, a willingness to risk the unknown and untried, and the personal warmth and social and financial connections to win support for his ventures.

In addition to his professional concerns, Dr. Gerbode had many philanthropic, social, and artistic interests. He was a trustee of the Wallace A. Gerbode Foundation, a family philanthropy which he and his wife, Martha Alexander Gerbode, established in memory of their oldest son. After the death of Mrs. Gerbode in 1971, their daughter, Maryanna Gerbode Shaw, and son, Frank Albert Gerbode III, became board members.

A genial and sociable man, devoted to family and friends, Dr. Gerbode was also active in the social and artistic life of San Francisco. In his free time, if that can be imagined, he enjoyed sailing on San Francisco Bay, skiing at Sugar Bowl, duck hunting in the Sacramento Valley, visiting his farm on the island of Kauai, and painting in oils and acrylics.

Dr. Gerbode was a tall man, distinguished in appearance, with glasses, a full head of white hair, and a neat mustache. He was fond of clothes, particularly ties, and was always impeccably dressed. One was struck by the directness of his manner and gaze, which were tempered by his sense of humor, ready chuckle, and infectious love of life.

Dr. Gerbode died unexpectedly on December 6, 1984. A memorial service, attended by family, friends, and members of the medical and civic communities, was held at Grace Cathedral on December 14. A tape recording of the service led by Dr. Gerbode's friend, the Very Reverend C. Julian Bartlett, Dean Emeritus of Grace Cathedral, is on file in The Bancroft Library.

The interviewer: Sally Smith Hughes is an interviewer on medical and scientific topics for the Regional Oral History Office. She has degrees in zoology and anatomy from the University of California and a Ph.D. in the history of medicine from the University of London.

Circumstances of the interviews: The first twelve interviews were conducted between July 20, 1983 and October 23, 1983 in Dr. Gerbode's office in the Medical Research Institute at 2200 Webster Street, San Francisco. The office, replete with medical books and memorabilia, included a couch stacked with current journals and catalogs which he was in the process of reading. Over his desk hung a collage of family photographs and mementos, including several shots of his sailboat.

A second set of ten interviews was conducted between April 12, 1984 and November 14, 1984 after Dr. Gerbode and the interviewer realized that several topics had inadvertently been omitted from the earlier sessions. Many of the topics were suggested by reading Dr. Gerbode's extensive correspondence which provides an insider's account of the growth of cardiovascular surgery on the West Coast.*

The second series of interviews were conducted in the library of Dr. Gerbode's large, art-filled home on Divisadero Street in San Francisco. The sessions were preceded or followed by lunch and conversation in the dining room overlooking an old fashioned flower garden and San Francisco Bay.

Editing: The transcribed interviews were edited with an eye to accuracy and clarity. In a very few instances material was rearranged for the sake of continuity; the change in such cases is noted at the bottom of the appropriate page. Repetitions understandably occurred because of the long period (almost one and a half years) during which the interviews were conducted. They were not eliminated unless they added no further information. Dr. Gerbode reviewed the edited text and made minor deletions, changes, and additions. His sudden death prevented his editing the final three interviews.

Note on terminology: The name changes of several institutions with which Dr. Gerbode was associated may be confusing to the reader. Stanford Hospital in San Francisco became Presbyterian Hospital when Stanford University moved its medical school to Palo Alto in 1959. The new Presbyterian Hospital, whose operating and recovery rooms Dr. Gerbode helped to design, opened in April 1973. In 1959, the Institutes of Medical Sciences (IMS) were organized by Dr. Gerbode and others to continue the medical research activities of Stanford Hospital. In 1982, the name of the IMS was changed to the Medical Research Institute. The organization consisting of the Presbyterian Hospital, the Medical Research Institute and several other buildings, and bordered by Clay, Sacramento, Buchanan, and Webster Streets, is now known as the Pacific Presbyterian Medical Center.

Sally Hughes
Interviewer-Editor

6 April 1985
Regional Oral History Office
486 The Bancroft Library
University of California at Berkeley

*At the time of writing, the destination of Dr. Gerbode's correspondence was unsettled.

I FAMILY BACKGROUND, EDUCATION AND EARLY CAREER

[Interview 1: July 20, 1983]##

Grandparents, Parents, Brother and Sisters

Hughes: Dr. Gerbode, could you tell me a little about both sets of grandparents, what their names and professions were, and where they lived?

Gerbode: I don't know too much about my grandparents, because they were in Europe, except for one, and they were quite old. I was the last of four children, so that by the time I came along, they'd pretty much vanished from the scene. But in any event, the first Frank Gerbode came to California in 1850. He apparently came through the southern route, from New Orleans. He was Frank Albert Gerbode and the first one in California. He became a goldminer. What he was before he was a goldminer, I don't have any idea. He established a homestead in El Dorado County and started gold mining. When he was there, he hired some Chinese and French [workers] to help him with what was then a pocket mine. We still have the property. It's a hundred and sixty acres in El Dorado County. It hasn't been mined since he died many years ago.

He brought over my father, Frank Albert Gerbode*, from Germany when my father was quite young, and became his foster father. In other words, he adopted him after he got him over here. My father's

##This symbol indicates that a tape or a segment of a tape has begun or ended. For a guide to the tapes see page 505.

*Frank Albert Gerbode II was the nephew of Frank Albert Gerbode I.

Gerbode: mother was named Mary Lewis. She was an English woman from London. How they got together, I haven't any idea. But apparently they were married.

Then on my mother's side, she [Anna Marie] came from the Rhineland, and her father was a Scotchman by the name of Leven. How her father got to the Rhineland from Scotland, I haven't any idea.

My father came to Placerville and eventually started a construction business and built several small towns and mining towns in El Dorado County. He was a hard-working, honest man. He was a good deal older than I. My mother was forty-three when I was born.* My father was fifty-three, so there was a big gap of age between both of them and myself.

Hughes: Were they married late?

Gerbode: Yes. Then they had four children. They had a son named Albert, who was in a submarine in the First World War. He settled in Florida after the war, went into real estate and was quite successful. Then he was on his way to New York on a yacht with a friend of his. They had to stop for fuel, and in the skiff in which he was rowing, a big wave came, the fuel tank hit him in the head and knocked him out, and he was drowned. He had no children.

Hughes: Was this right after World War I?

Gerbode: Soon after the war. I had an older sister by the name of Louise, who was a beautiful girl. She died of acute glomerular nephritis a few days after she graduated from high school. That was a tremendous blow to my mother and father.

I had another sister, Gertrude, who became a business woman and worked for Blake, Moffitt and Towne, a paper company, and became an expert in fine paper. She was quite an authority on where to get fine paper for special jobs.

Hughes: Is she alive?

Gerbode: No, she died of a coronary about ten years ago. So that's the family.

Hughes: Let me ask you a question about the name Gerbode. You said that your real father was German, but what about your step grandfather?

Gerbode: My step grandfather was from near Hanover.

*February 3, 1907.

Hughes: So Gerbode is--

Gerbode: Gerbode is an old Saxon name. It's a strange name. Once I found a Gerbode in the telephone directory when I was traveling around. I didn't look them up because I wasn't sure that I might want to get connected with them. You never know what you might run into. There are some big advantages in having a name that's rare. People know who you are.

A friend of mine in Australia once was curious about the name. He's a voracious reader, and he found an old Belgian book. In it there is a Count Gerbod, and he thought this probably was an ancient ancestor. He apparently was a soldier-type who lived in the early fifteenth century. But whether that's true or not, I haven't taken the trouble to find out. But he thought this was a great discovery, that he'd found a Count Gerbod, who was apparently from an old Belgian family. It's possible, because it's not too far from Saxony. I suppose if I wanted to spend some money, I could trace it all back.

Hughes: I'm interested in the fact that your father was adopted by your great uncle. Do you know any more about that?

Gerbode: No, I don't know why. It was so long ago by the time that I got curious that none of us in the family really paid much attention to it. I guess when [my great uncle] brought him over here, he felt that he'd do better adopting him than just having him live here.

Hughes: But it was more than a working arrangement.

Gerbode: I think he was very fond of him, and I guess helped him get started in his business. There's the old miner's cabin there on the wall. [points to photographs] That's the original miner's cabin, which my father and I rebuilt when I was seventeen years old, using some of the original logs, but cutting other logs from the same property.

Hughes: Was he successful as far as the gold mining was concerned?

Gerbode: He apparently was fairly successful, but unfortunately, he was very generous, and no one came by his place, I guess, without leaving with something. He hired quite a few people to help him with that mine. He once also saved old man Studebaker's life. The original Studebaker lived up there at the same time. I guess they were out at a wild party some Saturday night. He pulled him out of a creek before he drowned. So the story goes, anyway.

Grammar School and High School Education

Hughes: Let's get a bit more detail about your childhood. Do you remember where you went to grammar school?

Gerbode: Yes, I went to public grammar school in Sacramento. I went through half of high school there, too. My sister was living in San Francisco, and I decided I'd rather come to San Francisco to finish high school. So I came and stayed with my sister and her husband, and went to private school to finish high school.

Hughes: Which school?

Undergraduate Education at Stanford

Gerbode: It was called Raymond School. It doesn't exist any more, but it was a school with very few students. I finished there, and then I took the college board examinations and applied to the University of California in a premedical course. I didn't like the University of California. I went for a summer session, and I found it highly competitive and too big for me. So I decided I didn't want to go there.

This was in the summer, and it was too late to apply to Stanford then, so I went to the University of San Francisco. I stayed there until I could get into Stanford, which was a year or so later. Then I finished my premedical courses at Stanford and went into medical school there.

Hughes: What about this decision to come to San Francisco?

Gerbode: Maybe I had a feeling Sacramento was too small. That sort of sounds demeaning, but I wanted to see something on a broader basis. I'd been to San Francisco a few times, and I liked the atmosphere in the city very much. I had a good opportunity to stay with my sister, so that's what I did.

The Decision to Go into Medicine

Hughes: What about your parents' attitude toward education?

Gerbode: My father wanted me to be a businessman. I don't know why he thought I would have made a good businessman, but to satisfy him, I went to a business college for about six months and learned how to do bookkeeping and accounting and a few things like that.

Hughes: That was in Sacramento?

Gerbode: Sacramento. I got a good job for about six months with the Pacific Gas and Electric Company and showed him that I could do it. Then I went to him and said, "Now I showed you I could do it, but I don't want to do it." My mother wanted me to be an architect.

Hughes: Why did she have that idea?

Gerbode: I don't know. She thought I could draw, and she thought it was a very good profession. They both thought being a doctor would take too long, and maybe it was uncertain. It was a kind of a future that they hadn't been closely familiar with.

Hughes: There was nobody in the family in the medical profession?

Gerbode: No.

Hughes: How did you get the idea to go into medicine?

Gerbode: I suppose because in Sacramento I got to know a few doctors, and they all seemed to lead quite independent lives, which I liked. They didn't have bosses, and they weren't beholden to anybody. I think the independence appealed to me, as well as being able to do something for somebody else. So I think it was the independence and the desire to do something for somebody else that got me started on it.

Hughes: Had you had any particular interest in the sciences?

Gerbode: No, I hadn't. I took the usual courses in high school, but I can't say that I was very good at them, [although] I got fairly good grades. I think all the courses I took in high school, and later on in college, were to accomplish the aim of getting there. If they set a path for you in any career, and they say you have to go through these steps to get there, then you have to do it. So I did it.

Extracurricular Activities at Stanford

Hughes: What about extracurricular activities?

Gerbode: I didn't do too much. When I was at Stanford, I really wanted to play tennis and do some other things like that, but I was too worried about not getting into medical school. So I really studied very hard. I got very good grades.

I did run for men's council at Stanford, though, and was elected. Men's council is a student body group which governs a lot of activities and sets standards for students. I was pleased that they elected me.

Hughes: Was that your first taste of politics?

Gerbode: I think it probably was the first time I ever accepted an invitation to run for an office. Later on, in medical school, I was president of the student body. I can't say that I worked very hard to get the job, but they elected me anyway.

Hughes: Does that imply that you were a well-known individual in medical school?

Gerbode: I guess maybe nobody else wanted the job. I believe I was pretty well liked.

Hughes: What year of medical school was this?

Gerbode: Nineteen thirty-six.

Hughes: So this was your last year at medical school.

Gerbode: Yes.

Hughes: Do you have to be a senior?

Gerbode: They usually elect somebody in the senior class.

Financing the Stanford Tuition

Hughes: How did you finance the Stanford tuition?

Gerbode: I worked in the summer. I accepted a certain amount of money from my parents. I won a scholarship when I was down there, too.

Hughes: This is medical school or undergraduate?

Gerbode: Undergraduate. I kept it for a year. It was a scholarship which paid my tuition. I also worked in the summers at various jobs. When I ran short of money, I would call my family for support, and he always helped, but I didn't really depend on him entirely. Although he would have helped me more than he did, I didn't want to do it that way necessarily.

Hughes: Were they pleased that you were going to Stanford?

Gerbode: Yes. I think it scared them half to death to think that I was going to try to become a doctor rather than a businessman, but they accepted it after a while.

The Major in Physiology

Hughes: I know you majored in physiology. Did you know immediately that that's what you were interested in?

Gerbode: I think the reason I got involved in physiology was that I realized that this was a science very close to medicine. Also I had an opportunity to do research in the summer in the department of physiology, and I liked the idea that I could start doing research as an undergraduate.

My brother probably is responsible in part for that, because he was also very interested in research and worked with Thomas Edison for quite a while on electrical devices. Even when he was in real estate, he worked some with Edison. Maybe my brother was a hero to me in a way, and maybe I thought, "If he can do it, maybe I should try to do it, too."

Hughes: Did he have any special background?

Gerbode: He was trained in electrical engineering, and he was on a submarine during the First World War as a trained electrical engineer. Submarines run on electricity, so they need people who can understand it. I guess maybe he inspired me in a way which he didn't know about. Then when I had the opportunity to do research at Stanford in the summer in the physiology department, I was rather intrigued with the possibility of making a discovery. It was a very good summer.

Hughes: Can you tell me about your first research project?

Gerbode: The first research project was like Pavlov's experiment, and it was to teach cats to go a certain way through a maze. I had to construct a maze and train them in avoiding certain turns in this maze to get at the food. It was an experiment in conditioned reflexes.

Hughes: Was this something that somebody in the department was interested in?

Gerbode: Yes.

Hughes: What was the standing of the department of physiology?

Gerbode: The department of physiology was one of the good departments. It wasn't outstanding. Unfortunately, at the time they were changing the chairmanship, and the two men who were assistants to the chief were not sure about their future, and the chief was not very effective. But one of the young men who was second in command was the one who helped me do the research.

Hughes: What was his name?

Gerbode: Victor Hall.

Hughes: Were you seeing this research as a tie-in with medicine?

Gerbode: I was thinking it might help somewhere along the line. At the same time I took a minor in psychology. So it was part of the same concept of understanding things about the mind, I guess, that got me started.

Hughes: Were you toying with the idea of specializing in psychiatry?

Gerbode: No. At that time I thought maybe I might be a roentgenologist.

Hughes: Why?

Gerbode: Because I had met a couple of roentgenologists, and they seemed to be connected with all the various specialties and had to understand everything to understand the xrays properly. So I felt this was quite good. They also were quite independent as individuals, and this appealed to me as well.

Hughes: What changed your mind?

Gerbode: There were too many other fascinating things as time went on.

The Decision to Become a Surgeon

Hughes: When did you decide that it was going to be surgery?

Gerbode: I decided that after my sophomore year. I think I decided that I could do it, and if I could do it, then that's what I probably should do.

Hughes: Do it in what sense?

Gerbode: Manually do it. And the other thing is, when I came up here to the campus.... You see, the second year [of medical school] was in San Francisco. It was in the old Cooper Medical School building, which was then the Stanford Medical School. I got interested in research as a student in the surgery department. That helped me, because then I could operate on animals and do certain experiments. The one who helped me with that was Professor [F.L.] Reichert. He got me interested in doing research. Dr. [Emile] Holman, who was the professor, was also very keen on doing animal research. He did a lot of experiments, and I started helping him as well.

Hughes: Was that unusual for a medical student to be engaged in research?

Gerbode: No, not so unusual. There were always a few medical students who were doing some research. I would say that the vast majority did not do anything like that, but there were always two or three or four in every class who were interested. Later on when I was on the faculty and found a student who was interested in doing research, I was very anxious to help him, because I knew what pleasure he was going to get out of it. We had several students in the old lab whom I helped get started, who are now professors of surgery.

One of them was a biomedical engineer. He had two degrees from Stanford, one in biology, and the other in engineering. He went to Cornell as an intern, and he soon was doing better research in the medical school than some of the senior departmental people, because he was trained properly, and he had the experience in the laboratory, so he knew what to do.

Hughes: Was the European model of medical research still in force? I know very early that Germany was held up as the prototype.

Gerbode: The big thing in those days was Vienna, but Vienna was not so well known for research as they were for pathology. The people who went over to Germany in surgery, when they came back, were very

Gerbode: accepted. They were accepted because they presumably had had exposure which they couldn't get in this country. Vienna, and Scotland, too, had very good reputations for training young men.

Hughes: You were already thinking of combining surgery with research?

Gerbode: Yes.

Hughes: In an academic setting?

Gerbode: Yes. I never really stopped doing it, either. I started doing it as a student, and I did it when I was in training. As soon as I came back from the war, I started right back in the experimental laboratory.

The Stanford Medical Curriculum in the 1930s

Hughes: You were in medical school between 1932 and 1936. This was the Depression. Did that influence you in any way?

Gerbode: Nobody really had very much money in those days. I was able to have a little car. I had a little Ford. The medical school was clinically oriented. It was an Oslerian type of medical school, built on studying the patients and teaching from them, so we had lots of contact with patients, even as students. And lots of contact with the professors, too.

Hughes: The first year?

Gerbode: In the sophomore year, not in the freshman year.

Hughes: The freshman year was at Stanford.

Gerbode: Yes.

Hughes: In the basic sciences?

Gerbode: That was anatomy and biochemistry and physiology. The old Stanford Medical School was built around sick people. The science and the practice was built on the [medical] problem. There were fewer lectures than in some schools, so it wasn't a didactic kind of school. A lot of people still think that that's a much better way to teach than with lectures.

Hughes: What subjects did you take in the second year?

Gerbode: It was required that we took physical diagnosis, history taking and learning how to write orders, and pharmacology. I found pharmacology pretty hard. I don't know why. I got a B in it finally, but it didn't come easily for me for some reason. I think the professor scared me.

Hughes: Do you think it was the chemistry?

Gerbode: It may have been the chemistry.

Hughes: Were you finding that your undergraduate education was holding you in good stead?

Gerbode: I think it was all right. I managed to get good grades. I could understand what was going on all the time.

Hughes: Was the medical school pulling from all over the country, or was it a local, California school?

Gerbode: They brought students from all over the country, but most of them were Californians.

Hughes: What was its reputation?

Gerbode: It was considered among the top medical schools in the country.

Research in Medical School

Hughes: Tell me a little about the research that you did in medical school.

Gerbode: I got interested in some research, first of all, on a certain inflammatory disease of the intestine. Nobody could find out why it occurred in certain people, so we tried to simulate it in the experimental animal. Professor Reichert thought it was due to obstruction of the lymphatic system of the small intestine, so we had to try to design an experiment which would prove or disprove that. I'm not sure that we ever proved that it was caused by that, but we spent a lot of time on it. I wrote a couple of papers.

Hughes: Was there anything else?

Gerbode: Later on I got interested in the heart and did some experiments to create certain congenital abnormalities in the experimental animals, so that we could study them, and the animal that had that disease. This was great fun, and I liked that very much.

Hughes: Why the heart?

Gerbode: I guess because some of us felt that this was going to be the next frontier in surgery. The other thing was, Dr. Holman was very interested in circulation and the heart. I helped him with a lot of cases connected with the major vessels. Also, he had done some experiments on the heart as a medical student at Hopkins, and I guess this interested me as well. I began to read about what the previous generation had done, and tried to understand what was happening in the circulation. Probably the fact that I had taken physiology for more than the average amount of time fitted in well with trying to understand the heart and circulation.

Emile Holman, Surgeon

Hughes: Holman [was your mentor]?

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Gerbode: As soon as I decided I wanted to be a surgeon, then [Holman] was my boss. He had a very fine reputation in the country as an experimental surgeon, but also because he was the last resident trained under [William S.] Halsted, who was the father of American surgery. [Holman] also started the residency type of training at Stanford Medical School.

Hughes: Do you remember when that was?

Gerbode: I think he came out in the twenties from Hopkins and started the residency type of training, which then followed right straight through until he retired.

Hughes: Was he American?

Gerbode: Yes. He was the son of a minister. This also came out in many of the things he did, in his personality.

Hughes: Can you expand a little on that?

Gerbode: He had strong feelings about right and wrong. He was of German ancestry, and this was also very apparent. So he combined some of the things he picked up from his father with his Germanic background; it brought out a very strong person.

Hughes: I'm sure that influenced your relationship.

Gerbode: I had to cope with it.

Hughes: He was very much the boss.

Gerbode: No question about it, he was the boss. And if you did something he didn't like, he told you right away. There was no question about that.

Hughes: Was he a general surgeon?

Gerbode: He started out being a general surgeon, but he really finished by being a general and a thoracic surgeon. He also made his reputation by being one of the early vascular surgeons, although he didn't do many of the new, innovative things as a vascular surgeon. He was mainly interested in arteriovenous fistulas, which are connections between the arteries and the veins. These connections produce certain physiological changes in the veins and in the circulation, which interested him a great deal. He spent most of his experimental life working on these particular abnormalities.

Hughes: In animals?

Gerbode: In animals and in humans, too. Some [arteriovenous fistulas] are congenital, and some are the result of stab wounds or gunshot wounds. So we always had a certain number of patients around with these abnormalities. For somebody interested in the circulation, this was very good.

Hughes: And the fistulas could occur anywhere in the body?

Gerbode: Usually they were between the major vessels, like the femoral vessels or iliac vessels or arm vessels.

Hughes: That would mean operating right around the pericardium.

Gerbode: Operating there, and also on the major vessels.

Hughes: Which I believe was very unusual in the prewar days, was it not?

Gerbode: Yes, it was unusual.

Hughes: My understanding, from the little reading I've done, is that the heart was considered until World War II to be surgically inviolate.

Gerbode: Oh, yes. There were some German surgeons who said that any surgeon who ventured to operate upon the heart was virtually insane. [C.A. Theodor] Billroth was one. The first stab wound was repaired by [Ludwig] Rehn in 1896, I believe.

Hughes: Were you actually participating in surgery on humans at this point?

Gerbode: Not as a medical student. We were required, if we had a patient assigned to us on the wards, to follow the patient through the operating room, so I did help operate upon patients by being an assistant, such as holding a retractor. But most of [the surgical] work came during or after the war.

Hughes: Would you consider yourself a protege of Holman?

Gerbode: Yes.

Hughes: Were there other people on the faculty with whom you had a special relationship?

F.L. Reichert, Neurosurgeon

Gerbode: Reichert, the professor of neurosurgery, influenced all of us a great deal. He was very interested in the residents, very interested in training, and very hard on us if we did things wrong. He watched our careers a great deal. Sometimes even more than Holman. He was more interested in seeing that the young men got on in their careers, and very interested in getting things published. He was always available for advice.

He wanted me to be a neurosurgeon and almost killed me, I think, when I told him I didn't want to be a neurosurgeon. The reason I didn't want to be a neurosurgeon simply was because, for all the hard work they did on the nervous system, there were very few patients who got well. We worked terribly hard keeping them alive during my residency period. Long hours of operating upon them, and then you'd end up by having somebody that was paralyzed or a vegetable.

Hughes: Was it mainly the length of the operation?

Gerbode: No. The brain is a very sensitive organ. If it gets a tumor, unless it's one of the rare benign tumors, you can keep people alive, but they are not very well when they're alive.

Hughes: So it was the poor success rate that discouraged you.

Gerbode: Yes. Actually, a great many young men were quite entranced with the idea, brain surgery being the big thing when I was a young surgeon. It was very exciting to be a brain surgeon, or to be training as a brain surgeon. I didn't like the poor yield.

Hughes: And yet some people would have considered that you had jumped from the frying pan into the fire by turning to cardiac surgery.

Gerbode: Yes, I think so, but on the other hand, I could see that [cardiac] conditions could be mechanically corrected, if you could just figure out how to do it, and you didn't end up by having somebody who was decerebrate or paralyzed.

Hughes: Were you doing a fair amount of reading at this time, too?

Gerbode: Yes.

Hughes: Did the fact that you were doing so much practical work mean that there wasn't a lot of bookwork connected with your studies?

Cardiovascular Surgery Before World War II

Gerbode: The reading in cardiovascular surgery was very limited at that time, when I was in my early training years, because there wasn't very much going on.

Hughes: What was there?

Gerbode: In medical school there was very little. During the war, we got more of it. But before I went into the war, around that time, some of the first heart operations were beginning to be done. This was very exciting, to see that you could physiologically improve somebody with an operation on the heart, and you had a living person who then could walk and work and be effective again.

Hughes: A few people were trying--I believe it was in the twenties--to do mitral valve surgery. Then there was a great hiatus until the postwar years.

Gerbode: Yes, that's right. I was very fortunate, because I was there at the right time. I guess that some of the first operations were done by people like Elliott Cutler at [the Peter Bent] Brigham Hospital. Then there was a fellow by the name of [Sir Henry Sessions] Scouttar, an Englishman, who did one of the first mitral valve operations. But a lot of people thought that both of them were a little bit off their rockers for trying it.

Hughes: They both had trouble getting patients, did they not?

Gerbode: Oh, they had terrible trouble. But we also had trouble here later on.*

Hughes: Had Cutler and Holman had any contact?

Gerbode: Yes, they were associated because Dr. Holman was at the Brigham for a little while. After his residency at Hopkins, he went to Brigham for a year or two. They got to know each other then. There was another fellow who was around at that time at Hopkins by the name of Mont Reid. He went to Cleveland and he was also interested in the circulation. Halsted was the one that started thinking about the circulation. He did simple things, like tying off an artery, but illustrated some very fundamental points about the circulation in so doing.

Hughes: And that's probably what got Holman started.

Gerbode: That's right.

Hughes: Did you have any time for extracurricular activities during medical school?

Marriage

Gerbode: I was married in 1931.

Hughes: So just before you started medical school?

*The problem of the resistance of cardiologists to heart surgery is discussed in session 5, 8/16/83.

Gerbode: Yes, my last year at Stanford.

Hughes: Was that a bit unusual in those days?

Gerbode: A little.

Hughes: How did you handle it financially?

Gerbode: My wife, Martha Alexander Gerbode, had a little money, and between the two of us, we were able to make it go. She had quite a bit more money than I did.

Hughes: So she didn't have to work.

Gerbode: She didn't have to work.

Hughes: Tell me how you met.

Gerbode: We met in the experimental psychology class at Stanford. My parents had meanwhile moved to Piedmont across the bay and her parents were in Piedmont, too. So we started riding back and forth to Stanford together.

Hughes: Does that mean you lived at home?

Gerbode: No. I went home for weekends. That's how we got to know each other.

Hughes: Why did your parents move to Piedmont?

Gerbode: I can't remember why they did. But I guess it was because my sister was living in the Bay Area, and they wanted to live closer to her. It wasn't because of me, because I'd already wandered off into this academic path.

Hughes: Where did you live?

Gerbode: We lived at Stanford together. First, we rented a little house. Then when I came up to medical school here, we lived in a nice little brown house on Broadway. We had our first child there, a son, Wallace Alexander.

Hughes: What year was that?

Gerbode: I think that was about 1933. He subsequently was killed at Stanford in an auto accident.

Hughes: How old was he?

Gerbode: He was nineteen.*

Internship at Highland Hospital, 1935-1936

Hughes: Tell me about your internship at Highland Hospital in Oakland.

Gerbode: By the time I finished medical school, I decided I wanted to try to be a surgeon. I felt that if I got into a regular surgical training program, then I wouldn't have an opportunity to deliver babies and do a lot of things in general medicine. So I decided a year of rotating internship would be good for me.

Hughes: This was before you graduated, is that not true?

Gerbode: Yes, you took your internship before they gave you the degree.

Hughes: It was still four years?

Gerbode: Still four years, and then another year before they gave you a degree. But anyway, the other reason was, my mother was very sick. She was in Piedmont, and she was bedridden. We had one son, so I wanted her to have the pleasure of seeing her grandson. My wife's mother was also not well. [We were] the only family they had really. So I felt it was better to be over there and let them see the grandson and see more of us, too.

Hughes: Can you describe your internship?

Gerbode: It was very hard work. I was sick twice during it, because I just got worn out. I got sore throats and all kinds of things. I really took it very seriously.

Hughes: Were you getting paid anything in those days?

Gerbode: Yes, fifty dollars a month. [laughter]

Hughes: For twenty-four hour days.

*Discussion of Gerbode family members and property on Hawaii was incorporated in later sections of the interview transcripts.

Gerbode: I think the most I ever made as a resident was sixty dollars a month and room and board and laundry. Now they get paid over a thousand a month.

Hughes: You were living at the hospital?

Gerbode: No. We found a little house in Piedmont, and rented it. Once in a while I had to stay the night, of course, when we had some special thing to do.

Hughes: Did Highland have any special reputation?

Gerbode: It was a favorable place for a general rotating internship. It had a loose connection with Stanford.

Hughes: Stanford rather than UC? Do you know why that was?

Gerbode: I guess because several of the people who became prominent in running the place were Stanford graduates.

Hughes: What about research?

Gerbode: No, there was nothing at all. I had to drop that. I was just too busy taking care of sick people.

Hughes: Did you learn a lot from that experience?

Gerbode: I took out a lot of tonsils. I delivered a lot of babies. I helped at a lot of gynecological operations and things like that, which I never really ran into afterwards, but I'm glad I did it.

I was glad once, years later, when I was up at Lake Tahoe, and the clerk at the desk said, "There's a lady in labor in room X-Y-Z, and she found out that you are a doctor. Would you mind going to see her?" [laughs] So I went up to see her. She was certainly in labor, all right, but not too far along. I said, "Why did you come here when you're [about to] have a baby?" She said we just went to various resorts until we found there was a doctor registered.

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Gerbode: Dr. Leo Eloesser was a good friend of mine. He was one of the famous professors [at Stanford San Francisco Hospital]. He had operated upon my mother, my father-in-law, and my mother-in-law. He had an extremely interesting life which has just been written up by Harry Schumacher. He liked me and was interested in me. Of course, I got to know him fairly well because of his having

Gerbode: operated upon the family so much. So I went to him and said, "I want to go into surgery eventually, but I want to go to Highland Hospital for my internship because I want that experience."

He said, "Get out of that place as soon as you can." He didn't like the idea at all.

Hughes: What was his reason?

Gerbode: It wasn't a big teaching hospital like our county hospital [San Francisco General]. If I'd said I wanted to do the same here, it would have been all right, because he was the chief Stanford surgeon. People are that way. I wasn't surprised.

Assistant in Pathology at the University of Munich, 1936-1937

Gerbode: There are two reasons why I went to Germany. First of all, by that time I had decided I was going to try to be a surgeon, and I felt that pathology would be very important in the training of a surgeon. Now the belief is that physiology is a better preparation for surgery than pathology.

There were two great German pathologists, world famous. One was [K.A. Ludwig] Aschoff and one was [Max] Borst. Aschoff was [head of the Institute of Pathological Anatomy] in Freiburg, and Borst was in Munich. So I did a little research on it, and I found out that Aschoff was a Nazi, or at least he was playing with the Nazi party, and Borst was not a Nazi. He didn't come out against [Nazism], but he wouldn't join anything connected with it. The Nazis didn't dare do anything to him, because he was too famous. As long as he didn't do anything overtly, they let him alone. Then I heard also that he was a very fine gentleman. So I wrote to him and asked him if he would take me on as a fellow for a year.

Hughes: Was this the thing still, to go to Germany?

Gerbode: No, not necessarily. Some went to Germany. Some went to other countries.

Hughes: But it was usual for an American to go abroad?

Gerbode: Not necessarily, no.

[interruption]

Gerbode: Another man on the Stanford faculty, Alvin Cox, a pathologist, went with Aschoff the same year that I went to Borst. I found Borst to be an extremely nice gentleman, a real cavalier of the old school. We hit it off perfectly.

The other reason I went was because I was curious to know what was happening in Central Europe at that time. The Nazis were getting terribly strong and talking a lot about things which I thought were very important to the world. So I decided if I went there, I could really look it over a bit without getting involved and at the same time get this training in pathology.

Borst gave me the job, which meant I had a little lab. I went there every morning, went through the whole business of pathology every day, and went to the lectures. It was a very, very interesting time. Then my wife and I had to find a place to live, and we almost gave up in desperation. We were living in a tiny hotel in Munich. Finally somebody said, "We know a woman from Boston who's got a house just outside of Munich, and she rents it once in a while." So meanwhile I'd gotten myself a little Ford, and we went out and found this beautiful house outside of Munich in Geiselnberg. That's where the movies are made now. They were beginning to make movies then, too. She said, "I'm terribly glad to see you, because I want to leave very shortly, and I'd much rather have somebody living in the house." She said, "You can have my servants, too."

So we had this beautiful house with a driver and a cook and an upstairs maid on practically nothing. I was a young doctor, and she liked me. She was married to a wealthy banker from Boston, so the money didn't make any difference to her. So we moved in very promptly. We had one son at that time, the one that was killed later. The living part was wonderful. Johann, the man-servant, was terribly excited that I had a little Ford. He was a good driver, so he would drive my wife to do shopping once in a while. The lady had him fitted out with various uniforms for every occasion. So when he went into town, he had a driver's uniform. By the time you drove up in front of the house, he'd go around to the back of the house and open the door for you with a white coat on.

Hughes: Wonderful! How is and was your German?

Gerbode: I'd taken two years of German at Stanford. I could just barely get by, but the conversational German came to me fairly easily, because of the German I had at Stanford. I can still converse in German to a certain extent if it isn't too complicated.

Hughes: And the lectures, of course, were in German.

Gerbode: The lectures were in German and I finally began to understand what they were talking about.

Hughes: Was pathology in Germany a different beast than the pathology you had been exposed to at Stanford?

Gerbode: Much more serious. Every person who dies in a hospital in Germany is autopsied and studied. It's a law, so it's a very important part of the whole structure of medicine.

Hughes: How much pathology had you had?

Gerbode: I'd had the regular courses in pathology in medical school, which was about a year. But in any event, at that time Nazism was just beginning to get pretty strong in Germany, and of course, Munich was where it all started. I began to notice driving into the institute in the morning that there were a lot of men out crawling through the mud and through barbed wire and marching.

One time the whole southern German army went on maneuvers and came back and paraded through Munich. They'd obviously been put through the most severe training you could imagine. I didn't want to go to jail over there. I wanted to finish my year, so we were very careful not to break any laws.

However, once we decided to go to Innsbruck, which is in Austria, and at that time the widow of the professor of surgery, Mrs. Ernest Ophüls, was over there, too. She was one of the great ladies of San Francisco. Even later in life she wore a dickie all the time. She looked us up as soon as I got there and was very friendly. She'd been going over every year to some place in Switzerland or Germany or Austria, and just happened to be nearby when we were there. So we went to Innsbruck together in my car. There was a rule that you couldn't take any German marks out of Germany. A lot of people were trying to smuggle them out in tires. We stopped at the border and were searched. I had about forty marks, which my wife had put somewhere on me as change, and without telling me. So there was a great deal of activity about that.

Hughes: It all came out all right?

Gerbode: Eventually. We had to appear before kind of a court in Munich a few days later.

Hughes: You were allowed to go on?

Gerbode: Yes. We had to leave the money and to pay a fine, and then come back, and it was all right. But Mrs. Ophüls was so indignant with this guy later in Munich that he finally dropped all the charges against me. She was such an aristocratic woman, who spoke perfect German. She just slayed him verbally.

Hughes: You were lucky.

Gerbode: Oh, lucky, yes. But you know, they took her off and searched her completely. They made her take her clothes off, and they took my wife in a back room and did the same.

Hughes: Why were they so concerned about the marks leaving Germany?

Gerbode: They wanted to have everything regulated and under control.

Hughes: What were your colleagues in the institute saying about the situation?

Gerbode: Periodically they would say, "Don't you think that Germany is much better than the United States?" Little things like that. Or they'd ask me if I wanted to go to one of these indoctrinating lectures. I went to a couple of them where they were talking about racial background. This was when they were talking a lot about Lebensraum and about the people in East Prussia and Poland being of German extraction, and they really ought to be with the German government, and "We need that land; they ought to be with us." There wasn't very much going on about the Jews that you could see on the surface, although there was an awful lot going on beneath the surface, I'm sure.

Hughes: But you weren't really aware of that?

Gerbode: Not in the beginning. But after I was there about six or seven months, I began to hear about Jewish people losing their property and jobs.

Hans Borst

Gerbode: Professor Borst had a son by the name of Hans. He was a charming young man. Then he was only about fourteen years old. [The senior Borst] began to worry that there was going to be a war. We began to discuss whether I would take Hans back with me to the United States. I said, "Sure, I'll take him."

Gerbode: This was his only son. He'd had a daughter who'd died of tuberculosis, and this was the child of a second marriage. He'd married a beautiful Hungarian woman who is still living in Munich, and they had this son Hans. Hans got all the beauty of his mother and all the savoir faire and intelligence of his father. But finally the professor decided that since he'd waited so long for a son, he just couldn't part with him. So we decided that we wouldn't take him to America.

Anyway, the story of Hans goes on and on. It's still going on, incidentally. Whether you're interested in that now--

Hughes: Why don't you tell me.

Gerbode: The war went on, and a couple of years later, Hans was old enough to be drafted into the army, so they put him in the paratroopers. He was such a strong fellow and a great skier, he went into a parachute outfit in Germany. They were fighting the English toward the end of the war, and his whole unit was captured. Then he was sent to an English prisoner of war camp, where he learned how to talk English perfectly.

After the war was over, he decided that he wanted to become a doctor, so he went to the university, and then he decided that he'd like to come to this country to go to medical school. So I tried to get him into Stanford Medical School, but the dean wouldn't think of taking a foreigner into medical school. He was a very strange man in that respect, not very big minded about such matters. However, another friend of mine by the name of Harry Beecher, who was professor of anesthesiology at Harvard, and I got him into Harvard Medical School. So Hans then went through medical school at Harvard, and was married to a girl with some Jewish blood. He came out with me for an internship here, and I got him interested in pulmonary physiology. He did some work studying lungs and later went back to the public health department at Harvard and took a fellowship in physiology, continuing his work that he had started here. Then he got interested in running a heart-lung machine, because he was very good at physiology, so he started doing some work on extracorporeal circulation there. Finally he went back to Germany and got a job with a professor by the name of Rudolf Zenker, who was then professor of surgery at Munich. Later on, when heart surgery began to become a serious objective, [Zenker] put him on running the heart-lung machine. This continued for several years, until he was really kind of a super technician for the unit. The reason [Zenker] kept him there was because he was so good at it. But that wasn't the way to become a surgeon or a professor.

Gerbode: I went back to Munich several times after the war and kept in touch with Hans. I finally went to Zenker and said, "You can't do this to him. You've got to get somebody else to run that machine and put him in the regular training program in surgery, starting with general surgery and going through the whole business." So he did. He stayed on in the department there in Munich for quite a while and divorced his wife. I won't go into why. Subsequently he got married to a charming girl and had another daughter. He has a son by his first wife, who is a very fine student, very brilliant. He'll undoubtedly be a professor one day. When they started a whole new medical school in Hanover, [Hans] applied for the job and got it. So he's now the professor of surgery at Hanover and one of the strongest academic surgeons in Germany. Big, handsome, wonderful guy. Speaks perfect English. Very intelligent. Reads a lot. I see him almost every year. When he comes out here, he stays with me, and I see him at various meetings.

So anyway, the year went by over there. I managed to stay out of trouble, and I think I learned quite a bit about pathology. My wife had a grand time. She loved shopping with the German hausfraus.

Hughes: Were you being singled out as a foreigner?

Gerbode: Yes.

Hughes: You'd be particularly watched?

Gerbode: Oh, yes.

Hughes: What were they worried about?

Gerbode: I guess they were afraid that we might take money out of the country or help people who were under surveillance. As an example, our cook's husband was a writer of some kind or other, and he was arrested because he wrote an article against the Nazis. He was put in a concentration camp. He stayed there for about six months, and they finally let him out if he agreed to write articles for the Nazis. They decided he might as well do that rather than die. So he came back to the house. He'd lost all his teeth. He looked like a walking cadaver.

Hughes: So you were beginning to--

Gerbode: Get the picture. Then another family whom we met there, a Jewish family, an ophthalmologist, wanted to get out, too, because he could see that his job in the university was going to be terminated before long, and he might even be shipped off. So we helped them get out of the country, and I got him a job here at Stanford.

Hughes: How did you manage that without the German authorities knowing?

Gerbode: I think at that time they were able to get out. If they didn't have a bad record, they let them emigrate. So that's what they did. She's an artist. She's still living. He died of cancer of the kidney after a while. I have at least twelve of her paintings at home. She still lives here. She married a publisher, Ed Grabhorn, in San Francisco. He subsequently died. She goes on painting.

Hughes: What was his name?

Gerbode: Sam Engel.

Hughes: Was that the beginning of the persecution of the Jews, as far as you knew?

Gerbode: No. When we were there, they began to take them out of positions of importance, demote them, or actually encourage some of them to leave the country. Those who were active, I guess, were simply locked up. You never knew about them. But I knew about the concentration camp outside of Munich. I knew it was there, because my cook's husband told me all about it.

Hughes: Which camp?

Gerbode: This was Dachau.

I didn't write any papers when I was in Germany. I certainly learned that if a political group gets control of every part of the government, they can be pretty terrifying.

Hughes: Were you specializing in any particular form of pathology?

Gerbode: No, just general pathology.

Hughes: What about Borst himself? What was his area of interest?

Gerbode: Tumors. He wrote a very good book on tumors.

Hughes: He was an MD?

Gerbode: Yes.

Hughes: Did he practice medicine?

Gerbode: Only pathology. He was a full-time pathologist and a very famous person. Because of his work on tumors, he was an international scientist, you might say. Another part of the Borst story is that he had a little place in the mountains where he used to go on weekends. The head deiner in the institute would drive him up there. He invited me up a couple of times to this lovely little place in the mountains outside of Munich. After the war, his car broke down. He was standing on the highway while a man was fixing it, and an American truck came along and hit and killed him.

Hughes: Does that take care of the University of Munich?

Gerbode: I think the other thing that I enjoyed very much there in Munich was the museums. Munich is an art center, always has been, for generations, I guess. Hitler, wanting to show people that he had an interest in art, built a whole new museum, with big pillars in front, advertising the fact that the Nazi party was for culture. It's still used as a museum now, but nobody knows that Hitler built it. I guess they all know, but they don't say anything about it.

Hughes: Was it very selective in the art that they exhibited?

Gerbode: Yes. The Nazis threw out all the modern paintings. They only kept classical and propaganda paintings.

Hughes: Did Munich perk your interest in the arts, do you think?

Gerbode: I think it probably did. I certainly paid more attention to it there than ever before. I also enjoyed a lot of the people, their lifestyle. They like skiing, they like music. The opera was a great feature there and still is. The opera house in Munich is one of the great opera houses in the world. It's the first one I'd ever seen where the stage could go up and down and turn. It was almost totally destroyed during the war. They rebuilt it and made it bigger, but exactly in the same form. It's really quite beautiful.

Surgical Resident and Instructor in Surgery at Stanford, 1937-1942

Gerbode: After I returned to California, Dr. Holman took me into the department of surgery as an assistant resident on the lowest level. So I started like anyone else, learning how to be a surgeon.

Hughes: Did you ever have any thoughts of going anywhere else?

Gerbode: Yes, I thought about it, but not very long, because I like California so much. This problem has come up many times, about my leaving San Francisco and going elsewhere. I didn't want to go anywhere else. If anyone says, "You've had a very successful career," I say, "Yes, and I didn't even go to Harvard." [laughter]

Hughes: We should talk about the fact that you are West Coast. My understanding is that most of the early work in cardiac surgery was pretty much East Coast oriented.

Gerbode: The first things were all East Coast. There's no question about it. The first patent ductus and first coarctation were done by [Robert Edward] Gross in Boston. The first mitral valve operations were done by [Charles Philamore] Bailey in Philadelphia and [Dwight] Harken in Boston. I can assure you that we followed very quickly thereafter, as did others.

Hughes: Is that just the fact that these were traditional medical centers, and the ones in the West were new?

Gerbode: Yes, I think also the fact that they really had bigger and more elaborate departments. The East really held the leadership in medicine for quite a while. They're still great, of course, but there are other smaller places that have done exceedingly well, even though they aren't in the so-called mainstream of American medicine.

Hughes: Was Stanford medicine always research oriented?

Gerbode: No, it wasn't, [although] it had good research going. [There was] a big research building which is still up the street, called the Stern Laboratory. There were people on the faculty who were always busy with one kind or another of research, and some basic discoveries were made in the medical school. But overall, I think the emphasis was on good clinical medicine.

So anyway, I came back as an assistant resident and had to learn how to be a surgeon. You learn by assisting, working up the cases. I went right back to the laboratory again, though.

Hughes: Was this Holman's laboratory?

Gerbode: This was mainly Reichert at that time. I watched what Holman was doing and sometimes would help, but it was Reichert mainly who was doing most of the laboratory work.

Hughes: Holman was mainly a surgeon.

Early Cardiovascular Surgery

Gerbode: Yes. Reichert was, too, but Holman was running the department. He had more administrative work to do. During those few years we began to do more major vessel cases. Then later on we began to do mitral cases and patent ductus and coarctations. These were some of the early operations. I was able to assist on them, and later on able to catch one every once in a while for myself.

Hughes: You were allowed to do these big operations?

Gerbode: Later on, after I was there for two or three years.

Hughes: What was the success rate in those early days?

Gerbode: I don't know that we ever lost a patent ductus. I think I only lost one coarctation out of a lot of them. The mortality rate for mitral operations was about 5 percent, something like that. But they weren't open; they were closed mitral operations. They were all done with instruments or an index finger in the heart.

Hughes: The valvulotome?

Gerbode: Yes. I devised an instrument for cracking the valve, too, which we used in many cases. You'd put it in through the apex of the heart, and then you'd feel it in the atrium and then get it in the valve and open it. That would split the valve so it could move again.

Hughes: Does it have a name?

Gerbode: They called it a mitral valve dilator. It's still sold, as a matter of fact.

Hughes: Did you patent it?

Gerbode: No.

Hughes: The name of the game then was to operate as quickly as you could?

Gerbode: No, the name of the game by then was to operate cautiously and selectively. For example, the first criteria we set up for mitral valve operations were that the patients shouldn't be over forty-five years of age, they shouldn't have this and shouldn't have that.

Hughes: Was that social usefulness, or was that just chances of survival?

Gerbode: Chances of survival. We thought if they had atrial fibrillation, which is very common, that it was too dangerous. But later on we found that 90 percent of the patients we were operating upon had atrial fibrillation. It was just something that we had thought of as being the safest thing to do in the beginning.

Hughes: You mean in the normal course of events they would incur fibrillation, not just when they were being operated upon.

Gerbode: That's part of their disease.
[interruption]

Gerbode: It was picked up.

Hughes: It was picked up?

Gerbode: Yes, you could make the diagnosis easily. But they thought that maybe it was too dangerous to operate upon people who had it.

Hughes: But you found that that wasn't the case.

Gerbode: Later on. It wasn't the case at all.

Hughes: It seems to me in any surgery there's always that very fine line of decision in regards to choosing patients that are seriously ill. How ill should they be for an [operation] that is still experimental?

Gerbode: You proceed cautiously, and you keep operating upon something that's a little more difficult. Then if you begin to be successful in doing it, then that encourages you to take on more. In the end, you operate upon very sick people.

Hughes: What was the rest of the medical profession saying about these operations?

Gerbode: The cardiologists were very conservative about mitral surgery.

Hughes: Was it Holman who was doing the heart surgery?

Gerbode: Yes, Holman was.

Hughes: Reichert didn't--?

Gerbode: No, he didn't.

Hughes: Can you describe how an operation for patent ductus was done?

Gerbode: [Now] it's done routinely by residents. A patent ductus is a connection between the pulmonary artery and the aorta. [The ductus arteriosus is] a tube which is present in the embryo, and that's the way the blood gets from the mother into the child. Within a few weeks after birth, the duct closes. If it doesn't close, then it produces a physiological change which is not very good for the patient and can produce heart failure.

The operation consists of a left thoracotomy, exposing the connection which is right near the heart. Initially it was just tied with a couple of sutures. But later on there were perhaps 5 percent recurrences when this was done, so then surgeons began to divide it, by first putting clamps on it, then cutting between them and sewing each end.

Hughes: The actual suturing had to be very quick, didn't it?

Gerbode: No. The ductus doesn't do much to the rest of the circulation when it's clamped off.

Hughes: You weren't actually operating on the heart itself?

Gerbode: Not in those days. It wasn't until 1953, more or less, that we started on the heart.

Prewar Cardiovascular Research

Hughes: Were you doing research during this time as an assistant resident?

Gerbode: Yes, I always had a little something going.

Hughes: What was going in 1937-38?

Gerbode: I was trying various things on the heart, producing conditions in an experimental animal which were like those found in the human, and then measuring them and seeing what we could learn from them.

Hughes: What types of things?

Gerbode: Experimental hypertrophy of the heart, for example, making the heart muscle bigger [on] one side or the other.

Hughes: I know there were some postwar papers about ligating one of the great vessels in puppies.

Gerbode: That was the kind of work.

Hughes: Did that start before the war?

Gerbode: No, this was after the war, when I came back. Then I wanted to produce a cyanotic animal, which had only been done once before successfully. So I finally was able to produce a small collection of blue animals, because we were interested in blue babies by that time. I finally published that work. It didn't seem terribly important, but it was important for me to be able to do it. But it's a funny thing that when the Swedes gave me an honorary degree* and I stood up and listened to the eulogy which described this honorary degree, they mentioned this work. They dug it out and said that's important. I didn't think it was so important.

Hughes: Did other people think it was important at the time?

Gerbode: I don't think so.

Hughes: How did you produce cyanosis?

Gerbode: I switched the inferior vena cava from the right side of the heart to the left side of the heart.

Hughes: What happened between 1938 and 1942 when you went off to war? You were still an assistant resident for that whole period?

Gerbode: I'd finished my residency, and I was already an instructor on the faculty.

Hughes: That's right. In fact, according to your curriculum vitae, from 1937 to 1938 you were an assistant resident in surgery as well as an assistant in surgical research.

Gerbode: That's because I was always up there doing something in the laboratory.

Hughes: Then from 1938 to 1939 you were an assistant resident in surgery, 1939 to 1940 a resident in surgery.

Gerbode: Yes, the chief resident.

Hughes: Did that mean an increase in operating opportunities?

*Dr. Gerbode received the M.D. degree, honoris causa, from the University of Uppsala in 1965.

- Gerbode: Oh yes, because when you're a chief resident, you do all the operations on the clinic service, unless you think you shouldn't be doing it by yourself. Or the chief would help you do a difficult case.
- Hughes: But you were expected to be able to do all of the cases?
- Gerbode: Expected to do most of them.
- Hughes: What about these very innovative ones?
- Gerbode: If you were doing an innovative one, you'd usually have one of the professors scrub with you.
- Hughes: Were you considered a cardiac surgeon at this time or a general surgeon?
- Gerbode: General surgeon. At that time, there wasn't really a specialty of thoracic surgery. It wasn't until after the war that they began to recognize the subspecialties.
- Hughes: Because you and Holman were particularly interested in the heart, was Stanford developing a reputation for heart surgery?
- Gerbode: I think Holman really developed a reputation for being interested in circulation and great vessel, not heart.

Premonitions of World War II

- Hughes: The next step is the war.
- Gerbode: Having been in Germany before the war started, I could see that was coming. One taxi cab driver there said, "One day Austria will go. The next day we'll take Poland just like that." They'd figured it all out. Austria did fall while we were there, and Poland came not too long afterwards.
- Hughes: But that was not the thinking in 1937 when you returned to this country, was it?
- Gerbode: People had their heads buried in the ground. When I told them what I'd seen them doing over there, they thought I was praising them. I said, "I'm not praising them. I'm merely telling you what I saw."

- Gerbode: The same thing happened to Lindbergh, whom we met at a reception in Berlin. He'd seen the preparations for war. He came back and told people about it, and they accused him of praising the Germans.
- Hughes: That must have been frustrating for you, seeing the writing on the wall.
- Gerbode: After a while I just decided I wouldn't say anything about it. But [I] saw this army actually drill down to the bone, and saw their tanks, and how they were teaching all these youngsters to drive jeeps and cars and everything. You could see them in the fields learning how to go through mine fields and through barbed wire. They weren't doing that for football.
- Hughes: Did you also feel that the United States would have to become involved?
- Gerbode: Eventually, sure.

II SURGEON, U.S. ARMY MEDICAL CORPS, 1942-1945

[Interview 2: August 1, 1983]##

Decision to Go to War

Gerbode: [Anyone] around the time of 1938 to '42, would wonder whether or not we were going to get into this war which Hitler had started. But having been there [Germany] for practically a year and having seen the preparations and having heard what the Nazi ideology was turning out, it was quite apparent [to me] that we would have to get into the war eventually, because there would be no stopping Hitlerism if he won the war in Europe. The next thing would be South America, and then Lord knows what else.

So I decided pretty early that I would have to get into it. I suppose in my position I could have stayed home, stayed in the medical school and taught like some of the men did. It was necessary for some of them to stay home to keep the medical school going. Also having a rather large family, I could have used that as an excuse for staying home, too. But I wanted to be counted. My thoughts came to a head in New York when I heard a lecture by a very distinguished English surgeon by the name of Sir Gordon Gordon-Taylor. He was a very fine, beautiful gentleman. He came to New York and showed pictures of the bombing in London and the problems the English were having with fighting the Germans. His mission was, of course, to get Americans more interested in fighting Hitlerism.

I also was very impressed with The Life of Harvey Cushing, which is a biography written by one of Harvey Cushing's students, [John Fulton]. In it it was quite apparent that an affiliated team of doctors, in that instance from Harvard, was able to accomplish a good deal in a war effort.

Preparations in the U.S.

Gerbode: At this time the Stanford medical faculty here was putting together two teams, one a navy team, the other army. This subsequently developed into a rather good-sized effort of Stanford physicians and surgeons.

Hughes: Was that a spontaneous effort?

Gerbode: Yes. I think they felt they wanted to get into the war and get in as a group. The army group was brought together by Stanford doctors mainly from the San Francisco General Hospital. I could have, I suppose, joined either of these two efforts, but I decided that, from what I had read, it seemed to me that a surgeon would have more to do in the army than in the navy, and I wanted to be busy and to participate. So I joined the Stanford army unit.

Hughes: Were you thinking of yourself as a thoracic surgeon?

Gerbode: I was trained as a general and thoracic surgeon at that time.

Hughes: So you were thinking still in terms of general surgery in terms of the war?

Gerbode: I was just thinking in terms of getting into the war and being a surgeon. So we went into the reserve and waited until we were called. The call came in early 1942. Something like forty-five doctors and fifty-two nurses had joined the reserve unit. They were all called together at one time. I was lucky, because I had finished my training and had enough experience so that I was given a major's commission, which was quite a good commission at that time.

We were sent up to Ft. Lewis, Washington, where we went into basic training for about six weeks, had to do all the same things as the infantry. Several of the doctors who were not very physically fit had trouble coping with this training. I must say that I didn't do terribly well, but I didn't fall by the wayside anyway.

Then we came down to Ft. Ord, near Monterey, and there we were supposed to get ready for some sort of an amphibious landing. They shipped out the complete equipment for an evacuation hospital. The equipment when we opened the boxes was World War I equipment. It was just terrible. I was given the job to sort this stuff out and package it so it could be landed somewhere and put together again

Gerbode: as a complete hospital. I was glad to do this, because otherwise there wasn't much else to do at Ft. Ord except hike and eat and complain about the army. [laughter]

So I set up really what amounted to a construction unit, making boxes and things to put all this stuff together. I kept asking the commanding general down there for more and more material, and once he got so fed up with me that he said to the man on the phone, "God damn it, don't give him what he wants. Give him what he requires." [laughter] Well, I felt that I did require this stuff, and we got it finally.

The unit was put together just before the Dieppe raid. I think that the idea was that we were going to go to England and then follow the Dieppe raid into Normandy if it was successful. But, as you may recall, the Dieppe raid failed. It was kind of a disaster. So instead of going there, we were sent to Virginia for further waiting to see what would happen next. Meanwhile all that equipment which we had put together had gone to England, which was lucky, because it wasn't any good anyway.

Before that we had a very brief period in New Jersey where we were supposed to be staging for the leap to England, but when the Dieppe raid failed, we were moved down to Farmville, Virginia. There we put together another hospital, but this time with more modern equipment. We had the experience, so it was easier to do it the second time.

Hughes: This was a complete hospital?

Gerbode: A complete hospital, tents right down to the bedpans. Everything. It came in boxes, and then we had to sort it out and put it together. We would have an operating room set of boxes and an intensive care room set of boxes and so forth. Why the commanding officer put me in charge of this, I don't know, but later on I think he had a feeling that I had logistic ability. In any event, I didn't mind doing it.

To do this, I found a couple of very fine noncommissioned officers to help. One was a fellow by the name of Carson, who was a very fine carpenter. The other was a fellow by the name of Querhammer, who was a farmboy from the Middle West. They turned out to be excellent workers and very enthusiastic about the project, and really, with guidance, put it together. So then we had another complete hospital. We stayed there until the army decided where we were going to go.

Casablanca

Gerbode: As it turned out, some time later we were sent to Africa and landed in Casablanca. It was a gigantic convoy across the Atlantic, the second big convoy to go into Morocco. We landed in Casablanca a day before Christmas [1942]. You think of that part of Africa as being warm all the time, but in the winter it's very cold. Our equipment was scattered all up and down the coast. It took weeks to get it together again. We had no tents, for example, when we landed. We were put in a field next to an Arab cemetery. We borrowed some hay and a few tarpaulins from another army unit. They were given to us very reluctantly, but we improvised some sort of a tent to cover us during the night, and slept on hay until we could find some of our tents, which took a couple of weeks, really, to get organized.

Hughes: There were a lot of other American units in the area?

Gerbode: A little bit later on [General George] Patton arrived with his tank division, and they were billeted right across the road from us. Patton, of course, was a very amusing but very good general. I think he was a fine general in the field, a terrible general at headquarters. He issued an order, for example, when we were there, that the knit wool cap, which went under the helmet, should not be worn without the helmet. We were bombed nearby by some German planes a few nights before, so we were issued an order to dig slit trenches in case they came back again. One of our captains, who has since died, was shoveling out there with a knit wool cap on when Patton came by. He stopped his jeep and got out with these big revolvers on each side, stomped over and said to this fellow, "Stand up. Are you an officer or not an officer?" "Yes, Sir, I'm an officer." "What have you got on your head?" "I've got a wool cap." "Take that thing off, and in the future behave like an officer." He was so furious that he went through his own billet across the road and bawled everybody out everywhere he went. He bawled them out for hanging laundry outside their pup tents and everything else. We were near him several times.

In any event, we stayed in Casablanca for quite a while and took care of troops or injuries which were evacuated from Algeria and northern Africa. A lot of Germans had been wounded previously in the fighting in Russia, and they'd come in with old shrapnel wounds and old pieces of metal in their bodies, in addition to the new metal. A rather sorry lot of soldiers, I must say.

Gerbode: We set up a very good tent hospital and realized for the first time that you could do very good surgery in a tent hospital.

Hughes: Had you worked with most of this team before?

Gerbode: No, I hadn't. We were all from around here. There were several men from the University of California. But they were all highly trained. They were all residents and had good training in surgery. Carl Matthewson, who was the chief surgeon, was particularly good because he had had special training in the treating of fractures. Since so many of the injured had fractured bones, it was very useful to have him establish methods of treatment for the unit.

Hughes: Were you doing vascular surgery?

Gerbode: We did everything. Anything that was on the table, we did, including brain surgery. I did brain surgery and spinal cord surgery. But we weren't doing very much reconstructive vascular surgery at that time. That came later on in the war. In retrospect, of course, we were not very quick to realize that a lot of this could be done.

Hughes: When you say that, are you thinking in terms of grafts?

Gerbode: Grafts and repairing arteries, and using vein grafts to insert for deficits in an artery.

Hughes: Not too much of that had been done anywhere.

Gerbode: No, that's right. It was really developed at that time. But we were kind of silly not to think of it, you know.

Hughes: Do you think the war gave an impetus to vascular surgery?

Gerbode: Oh, yes. But actually, vascular surgery in the front areas really was developed in the Korean War.

Hughes: That late?

Gerbode: Quite a bit later. Some repair work was done in old injuries in base hospitals after they had been evacuated from the front.

Andrew Peatroscka

Gerbode: Anyway, long before going to Africa, I had once been to Poland to a little village called Druskininka. My wife and I went there to visit a classmate of hers. That's a very interesting part of the world, because it had been overrun by Germans and Russians in several wars before, and there were a lot of old houses with bullet holes in them, and so forth. It was sort of a haven for Jewish people. This particular family we visited were not Jewish. They were Polish and had a violent history, as a matter of fact. The mother of the girl whom my wife had gone to school with had, we think, killed her first husband in a violent encounter. Grajina, the girl, had married a Polish army officer in the regular Polish army, who'd been in a saber duel and had the end of his nose sliced off. When they put it back on again, they put it on a little bit crooked, so the tip of his nose was turned about thirty degrees. [laughter]

Anyway, it was a very interesting time going there. Andrew was a very handsome, intelligent young man, the brother of Grajina. He came in late one night, and we asked him where he'd been, and he said, "We just had a little pogrom."

Now to come back to Casablanca: I'd operated upon a German and reconstructed his nerves and arteries, and I was rather curious to know how he was getting along. So I got permission to get a jeep and go to the prisoner-of-war camp near the hospital. I saw the patient, and his wounds had healed, and he was coming along pretty well. As I walked out of the prisoner-of-war camp, a Polish officer came up to me, and he said, "Are you going to Casablanca?" I said yes, and he said, "Could I get a ride with you?" I said, "Sure, get in." So he got in, a nice looking fellow, and I said, "Where are you from in Poland?" He said, "I'm from Druskininka." I said, "I know where Druskininka is. It's near Wilno." I said, "Did you ever know a Peatroscka family?" He said, "I'm a Peatroscka. My name is Andrew." Here was Andrew, the brother from Poland. I had met him casually outside of a prisoner-of-war camp in North Africa!

Then subsequently I learned the story of what had happened to Andrew. He had joined the Allied forces in Europe and was chased out of Europe with the English and went to England. There, because of his language ability and intelligence, he was trained as a paratrooper, and also trained in observation and other things. So one night, when he was fully trained, he was put ashore from a submarine near Algeria. He was supposed to disappear

Gerbode: into the countryside and then through a network of intelligence people send messages back as to the number of planes going in and out of a certain airport and various items of that type, which he successfully did, and he was never captured by the Germans. Finally, when the Allies landed in North Africa, he said, "I was a member of the welcoming committee." His job when I met him in North Africa was to interrogate Polish prisoners who might defect when they got well and join the American forces. That was what he was doing actually at that prisoner-of-war camp.

I've subsequently met Andrew several times. He'd gotten rather fat. He was trained as an engineer. The last I heard of him, he was in South America somewhere. The mother who was there at that time, lost her second husband. She came to the United States and married a Kellogg, the very rich man who owns much of the cereal business. She then moved to Minneapolis or St. Paul and lived in rather splendid circumstances there, but never would help her children. I think Grajina now is working in a restaurant in London.

Palermo, Sicily

Gerbode: In any event, we stayed in Casablanca until the Germans were chased out of North Africa, which took about seven or eight months. Rather heavy fighting. Then we went to Bezerte, which is in the north, and staged in an olive grove, got all our stuff together, and then finally we were put on a boat in a convoy and went to Palermo, Sicily, the Germans having just been driven out of there.

There was a bit of bombing after we got there, but not very much. Our billet as a hospital was in the University of Palermo Medical School building. The place where I slept was the professor of orthopedic surgery's office. That was quite luxurious compared to the other things we'd done. We took care of a lot of Italian wounded there and a lot of Italian prisoners of war, who defected by the hundreds. They were pretty tired of the war even then and were easy to capture.

Hughes: Were patients coming in in rushes?

Gerbode: We had to chase the Germans off of Sicily, so there was a lot of fighting right up to the Straits of Messina. They were treated in a field hospital first and then sent to us. Sometimes they came to us straight from the front, but usually through a field hospital.

Hughes: Would a field hospital do any operating?

Gerbode: Yes. They were doing life-saving procedures. If the patients weren't terribly bad off, they were shipped right back to us, and we would operate upon them and take care of them. There was a lot of illness. There were a lot of soldiers with hepatitis and gastroenteritis and infectious diseases of one kind or other. So we had a lot of sick soldiers.

Hughes: Typhus was a problem during the war, wasn't it?

Gerbode: A bit, yes. There were a certain number of cases of typhus. There were a certain number of cases of tetanus, particularly among the Germans, and some of the Italians, because they had not given all their soldiers tetanus antitoxin or tetanus injections.

Hughes: Was that because they didn't have enough to go around?

Gerbode: I don't think they had enough to go around, and they perhaps weren't so concerned about it. But there were a few cases.

In any event, Patton was there, too. His billet was in Palermo. He had a castle there when he was sick a good deal of the time with a kind of bronchitis and other things, so he didn't really get up to the front at all. Our [medical] people would go see him and take care of him. But when it was quite apparent that the Germans were going to be driven out of Sicily, he put on his big helmet and got his guns and went up in his jeep, as soon as the photographers were there. He made a triumphant entry so that the news media would have pictures of it back home. I don't mean to say that we didn't admire him. I really think that Patton was one of our greatest generals. He was a terrible person when he was nonactive.

Hughes: Was he bad-tempered?

Gerbode: Well... What he did later on in Europe was very remarkable. If he had had his way and hadn't been stopped by some of the other generals, I think the final solution of the war would have been completely different.

Hughes: What?

Gerbode: He would have taken all of Czechoslovakia and Yugoslavia, I'm quite sure. But he was stopped several times.

Gerbode: Anyway, we stayed in Palermo for quite a while. We must have been there about five or six months. Then we had to somehow get a landing in Italy, so they landed us just south of Salerno. General Mark Clark was in charge of the operation there. They just barely made it, as a matter of fact. But they finally did get a foothold, and also at Anzio. At Anzio they were surrounded by the Germans and took an awful beating.

Hughes: How were you getting news about all this?

Anzio

Gerbode: Through the wounded soldiers who came back. Anyway, we stayed in Palermo until it looked as though we were going to chase the Germans north. Then they brought us over just south of Anzio. Then we went into Anzio and relieved all the other hospitals, took all their wounded and let them go on up toward Rome. Anzio was an absolute stinkpot. There were so many thousands of soldiers in a very small area, that about every hundred feet was an old latrine. We had to sleep in a dugout below ground, which smelled terribly, because the latrine odors seeped through all the soil. It wasn't very pleasant.

Hughes: When you were moving like this, were other Americans being relieved?

Gerbode: Yes.

Hughes: What was the rationale for that?

Gerbode: There were different kinds of hospitals. There were field hospitals, which were smaller units. They were up closer to the front than we were usually. We were a big unit. We had a capacity of seven hundred and fifty beds if we used all of them.

Hughes: So each time you made one of these moves, you were taking all the contents of your hospital along with you?

Gerbode: Yes, everything. Which meant truckloads full of boxes and stuff.

Hughes: How good was your equipment proving to be?

Gerbode: It was fine. The replacements were excellent. They finally sent us good generators so we could be self-sufficient with electricity, and the kitchen equipment got better all the time.

Hughes: What about the medical equipment itself?

Gerbode: The medical equipment was all right. We had to improvise our operating rooms, though. What we did was make floors, so we could put mobile floors in sections and put them on a truck. Then when we came to a new place, we could just lay down these floors and put a tent over the top of them. That gave us a pretty good operating room complex.

Hughes: You could maintain the usual sterile conditions?

Gerbode: Yes, it was surprising. We had the same rules in the operating room as we had at home. It was harder to maintain them, though, because you couldn't keep all the flies out, and there was a certain amount of dust around. But it's surprising how much you could do, if you observed certain strict rules about the operations itself.

Hughes: Early in the war there were no antibiotics, were there?

Gerbode: No, there weren't. We had sulfanilamide. Early in the war, it was thought that if you put sulfanilamide in the wounds, this would prevent infection.

Hughes: You mean in powder form?

Gerbode: In powder form. But actually that proved not to be very good.

Hughes: It wasn't effective?

Gerbode: It wasn't effective, and I think it actually in some cases retarded healing, too.

Hughes: And that was only effective against certain bacteria anyway, wasn't it?

Gerbode: That's right. It wasn't until later that we got penicillin. That changed things.

Hughes: This was just a year or so before the war was over, wasn't it?

Gerbode: Yes.

Hughes: That must have made a tremendous difference.

Gerbode: It made a big difference, yes.

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Wound Treatment

Gerbode: A lot depended on how you treated the wounds. You see, all the wounds were left open, except the abdominal, chest and brain wounds. The rest of them, the flesh wounds, were all left wide open. The big thing was to let them granulate for a while, and then do secondary closure. That was something that really was developed on a big scale in that war.

Hughes: That wasn't a prewar technique?

Gerbode: Not so much. So when we did the original debridement of a wound, we tried to debride it in such a way that ten days later or two weeks later, it could be closed loosely. We'd try to think of which way we'd make the excision so it would be easy to close later.

Hughes: This was so that the wound would drain?

Gerbode: Yes. It would have to stay open until it was not grossly infected. Of course, it was still somewhat infected, but as soon as there was healthy granulation tissue, not very much in the way of secretions, then you could close it loosely. That saved a lot of time. There were a great many things about the war which we learned which were new. That was one of them, secondary wound closure.

Hughes: Did you carry on that technique after the war?

Gerbode: It was used later in the war and in accidental injuries.

In any event, we stayed in Anzio, which was a smelly, rotten experience, and cleaned up the patients who were there, shipped them back to base hospitals or put them back into active duty. Meanwhile, they were pushing the Germans back toward Rome. You may remember Cassino, the big battle there where some of the Germans were in this monastery on top of a hill, and it was devilishly hard to get them off those buildings. They just were terribly resistant, and it was terribly hard to get at them. This

Gerbode: is where the Hawaiian-Japanese division did such a noble job. These were native Japanese-Hawaiian from Hawaii who had formed a unit. They were very brave and did a tremendous job at that point in the war.

Finally the Germans were driven up north. They were pretty upset with the number of Italians who were defecting or giving up. They got pretty stern and strict with them. We don't know all the things they did to try to keep the Italians fighting, but they tried everything. They were finally driven back over the Brenner Pass into Austria.

Salerno and Southern France

Gerbode: We stayed there for quite a while, and then we went back to Salerno, which is where the original landings were. Here we took care of the troops while they were training for the landing in southern France. That was mainly station hospital kind of work, taking care of whatever injuries they had or other things.

Hughes: You mean not combat.

Gerbode: Not combat. They were staging for the landing in southern France. The other big units were staging in England, too, for the landing in Normandy at the same time.

Finally, everybody was ready. The artillery was ready. The infantry was ready. So we all got in a gigantic convoy in Salerno and started going toward southern France. When we got to southern France, we didn't know how many Germans were still left, so they just blasted Saint-Tropez, that beautiful place. Every house that was in view that looked as though it might have a machine gun in it had a shell go through it. But we landed without much resistance. The Germans, meanwhile, had gotten pretty weak and had started evacuating up toward the north.

Then after getting there, we set up a series of hospitals, and I was then appointed the job of selecting the place where the hospital should be and getting it started, again this darn logistic job.

Hughes: [laughs] You had a reputation.

Gerbode: One of my problems in the army was to keep that logistic number off my records, because I felt that if I had a logistic number, I'd be taken out of the hospital and put back in headquarters somewhere in a planning unit. I didn't want to do that. So I got to know the chief sergeant in the office who controlled these numbers-- they were called MOS numbers--and bribed him to keep that MOS number off my file. Which he did. [laughs]

Then we started chasing the Germans up the Rhone Valley. We'd no sooner get a hospital set up than they'd say, "You've got to move it now. Tomorrow we move up another fifty miles or so." We set up three hospitals before we got to a little town called Carpentras. Now the story goes back to before the war again.

The Story of Carpentras*

Gerbode: My wife and I got to know Lily Pons and Andre Kostelanetz quite well. They came to the Hawaiian Islands and had part of a summer with us. Then periodically when they came to California, they would stay with us or we would see them.

They had a friend by the name of Bill Schweitzer in Elizabeth, New Jersey, who is a short-wave expert and was president of a large paper company which made paper for Chesterfield cigarettes. The linen for their paper largely came from southern France. I didn't realize that linen was such an important part of making cigarette paper, but apparently it is.

In any event, as things got closer to our being involved in the war, I would see Andre and Lily once in a while in New York, and also got to know Bill Schweitzer pretty well, and actually visited him in New Jersey. Then when we got into the war and I got a commission, it was apparent that I was going to be sent with our unit to the European theater one way or the other, and Bill Schweitzer also had joined the army. He once said to me in New York, "If you ever get to southern France, we haven't heard anything from our factory, which was taken over by the Germans, please look up our manager, we don't know what happened to him. His name is Mr. LaDerriere. Tell him that our family is fine and that you'd like to have him get in touch with us."

*The section on Carpentras was moved from the interview on 10/23/83.

Gerbode: So the war went on, and we went through Africa and Sicily and Italy and finally landed in Saint-Tropez with an invading army and worked our way up through southern France through the Rhone Valley, making two or three stops, chasing the Germans up there, and finally landed in a small village. After setting up the hospital several times for a period of a few days or a week and then tearing it down and moving on, finally I picked a field near a village in southern France. After getting things organized and deciding where the tents would go up and so forth, I was sitting on my cot, I pulled out my wallet, and saw a note to look up somebody in Carpentras. So I asked somebody near me if he knew where Carpentras was, and he pointed to a village in full view a few miles away and said, "That's Carpentras right over there."

So I got on my bicycle, which I had secretly stored with the surgical equipment, and went over to the village and asked somebody if they knew where Mr. LaDerriere lived, and he said, "Yes, that's his house over there." So I went over and rang the doorbell and Mr. LaDerriere opened the door, very surprised to find somebody from America. Actually our hospital had liberated that town, in a sense. Non-fighting liberation, but we were the first American troops to stop near there and do anything about the little village. So he was overwhelmed with joy to find the Germans had been chased away and to find somebody who knew his boss.

He had a rabbit which he cooked. We had some wine and talked a good deal. He spoke very good English. Then we ceremoniously took Hitler's picture off the wall and put up his father's picture, which he had secretly stored in the attic. A fine bearded Jewish gentleman. Big tears flowed during this emotional ceremony.

I also took a trip later on over to the factory where they made paper. But the main thing was that he introduced me to the mayor and photographer of the town, both very good friends of his. We had a meal or two there as well. Actually, our unit didn't stay there longer than a week or two, because we were chasing the Germans pretty hard at that point, and finally ended up quite a bit further north. But anyway, we said fond farewells, and I said I'd be back one day to see him.

So after the war I was teaching in London and had a vacation period and decided to visit some friends near Ez-Sur-Mer on the Mediterranean. My wife meanwhile had gone down there to stay with them. I had my oldest son with me in London, the one who was killed at Stanford. We decided to drive through southern France and go to Ez to meet my wife and daughter. We stopped in Carpentras

Gerbode: on the way down, having told them that I was going to be there on a certain day around late afternoon. Well, we got there and they laid on the most terrific banquet you've ever seen in your life. The mayor, the photographer, Mr. LaDerriere, and a couple of other friends of his took over a whole restaurant. We started eating about four o'clock in the afternoon and had about ten courses. Each one we thought was going to be the last, and it wasn't. With all kinds of wine and everything. We finally got out of there at nine o'clock. And I still had to drive all the way down to Ez. But anyway, it was a great occasion with speeches and all this sort of stuff. We set out for Ez about nine o'clock. About a mile out of town I stopped and Alec got rid of the entire dinner. Then he felt much better.

We finally arrived at Ez about one o'clock in the morning, and my wife and the hostess were still waiting outside on the terrace for us to arrive. We had a little confusion in finding the place that delayed us about half an hour, but we got there safely. So that is the story of Carpentras.

Hughes: How is your French?

Gerbode: No good.

Hughes: Was this going on in French?

Gerbode: They were all talking in broken but understandable English.

So we stayed in Carpentras for about two weeks and gradually went up north in several hops until we got to Epinal and set up a hospital in an old French barracks.

Field, Mobile and Base Hospitals

Hughes: When you were moving so often, what happened to soldiers that were wounded and needed care?

Gerbode: We would take care of any freshly wounded patients, and then the ambulances would take them to an evacuation port where they were put on a ship and sent home, or sometimes flown home in ambulance planes to base hospitals in the United States or England.

Hughes: But at some point it seems that you would be in transit when patients were needing care.

Gerbode: There were field hospitals right close up to the mobile [hospital]. Then as we penetrated further, the army set up our own general hospitals. We had a big general hospital in Italy and later a big general hospital--they call them a base hospital--in France as well. We would send [the wounded] back to these base hospitals where, if they were recoverable and could be put back into combat duty within a reasonable time, they stayed until they were ready to go back.

Hughes: So there were about four different types of hospitals?

Gerbode: We had special hospitals. We [also] had [special] groups. Actually, these were teams which went into field hospitals and operated as a team. We had a chest unit, for example, which some of my friends were associated with. We had neurological outfits. They would go into a place where there was heavy fighting and take care of these specialty cases.

Hughes: How broad an area would a team like that cover?

Gerbode: They would set up close to a combat area. They called them auxiliary teams. We had maybe three or four of them in North Africa and the same ones then went into southern France later. They were mainly operating teams, teams that were operating on special cases. They didn't take care of all these special cases, though, because some of them came to us anyway.

The German Retreat to the Vosges Mountains

Gerbode: Meanwhile the Normandy landing had taken place, and that really made the Germans think twice about what was going to happen, but they hadn't given up at all. We chased the Germans back, and they got to the Vosges Mountains, where they consolidated everything.

On the way up to the Vosges Mountains, the Germans who'd been in the southern part, from Saint-Tropez up to the Vosges Mountains, had lost a lot of their equipment and trucks, and the whole roadside all the way up was littered with wagons and dead horses and wounded, and everything else, because actually they were just sitting ducks for the air force. All it had to do was go up and down and strafe them. Their casualty loss was terrific. They lost most of their equipment which they'd had down there, which wasn't very much, I guess. But they got enough of it together to set up a pretty strong line in the Vosges Mountains.

Gerbode: Then we were stuck there trying to get them out of these mountains for quite a while. We had very heavy casualties there. We were extremely active. But luckily, we had this old French barracks in Epinal set up as a hospital. When I went there to set this place up, the German operating list was still there in German script on a chalkboard. There was potato salad all over the place. Mattresses were bloody and dirty. I had them take everything out of the place, put it in the yard, pour gasoline on it, and burn it all up. Then we moved in our own equipment.

Hughes: Did it make any difference in any way whether you were dealing with an American or a German wounded?

Gerbode: No, we treated them all exactly the same. Actually, there were always other nationalities around who were watching out for their people. For example, there was always a Polish liaison officer who would watch out for Polish prisoners or wounded and try to see how they felt about the war and see whether or not they were good enough to fight for the Americans when they got well.

Oh, incidentally, at that time this Mr. Schweitzer whom I mentioned before had gotten into the army and was in charge of rehabilitating prisoners of war or moving them out to one place or another. He found out where I was, and he came to the hospital, and he didn't recognize me, I was so thin. [laughter] I didn't realize how thin I'd gotten.

Wartime Surgery

Hughes: What sort of hours were you working?

Gerbode: Sometimes we'd work almost twenty-four hours, if it was very busy. Then we'd just flop down and get some rest and start over again. At other times, we wouldn't have anything to do for days and days.

Hughes: Were you learning a lot?

Gerbode: Harvey Cushing said, "War surgery either makes or breaks a surgeon." If he goes into the war not knowing much surgery and does a lot of war surgery, he compounds his mistakes and comes out really worse off. But if he's well-trained and applies his good training to war surgery, then he'll come out knowing more than he did when he went in. I think that's true. In our unit, which was mainly an

Gerbode: academic unit, we kept applying our training. I think it was quite apparent, and word would get back from base hospitals, that they liked the way we treated the wounds. They had to cope with fixing them up afterwards.

Hughes: Were you having to operate much more quickly than you were used to at home?

Gerbode: Oh, sometimes you'd stay there for twelve hours and do twelve, fourteen, fifteen, or twenty cases. It was a real assembly line.

Hughes: I was wondering about blood substitutes. Wasn't that a problem earlier?

Gerbode: Yes. Blood and plasma were sent to us overseas. We never really had quite enough of them.

Hughes: How were they sent?

Gerbode: They were sent over cold in airplanes from the United States, mainly. Sodium pentathol was a very useful drug. We'd have one man just fixing up syringes of sodium pentathol. That's all he did.

Hughes: You could keep supplies like that?

Gerbode: They kept us well supplied with things like that.

Hughes: When you ran out of blood, then you were forced to use plasma?

Gerbode: Then we used plasma or glucose.

Heidelberg

Gerbode: Finally they chased the Germans out of the Vosges. I was lucky to get out soon. I went right to Heidelberg, which is a place I had known before the war, and went to the university hospital. It was very interesting, because the Germans had left their wounded in the hospital. They were using paper casts for fractures. They had run out of plaster. You could see that their treatment was beginning to get pretty second or third rate at that point. The professor of surgery met me, a fellow by the name of Wolf, as I recall. He showed me around the hospital and introduced me to some of the other academic people there. I guess we had blown up the bridge

- Gerbode: across the river, so they'd run out of water, because the water came across on the bridge. That was a problem until the army built another bridge and brought the water back again.
- Hughes: When you went into a hospital like that, would you just literally take over?
- Gerbode: Oh, yes.
- Hughes: What would happen to people like Wolf?
- Gerbode: He stayed on. In fact, he even stayed on as professor after the war, until Fritz Linder went there to take his place. In fact he stayed on after that. They gave him a cancer institute to run.
- Hughes: But he wouldn't have been caring for patients once the Americans arrived?
- Gerbode: No. I think they let him take care of the Germans who were still there, but not the Americans. We moved in our whole unit there.

Mutzig

Gerbode: We moved out of that area and chased the Germans all the way up to the Rhine. I set up a beautiful little hospital in Mutzig which is in view of Strasbourg across the Rhine. I set it up in the middle of the night in a gigantic rainstorm. It was in an old French barracks. Our boys really did a tremendous job of converting it into a hospital. They worked just like demons. It became a beautiful little hospital in about forty-eight hours.

We took care of the wounded there for about two weeks. This was over Christmas. We had a Christmas tree. The Germans were on the other side of the Rhine at that time, which was not too far away. Every once in a while, they'd come over and bomb some of the units nearby. They tried to knock out the water tower, for example, that we were using, but they missed it.

The Battle of the Bulge

Gerbode: Then around New Year's Eve, the Battle of the Bulge started. We had to pack up and get out within twelve hours. They sent ambulances up. They took all the patients back to base hospitals or other hospitals. We packed everything up and rushed out of there on the way back to the other hospital in Epinal, which we had left previously. This was an evacuation of about a hundred miles. In the excitement our executive officer, who was a doctor, was in a jeep which was run over by a French tank. It was on the wrong side of the road. He was killed.

Anyway, we went all the way back to our previous base and stayed there until the Battle of the Bulge stabilized. It was kind of a scary business for a little while. But we got out in time.

Wartime Surgery (Continued)##

[Interview 3: August 8, 1983]

Hughes: Dr. Gerbode, we talked some about the war, but perhaps you could tell me a little bit about how you were actually set up for surgical procedures.

Gerbode: We first of all had to get a hospital put together in a number of hours to take care of the injured and wounded. So the idea was to set up the hospital in units. We first set up an intensive care unit, which is where the patients would be triaged. The word triage means to separate the patients into emergency cases and patients who can wait, those who were medical and those who were surgical. The triage team in the receiving tent did this work. The wounded and the sick would come in, and then they would be separated into these groups.

The second thing we put up was the operating room. Then a fifty-bed ward. This would all go up within five or six hours. We had floors for the operating room and special tents. The packages of instruments and drugs were all ready to go as soon as we got the boxes unloaded from the trucks.

The operating teams would then be ready to start operating. Usually it was a surgeon and an assistant surgeon, and sometimes a noncommissioned officer, a sergeant or somebody like that.

Hughes: Were those teams static? Did you work with the same group?

Gerbode: Not always, but pretty much they worked together. I had the same assistant pretty much during most of the activity. The other thing was, to use the noncommissioned officers and sergeants. It was great to train some of these fellows to be assistants. After a while, they were so good, they were really better than some of the doctors, because they would do what you told them to do, and they would remember. Then they'd do it exactly the same the next time. There was never any argument about what they should do when they were assisting. Not that the doctors would argue, but still, it was great having a first-class assistant. I had two that were excellent. I think I mentioned their names before. One of them was Querhammer, who was a farmer from the Middle West. The other was Carson, who was a carpenter from Los Angeles. I've lost track of Querhammer, but Carson is a successful contractor now. I met him a couple of years ago. Very attractive, very intelligent guy.

The patients would be brought into the operating room, the ones who needed operations, and we had one captain who was assigned to arranging all the anesthesia. He immediately would get busy getting the anesthetic things together. Sometimes he would be an anesthetist, and sometimes other doctors would act as anesthetists. Sometimes we'd use the nurses. Then we would operate, and then the patients would go back to a recovery room, which was another tent, where they would sometimes be evacuated in a day or two or three to another base hospital or might even stay there if we thought they would recover quickly. The patients would come in pretty muddy and pretty messed up, so it was a job getting them cleaned up so that they could be operated upon. But luckily, they were mostly in good health, so you were operating upon somebody who was young and healthy, and this helped a good deal, particularly when we had enough blood so we could replace their blood loss.

We tried to send patients to tables where the surgeons had a little more expertise in one field rather than another, and this meant that those who had good orthopedic training would get most of the bone injuries, and those who had other training would get the other kind of [injuries]. My table, I guess, got pretty much anything that came along. We had lost our neurosurgeon somewhere along the line, so that we had to do the neurosurgery as well as the general and thoracic surgery. I had to do a fair number of brain cases and spinal cord injuries as well.

Hughes: Had you done anything like that before?

Gerbode: I was trained in neurosurgery to a certain extent during my residency, so I knew the essential features of it. There were some pretty horrible injuries. For example, I had several patients who had had both their eyes shot through with frontal brain bullet wounds. Pretty much of a mess to see them. One would have to enucleate the remnants of the eyes and patch them up so they wouldn't get meningitis. It's a curious thing that one of these fellows had part of the frontal lobe shot away and one eye. I had gotten some preserved dura mater, which I used to cover over the defects on the brain so that the brain wouldn't become infected or exposed.

A curious thing, many years later in the old Stanford Hospital, I was having rounds, and there was a fellow on the eye service, and somebody mentioned my name. He said, "Is that Dr. Gerbode who was in the war in France?" I said yes. He said, "You operated upon me and removed an eye in France during the war." He said, "I've never forgotten your name." He came in for some plastic surgery on his eye.

Hughes: That use of dura mater, was that something new?

Gerbode: No, I guess it was generally used by some people. It was a piece of tissue that you could use to cover the brain. It was available because there were enough dead soldiers to give us the material.

Hughes: There's not a problem with rejection?

Gerbode: No, it would be incorporated in the scar tissue.

Anyway, sometimes we'd operate for long hours. We'd have to operate, obviously, until all the wounded were taken care of. If you got overly tired, you could rest for a couple of hours and then come back. Usually it was a matter of working maybe twelve-fourteen hours and then having a quick ward round on the patients upon whom you'd operated, although they were well taken care of by ward surgeons who were assigned more or less to postoperative care. Then you'd flop down in your bed and maybe try to get a shower and something to eat, and then go back on the line again.

Hughes: How many were you?

Gerbode: I think we had forty-nine officers and fifty-two nurses.

Hughes: And all the officers had medical training?

Gerbode: No. They were about half medical and half surgical, and various levels of training. I was lucky, although I was young and not too far out of my surgical residency, I was given a major's commission. This was pretty good for a young guy going right into the war.

Hughes: Why?

Gerbode: Because I'd had very good training, and they recognized this. Then there was an opening in the unit, so I fitted the bill pretty well and got the commission. This of course was a great help, because being a senior officer gave me lots of opportunities which I wouldn't have had if I was a junior officer.

Hughes: You haven't said anything about diagnostic tools.

Gerbode: We had a mobile xray machine which we used. We had a whole team of roentgenologists who did nothing but take pictures and interpret them. They were pretty fast at it, so that if you had a compound wound with a fracture, they'd have a picture for you in fifteen minutes or so. Then you could use that to decide what to do about the patient.

We were lucky in having surgeons who were very good at orthopedic surgery, particularly Dr. Matthewson, who was the chief surgeon. He had had good training in fractures and bone injuries, both in Europe and at San Francisco General Hospital, so he helped a lot to establish the kind of operations which would be best for these patients.

There were quite a few joint injuries which required special care. We'd try to get them cleaned up and closed so that they wouldn't be infected. An infected joint is pretty difficult to cope with later.

The operating activity would come in great bursts of furious work and then there would be periods when there wouldn't be anything to do for quite a while. This is bad in any army or navy unit, because then everybody starts looking around and finding things to complain about. Usually it's the army or the commanding officer, and anything bad, including the food. I tried to avoid these long discussions as much as possible, and maybe that's why the commanding officer gave me these special assignments, because he realized I didn't want to sit around and gripe very much. I would much rather be busy doing something than worrying about what was wrong with the army.

The German Wounded

Gerbode: We had interesting cases , because as the war progressed, we of course had many German wounded and also some other ancillary wounded, some Poles and Hungarians and others, who had been brought into the German army. But they were mainly Germans, and the farther along we got in the war, they were younger soldiers--they were just boys, really--and older ones. The middle ones had either been shot up pretty badly or been captured or killed.

Hughes: How young were the youngest?

Gerbode: I guess they were fifteen, sixteen, and seventeen. Toward the end they were just kids.

Hughes: And probably no time for much training.

Gerbode: They weren't very well trained. The older ones were kind of tired of the war, and many of them had been wounded in previous battles. All the German soldiers in France had a peculiar smell about them. They didn't seem to have time to get fresh clothes or take baths, so they all smelled pretty badly.

Hughes: Did they come in with diseases as well as injuries?

Gerbode: They had some diseases. One thing that I think I mentioned before, they weren't very well protected against tetanus, so some of them got tetanus from their contaminated wounds. We had tetanus antitoxin; we could give it to them, but that doesn't cure people right away. They were not very well fed, because Germany was running out of food for them. They certainly ate a lot of potatoes and that sort of thing.

Hughes: Because they weren't in as good health as the American boys, did you have more problems postoperatively?

Gerbode: No, they were in good enough shape so they came through pretty well.

Anyway, it was a very sad experience to have built this beautiful little hospital in Mutzig near Strasbourg on the Rhine. We could look out and see the Rhine from this old French barracks, and we knew the Germans were on the other side of it, until the Battle of the Bulge. It really was a very, very nice little hospital, and we were terribly busy there. I had it organized so that we were really almost like a regular hospital, because we had walls and water.

Booby Traps and Mines

Gerbode: Another thing that I found out, when we started exploring places to set up hospitals, you had to watch out for booby traps. Those clever Germans would put a little bomb on a toilet flushing chain, or they put something that would look like a little prize or a souvenir on a pedestal. If you picked it up, the thing would explode and blow your hand off. So we were very careful about any objects like that.

Hughes: Did you have a crew that went through when you first arrived?

Gerbode: Yes. Then of course in some areas they had mined the roads and the areas around where they thought the [U.S.] army might go. So the army had a whole team of people that would go ahead and find out about mines and remove them. Some of the mine wounds were terrible. They had a cement mine which, when it exploded, would drive hunks of cement into the tissues. Of course that makes terribly infected wounds. We had a terrible time getting some of that [out].

Hughes: Was that the point?

Gerbode: That was the point of it. It was cheap to make them out of cement rather than steel or nails or whatever. Then when they exploded and drove these hunks of cement into the tissues, they all had to be gotten out, otherwise they were surely going to cause infection. When they went in through cloth, they carried bits of cloth with the pieces of cement. That all had to be removed. It was pretty messy.

Pushing Back the Germans

Gerbode: When they drove us all the way back to Epinal again from Mutzig, it was a very depressing turn of events, because we didn't realize the Germans were that strong. They had made this big effort to push us back. It was one gigantic, final effort.

Hughes: This is 1944?

Gerbode: Yes, 1944. So anyway, we went all the way back to Epinal. Then we waited there for a while until the Battle of the Bulge was over, until we started pushing the Germans back again. We had to go through the Hindenburg Line, so-called, and get through heavy fortifications.

Gerbode: We then had a series of moves up into eastern France and western Germany. We moved I guess three times into villages in various places, and finally ended up in Heidenheim, which is not too far north of Munich. A nice little village. I selected this place because it had a nice field. It turned out to be kind of muddy later on, but the engineers filled it in with rock and so forth, so it wasn't quite so bad.

The Germans were really on the run at that point and going all the way back into the Austrian Alps and defecting quite frequently. We had a German colonel walk into the hospital one night and give himself up. I could talk a little German. So I talked to him and asked him why he was giving up. He said, "Well, we're going to lose the war." I said, "Why do you think [you're] going to lose the war?" He said, "Because of that two and a half ton truck of yours. It can always get there faster than we ever expect you to get to an intersection or a crossroad. You'd arrive with all your guns and equipment hours before we thought you could get there, because that transportation was so great." Those trucks were marvelous. They were fast and strong.

Hughes: Were they developed during the war?

Gerbode: Yes, they were a war product. After the war, we saw these trucks all over everywhere, because people would pick them up right away and use them. Even down in the Hawaiian Islands, a lot of the plantation people bought them from the army surplus because they were so useful on the plantations. They are so strong and well made.

Dachau

Gerbode: When we got close to Munich, I really got more and more interested, because I'd been there for almost a year before the war. I knew Munich pretty well. When we got word that Dachau was going to fall, I got permission from the commanding officer to get a jeep, and Roy Cohn and I went right to Dachau. We got there the morning after we'd taken it. The moat around Dachau [contained] about a dozen German soldiers [who] had been killed and were lying in the water still. The people in Dachau were celebrating as best they could. They had some improvised flags they put up. The army brought them food. They were just scarecrows, just skin and bones. Whatever you read about Dachau is not exaggerated. The gas chamber room was filled with bodies, smoking and smoldering because they had run out

Gerbode: of oil to burn the bodies, so they just stacked them in this big room about seven or eight feet deep, one on top of the other, and smelling pretty awful. [The Germans had] taken their clothes off, and of course taken all the gold out of their teeth and any rings they'd had. Outside of the gas chamber was a big pile of bodies of men, women, and children, just skeletons really, piled up like cordwood. Then outside was a couple of open tank cars filled with bodies as well. Some of them died of starvation; some of them had been killed; and some had died of typhoid or typhus or various other things. If anyone disbelieves this happened, they shouldn't, because it was really true.*

One thing I can say for the Germans is that they have documented this. If you go to Dachau now, you can see pictures of the whole thing, although some Germans just still don't want to believe it. But the Germans have made a big point of showing actual photographs of how they did everything, the places where [the Jews] had to sleep, and how they killed them and so forth.

Hughes: Why did you want to go? Was it for a medical reason?

Gerbode: No, I was just curious. I had known about Dachau; I just wanted to see it.

Hughes: It was well known?

Gerbode: Oh, yes. Remember I told you, when I'd been in Germany before, my cook's husband had been sent there.

Munich

Gerbode: In any event, Munich fell the same day [I went to Dachau]. So Dr. Cohn and I went right down to Munich. I found the little house we had rented in Geiseltasteig. It was in a forest, a beautiful location. There was an air-raid shelter dug in the front lawn. The house was locked; there was nobody there. I looked in the window, and there was a meal unfinished on the table. The people had left in a great hurry.

Hughes: Where did people like that go?

*Partly because of this experience, Dr. Gerbode contributed to the construction of the statue commemorating the holocaust, which stands near the Palace of the Legion of Honor in San Francisco.

Gerbode: They usually went further into the mountains, because the mountains were close by, and they had cabins up there where they could get away from the scene of activity. Then we went down to Munich itself. It was real devastation. The center of the town had been blasted to smithereens. I had a hard time finding my way around. The Frauenkirche was in the center of the city. I finally found it, because part of one tower was still standing. From there I could orient myself to the rest of it. They had already, after some of the bombing, built little stores out of plywood on the main streets, so they could do a bit of business with the remaining Germans before the Allies came.

I knew the building where Hitler had had his headquarters on a great big square. This is where [Prime Minister Neville] Chamberlain had signed the appeasement pact. So I went right to the building. Since I was a lieutenant colonel at that point, the army sergeant that occupied the building let me go in. So I went right up to Hitler's office, and there was a sergeant from Texas with his feet on Hitler's desk and this great big room lined in pigskin. Our army had already stripped a lot of the pigskin leather off the walls for souvenirs. The army sergeant was there and really quite happy with himself, just sitting at Hitler's desk. He said, "Hi, Doc, you want a souvenir?" I said, "Sure." He said, "Well, the flag from the building is in Hitler's bathtub behind me in this room." So I went in there, and there was this big bathtub and the [flag] which they had taken off the building. He gave it to me, and I have it at home now.

We drove around a little just to see the devastation, which was really awful. We'd really bombed the smithereens out of that town.

Hughes: Were most of the inhabitants elsewhere?

The German Surrender

Gerbode: They were elsewhere. Hardly anybody was left. Once in a while an old person would be rummaging around in the debris. So then we went back to Heidenheim and waited. The Germans were really giving up here and there. As you went along the roads, you'd see a whole truckload of prisoners being brought back from somewhere.

Gerbode: Just before that the thing that was so obvious [was] that we had complete dominance of the air. Every night, and during the day, too, these huge flights of British and American bombers would go over to bomb various cities, just bombing them off the face of the earth. That was the only way you could get [the Germans] to give up, really: wreck the factories and the towns. They actually went after the center of the towns, too, because they had to get the people to realize that they were losing the war.

In fact, one thing that happened several times on the way down through western Germany, the mayors would come out and surrender the village, and then as soon as our troops started going through, the windows would open on the second floor, and the SS would start shooting at the troops. They killed a lot of our soldiers this way. They were such rabid Nazis, they just couldn't believe that they were going to lose the war. So then our commanding general said, "Look, if this happens once more after the village has surrendered, we're going to back off and level the town. Nobody is going to survive." So the next time it happened, it was a town called Crailsheim. It was a modest sized town, maybe fifty thousand people. And sure enough, the SS was there with their machine guns. So then the general pulled everybody out, surrounded the town with tanks, called in the air force, and they absolutely leveled it. I don't think there was even a chicken alive. But that was the last time the Germans did that. That was the only way you could deal with it, you know. We went through Crailsheim right afterwards on our way down further south--just smoking ruins.

Hughes: Would you do anything about the German wounded?

Gerbode: Oh, yes, we'd take care of them, just like the Americans. We took care of a lot of civilians that way.

Hughes: What was their attitude?

Gerbode: Well, at that point, they knew the game was up. They were sad, dejected, disillusioned people. This was even true of the soldiers, the old people they brought in, and the young people; they realized that it was hopeless.

The other thing, of course, is the German air force was wiped out. We could never find Stücker bombers in airports. They used the Reich autobahns for their airstrips, and then they'd bring the planes into the forests where they had everything camouflaged.

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Return to the United States

Gerbode: When the Germans finally gave up, I was lucky, because they had a system of points, and the people who had the most points were allowed to go home first. I had a wife and three children, and I had been in from the very beginning. I had gone through all these five or six campaigns, so I had more points than most of the others, so I was among the very first to be permitted to go back.

We were sent back to Paris and put up in the Galerie Lafayette, which was a big department store in the center of Paris. It's still there, rebuilt. The Americans had taken it over. They had showers, bunks two or three high, where we slept while waiting for evacuation. We were there for about a week. We were there actually on Bastille Day, which is always a big celebration. It was very, very emotional because this was the first Bastille Day after the Germans had been defeated. Some friends and I walked all the way up the Champs Elysee with the crowds of people celebrating the end of the war.

I went back to the Hotel Crillon, which is on the corner of the Place de la Concorde where the family and I had gone a couple of times before the war. It was then an American officers' rehabilitation center or something like that. They had an orchestra so that the Americans could dance and play around with the French girls and the nurses. I went up to the desk and asked the steward if he knew that my family and I had been there before, and he said, "I'll look it up." He found our old bill. [laughs]

Finally we were told that we were ready to leave to go home. I was with some of the University of California group, who had a base hospital. Brodie Stevens* was one of the men who was there at the same time waiting to be evacuated, along with some of the other University of California officers. So a whole bunch of us were carted out to an airstrip and put in a C-54, a four-engine motor plane, and started home. We all sat in metal bucket seats around the inside of the plane. We were given evacuation instructions in case we went down in the ocean.

We were going from Paris to Newfoundland to make our landing, and about three-quarters of the way across, one of the engines in the plane went crazy, and we lost thousands of feet in a great hurry.

*Brodie Stevens was a surgeon and member of the medical faculty of the University of California, San Francisco.

Gerbode: So we were all told to get ready to go in the drink. Brodie Stevens said, "Well, Frank, I guess this is it." Luckily, these kids who were driving the plane--to us these youngsters looked like high school students--managed to feather this crazy engine and got it under control so they could get it into Newfoundland. We were very happy to land safely. [laughs] That was really something, to think that we'd go down in the ocean after going through all this other business [during the war].

They put us on another plane in Newfoundland, and finally we got to New York, after a couple of transfers of airplanes. My wife met me there. She was waiting in the Gotham Hotel. We had been able to send messages saying that we were coming home.

The thing that I remember so clearly on arriving in New York was to find business as usual, no sign of any suffering, and nobody really seemed to care very much about the war. It was very strange. And the same thing was true in San Francisco later. I could write another little chapter about the attitude of the people that didn't go away during the war.

Hughes: Could you say something--not a whole chapter--about that?

Gerbode: One of them that didn't go away said, "We're going to have refresher courses for you fellows [who have come back from the war] so you can remember how to take care of gall bladders and hernias and so forth, and get you back into shape." This was a terrible thing to say.

Hughes: Yes, as though you'd been away on a vacation.

Gerbode: We looked healthy, because we were all slimmed down and brown, so they thought we had been on a gigantic vacation. They were home taking care of everything and really suffering terribly.

Dwight Harken

Hughes: Dwight Harken crops up a lot in talks about the war. Since you both were more or less in the same field, I wondered if you had any contacts with him or knew about what he was doing?

Gerbode: Dwight is a friend of mine. He was with a Harvard unit which stayed in England at a base hospital, so he got a lot of these patients who had been evacuated by hospitals like mine. There he

Gerbode: was one of the first to demonstrate that you could remove shell fragments from inside and around the heart without using extracorporeal circulation. He did, I think, several hundred patients this way with very, very good results, the first time that anyone had really tackled this kind of surgery with such success. It really made him quite famous.

Hughes: Had you gone into the war with the feeling that the heart was surgically inviolate, so to speak?

Gerbode: No, we had no feelings about it being inviolate. But actually, if a shell fragment was lodged near the heart and the soldier was doing well, well enough to be evacuated, we'd send him back with his shell fragment, take care of his external wounds, because most of the time a shell fragment in or around the heart was not life-threatening at that time. Later on a shell fragment would erode parts of the heart and patients would bleed, or they'd get infected, or they'd interfere with the function of the heart. This was also true of the boys coming back from Korea. They also had shell fragments in and around the heart which had to be removed when they came back.

Hughes: But you didn't have to do that in World War II.

Gerbode: We didn't have to do it at all. We did take out shell fragments in the chest and around the heart if they were causing trouble at the time. But Dwight really did a magnificent job in doing this electively in England. He'll be remembered forever because of the work he did.

Hughes: Yes, I read that he removed one hundred and thirty-four missiles without one death.

Combat Medals

Hughes: You modestly neglected to talk about the combat medals. Could you tell me a little bit about how those are awarded?

Gerbode: It's a curious system. Combat medals are awarded because you were in a given campaign. Our unit ended up with six combat medals.

Hughes: Per person.

Gerbode: Yes, everyone got one. It's a little star on a bar. I don't think any of us were wounded, so none of us got a purple heart. But there were several medals for meritorious work that were given to members of our unit. I didn't get one.

Hughes. But you got a unit citation.

Gerbode: Yes. The whole unit was cited for having contributed such a lot of good work during the war.

Hughes: When they say good work, they mean in the medical-surgical sense.

Gerbode: Yes.

Hughes: I know it's hard to be objective when you were part of it, but I've had the feeling this was an exceptional unit.

Gerbode: It was. It was so good, because we had all been academically trained, we all had gone through residencies, we knew good medicine and good surgery, and we tried to apply it to work in the field, which is a very good way to do it. We were so good that they constantly tried to break us up, put us in other units. But most of us resisted any attempts to move us. If the question came up, we said, no, we'd rather stay with our own group. But there were two or three surgeons who left the group and went to other units.

Other Base Hospital Units

Hughes: I saw allusion to the Fifteenth Medical General Laboratory which in 1943 was apparently moved into Italy. I don't know much more about it, but I thought maybe since you were there, it might have influenced what you were doing.

Gerbode: There were several big base units that were moved into--

Hughes: This was in Naples.

Gerbode: Yes, and also later on in Rome. For example, the Harvard General Hospital I think moved into Naples first and then Rome and stayed there during these final pre-evacuation treatments of patients. They did close a lot of the wounds secondarily that we had made originally in the evacuation hospital.

Hughes: So these were serving the same function as Harken's unit.

Gerbode: Yes, except they were closer up to the front. In fact, [the Harvard unit] landed in Casablanca very shortly after we landed there. We were quite jealous of them, because they got a nice big school or two to set their hospital in, and they had a lot more amenities than we did out in the field in our tents, including having a better supply of liquor. [laughter]

Hughes: That was very important.

Gerbode: But their commanding officer was not very popular. He was an obstetrician. Most of the officers hated him. I won't mention his name. There were a couple of officers in that Harvard unit that were very outspoken, very much individuals, and they were constantly being punished by this commanding officer. I had some good friends in this unit. One was Tygve Gunderson. We rented a double bicycle and explored the countryside around Casablanca.

The Commanding Officer

Hughes: You didn't have a problem with your commanding officer?

Gerbode: We had a regular army surgeon who was our commanding officer. He was not at all well liked by our people. I got along with him, because I didn't think there was any point in antagonizing him. Maybe that's why I got all these little extra assignments. It wasn't because I expected to be promoted or to get a medal for it. I just didn't want to be inactive. I wanted to do something constructive.

He was an orthopedic surgeon and had been in World War I. He acted as though the war was just another experience like the previous one in a way. But he was very high in the hierarchy of the regular army and may have had some influence on where we were sent at various times.

Hughes: Was he dictatorial?

Gerbode: Well, he had some peculiarities. For example, he carried with him a McGuffy's Reader, sort of like a Bible. Do you know what a McGuffy's Reader is?

Hughes: It's a primer, isn't it?

Gerbode: It's a children's primer. He carried this all during the war.

Hughes: What was that for?

Gerbode: I don't know why he did it. Maybe he read it once in a while.
[laughter] It was only when people started griping and complaining a lot that he'd get cranky and do things that they would dislike even more. To me that was kind of a waste of time, because if you weren't acting up, he would leave you alone.

Hughes: That's all I have to ask about the war. Do you have anything more to say?

Gerbode: I don't really have anything much more to say about it. I said already that Harvey Cushing had long since said that war either makes or breaks a surgeon. From my own personal point of view, I guess what I got out of the war from a surgical point of view was confidence, because there wasn't anything, really, that phased me after doing all that work in the war. I guess that you get used to handling all kinds of situations.

Correspondence To and From Home

Gerbode: From the point of view of hearing from home, this was difficult, because we got very little mail. Once in a while, we'd get a batch of mail. I had a few people who wrote to me regularly. Mrs. Happy East Miller, a very lovely older woman of the Miller family in San Francisco, wrote to me regularly, and several other acquaintances. I guess they enjoyed writing to a soldier overseas. I would answer their letters, and they would go through all right.

Hughes: I wonder if any of those letters have survived.

Gerbode: I have some letters that I wrote at home. I haven't looked at them since I got back.

Hughes: Don't let anything happen to them!

Gerbode: I wrote a lot of letters, because it was a way to soak up time.

III THE IMMEDIATE POSTWAR YEARS

Research and Surgery

Decision to Stay at Stanford

Hughes: Then you were back as an instructor in surgery at Stanford. Did you ever consider going anywhere else?

Gerbode: I'd had offers to go several places very soon after I got back. The army asked me to stay. I had an offer to go to New York, and an offer to go to Washington, D.C., and a couple of tentative offers elsewhere.

Hughes: Did those offers have anything to do with your wartime experiences?

Gerbode: No, it was the fact that they could see I wanted to pursue an academic career. I'd written a few papers and gotten--this was a few years after the war--to be known a bit. But I turned them all down. I didn't want to leave San Francisco. No matter what the honor might be to go elsewhere, it didn't mean anything to me. Even Palo Alto later on. [laughs]

Anyway, I came back from the war and, as I said, the boys who had not gone away said, "Now, we're going to set up some refresher courses for you." That was one thing, and another group said, "We really need you in the outpatient clinic to work with the students." This again was like a kick in the pants, you know. But I accepted some of these things, and I went to the outpatient clinic a little of the time, and finally got back on the team teaching in the hospital. But mainly I went right back to work in the laboratory, because if nobody was going to send me any patients

Gerbode: to operate upon and there wasn't much else to do, there was always a lot of work we could do in the laboratory. So that's when I started working with things which finally led to extracorporeal circulation.

Hughes: Why?

Gerbode: Vascular surgery was just beginning to be born, and I could see its future was going to be very exciting because if you could correct a congenital lesion, you usually had a pretty whole person. The choice then was either to do that or to do brain surgery or cancer surgery. Cancer surgery didn't make me very excited. It's a matter of cutting out a lot of tissue and then waiting to see whether a patient was going to get [the cancer] back again. One of the professors wanted me to be a neurosurgeon, and he tried everything possible short of killing me, which is really true, to get me to be a neurosurgeon.

Hughes: This was [Reichert] during your surgical residency?

Gerbode: Yes. It was really something to cope with him, because he was a very strong man. He had a very strong wife, who had decided, too, that this would be best for her husband, to have me be a neurosurgeon.

Hughes: Of course it was a compliment. [laughs]

Simulated Congenital Lesions and Extracorporeal Circulation

Gerbode: I finally just said, "No, I don't want to do that at all." So then I started making simulated congenital lesions in animals and trying to reduplicate what sometimes happened congenitally and then experimenting finally with extracorporeal circulation. Some of the first things we did were really quite curious. For example, the first oxygenation we did was to put the venous blood in bags with oxygen and shake them. Then we'd get the blue blood to turn pink, and then we'd give that back to the animal. This was the first time we had tried to do anything to simulate an artificial lung. I did this with John Callaghan, now a professor in Edmonton, Canada.

Hughes: This was right after the war?

Gerbode: Late '40s and early '50s.

Hughes: What kind of success did you have with that?

Gerbode: Pretty good. The trouble was, we didn't realize it at the time, but when you shake the blood this way, a lot of bubbles get in the blood. This happened later on when we got into using bubble oxygenators in extracorporeal circulation, and it's still a bit of a problem now. Microbubbles will occur, and they're not very well tolerated by the body. We [did] a lot of experimental work on that later on in our laboratory.

We had a good diener in the laboratory, a fellow by the name of John Kratsch. He was very helpful and was there every day and very good at helping with animals. Later on another Jewish German emigré was there by the name of Ludwig. He got to be very good, too, at helping with animals.

The laboratory that I went back to in the old [Stanford] medical school was absolutely infested with cockroaches and lice. Periodically we'd try to get somebody to come in and blitz the place, but they were under the floors and in the drawers and everything. During the war, nobody worked in the laboratory. It was an old building, and the bugs and beasts just took over. But we finally got it cleaned up reasonably well. When you'd bring the animals in, they were usually filled with ticks and lice. They would have to be cleaned up.

Patient Referrals

Hughes: How were you faring right after the war with patient referrals?

Gerbode: Oh, few and far between. I had no place to see a patient. Although they were very happy [for me] to be an instructor and work in the outpatient clinic, nobody offered to give me a place where I could see an occasional patient. Frank Norris, who had not gone away to the war and who was a gynecologist here in town, was a friend of mine, and he said, "You can have a little space in my office on Van Ness Avenue." So that's where I went once or twice a week just to see if somebody would come. [laughter] The cases that were referred to me were breast tumors or once in a while a thyroid or a hernia or an appendix. But I'm very, very grateful to Frank Norris for giving me a place to hang my hat.

- Gerbode: Eventually, as I worked my way into the faculty a little and became useful to them--I thought I was useful to them in the beginning, but more useful to them--they gave me a place in the old Stanford Hospital where I could see patients twice a week. But then the dean said, "I don't really want you to send any cards announcing that you have an office here." [laughs] He said, "You can see patients here, but don't send out any cards."
- Hughes: What did he think would happen to you?
- Gerbode: I didn't really want to find out why he said that. He was a rather peculiar man anyway, so it didn't matter.
- Hughes: How did that situation gradually change?
- Gerbode: Well, one thing that changed it was the fact that Dr. Holman found I was a good assistant, and he was the professor, so he had a pretty large private practice. So did Reichert, the neurosurgeon. They needed good help in the operating room, aside from the residents. So I would just scrub in and help them, and then finally once in a while, somebody would refer a case to me instead of to them, particularly if they went away. [laughs]
- Hughes: Was that all right with them?
- Gerbode: They couldn't say much about it. If the boss goes away, whoever is left behind can do the work if he can get it. This is generally true in all medical schools. The second or third in command is always very happy to see the boss leave.
- Hughes: This sort of thing, I would imagine, always happens to a younger man trying to break into a field, but--
- Gerbode: It does.
- Hughes: --the fact that you had been away and they hadn't would aggravate that situation.
- Gerbode: Yes. The other thing is that there were quite a few people who hadn't gone away, you see, and they had most of the practice.
- Hughes: Yes.
- Gerbode: Holman went away to the navy, and Reichert didn't. Holman served very well in the South Pacific and at Mare Island. But when he returned he was the professor, the chief, so he had no problem getting patients again. Reichert had stayed home, and I must say

Gerbode: it was terribly hard on him. He was very conscientious about teaching and his responsibilities to the house staff. So he worked really hard, almost to the point of becoming a little bit psychotic sometimes, I thought, under the pressure. This carried over later on when Dr. Holman came back and took over. Then Reichert was not the big chief any more, and this was a little bit of a problem, too.

Then when we began to do heart surgery, Dr. Holman liked to have me assist, because I was a pretty good assistant. I had already done most of the procedures in the dog lab, because I was constantly working over there with all my free time, doing experimental procedures on animals. Managing blood vessels and things around the heart was becoming quite familiar to me. So gradually I just got a few of these patients.

Hughes: These were mainly congenital anomalies?

Gerbode: These were congenital anomalies, but not open heart surgery. These were procedures like doing patent ductus and coarctation and the Blalock procedure, which came along a little later.

Early Vascular and Heart Surgery in the United States##

Gerbode: [What] first pushed vascular surgery and then heart surgery forward in this country was the access that young university men had to the laboratory, and the fact that if they had made a name for themselves in the experimental laboratory and could present papers at meetings, this was very good for their record and promoted them in the faculty almost faster than anything.

Hughes: Now, was this unusual?

Gerbode: This was more or less American.

Hughes: Not British.

Gerbode: No. The British frowned on experimental surgery.

Robert Gross: Operations for Patent Ductus and Coarctation

Gerbode: Anyway, there were two men in our country who really pushed things forward, and they were both men who'd worked a lot in the laboratory. One was [Robert] Gross in Boston, who did the first patent ductus arteriosus. Dr. Holman had been offered a patient to operate upon a patent ductus before this by Bill Dock, who was then on the medical faculty, but [Holman] turned the patient down. He didn't want to do it for some reason. So then he lost a chance to become immortal. But Gross did one, and he ligated it successfully. There had been a couple of attempts before, and they had failed. But his patient survived, and he was working in a hospital where there were children with all kinds of defects, and so he had lots of material. He immediately did a whole batch of patients with patent ductus.

Hughes: He was from Boston?

Gerbode: He was at Children's Hospital in Boston. He worked with Charlie Hufnagel in the laboratory. Between the two of them, they had made experimental coarctation and perfected an operation. About the same time that Clarence Crafoord in Stockholm had done a successful coarctation [October 19, 1944], they had done one in Boston [June 28, 1945]. This also caused tremendous excitement.

Hughes: And then you did one not long thereafter. You published a paper on it in 1951.

Gerbode: Yes, I did some very early. I did the first patent ductus at St. Bartholomew's Hospital in London in 1949.

Hughes: Yes, I read that paper--a young boy with a psychiatric problem.

Gerbode: That was a coarctation. Christopher Frye. He became a doctor at St. Bartholomew's later, and I saw him in London when I was over there recently.

The Blalock Procedure

Gerbode: Anyway, Blalock had also been experimenting on animals to try to correct coarctation. He really didn't think he could cut out the coarctation and sew the ends together.

Hughes: Why?

Gerbode: He said later, "The reason I didn't think of doing it that way was because I'd never seen a coarctation. I'd only seen pictures of them."

What he did then was to turn down the left subclavian artery into the area beyond the coarctation to make kind of a bypass operation. He didn't realize it at the time, but this was an operation which later became the Blalock procedure for blue babies. That was a tremendous thing. It is said that Helen Taussig persuaded him [Blalock] to do this, because she had seen Gross produce an artificial ductus by sewing the subclavian artery into the pulmonary artery, and that produces the same physiology as a patent ductus. So she knew that blue babies who had tetralogy of Fallot, who had a patent ductus, did well. Then if the patent ductus closed, the children would die. She then rightfully said, if we can make a patent ductus, then we can keep some of these blue babies alive. She persuaded Blalock to try it. He had a very fine black man, Julian, working in the laboratory who helped him a great deal. He was terribly good with his hands. He and Al worked on this operation for blue babies.

Hughes: You mean he would actually assist Blalock?

Gerbode: Yes, and they worked together in the lab. Julian got so good at it, I think he was doing it very well himself.

Hughes: Did you subsequently do some of those operations yourself?

Gerbode: Oh, yes, I did maybe a hundred or so. When I went to England in '49, I did this operation and nobody else [there] was doing it very much.

There were thousands of blue babies in this country and in Europe. This was the first operation that came along that could help them at all, so that everybody was trying to do these blue baby operations after they knew a little bit about the field. Dr. Holman's wife was named Dr. Ann Purdy, and she was a pediatric cardiologist. She had a bunch of these children on a string. She developed a tremendous practice and fed these patients to Dr. Holman, and I was helping Dr. Holman. As time went on, once in a while she'd slip me one, too. [laughs] If it went well, then that was fine.

Hughes: The success rate in the beginning was not all that high, was it?

Gerbode: The mortality rate wasn't so very great, maybe 5 or 6 percent.

Hughes: Most of these children were terribly sick, were they not?

Gerbode: They were very blue. Well, most of them were not very well developed, because they hadn't been able to run or play very much. But they blossomed with this operation.

Anyway, with [Clarence] Crafoord's operation for coarctation, Gross's operations for patent ductus and coarctation, and Blalock's developing the Blalock procedure, this caused a tremendous amount of excitement. Then everybody started trying to find other things to do. The ones who could were better off. These were usually ones who had worked a lot on experimental animals in the dog lab. This was generally true of the young academic surgeons. Now, the other thing that contributed to this a bit later was the fact that a lot of these young faculty members, like me, didn't have much to do when they came from the war. [laughter] So we were working in the lab anyway to keep busy.

Hughes: So it was a blessing in disguise.

Gerbode: They were the ones, then, who pushed the field forward. Harken was one. He very quickly started doing these mitral valve operations. He was accepted as a thoracic and heart surgeon because of his war record.

Factors in the Advance of Thoracic Surgery

Hughes: Would you say something now about some of the other things that were coming along that were essential to the advance of thoracic surgery?

Endotracheal Anesthesia

Gerbode: There was a great deal of activity in thoracic surgery. In fact, because of endotracheal anesthesia, surgeons were able to control an open chest operation much better than they could before [the war], when we didn't have very good anesthesia, didn't have anesthesiologists who could manage patients with an endotracheal tube.

Hughes: Was that a war development?

Gerbode: The war pushed it forward a lot. When the young surgeons found they could do so many operations in the chest, there were papers at all the meetings, transthoracic this and transthoracic that. One of my friends, who was mainly a cancer breast surgeon in Boston said, "I've got to figure out how to do a transthoracic breast amputation." [laughter] "It would be worth a lot."

Hughes: That's lovely.

Gerbode: He's a wonderful guy. We had a lot of fun together in Africa.
[interruption]

Hughes: You were talking about anesthesia.

Gerbode: Yes, the anesthesia improved enormously, and the anesthesiologists learned how to manage patients with an endotracheal tube. This was very important. They mainly did it with their hands at that time. They had bags which they would squeeze to bring about a respiratory movement.

Hughes: Was the anesthesiologist a member of the surgical team on a par with everybody else?

Gerbode: The anesthesiologists were not quite that far along. Well, in '49 and '50, they began to become very important.

Hughes: The British have a history of using different sorts of anesthetics than the Americans; at least that's the way it started out.

The Engstrom Volume Respirator

Gerbode: Yes, but I think the biggest advances in the open chest work came from the Swedes, because they are the ones who developed one of the first artificial respirators, the Engstrom respirator. That came out really because Engstrom was an engineer, and he had another fellow who was a physiology engineer who worked with him. These were patients who had very bad trauma to their lungs in automobile accidents, and there wasn't any way, really, to keep them going without some kind of artificial respiration. For a long time, they had to have a nurse stand there and use a bag to respire for the patient. Those who had polio and were paralyzed and couldn't breathe were put in the so-called iron lung. This is a machine where

Gerbode: the head stuck out of the end, and they had a rubber collar around the neck. The inside of it would expand or contract the chest by negative or positive pressure. We had one of these machines over here and used it for a while on polio patients, but that was a terrible way to do it.

Anyway, the Engstrom respirator was a volume respirator. It would take over the patient's respiration for long periods, months. It was a big advance.

I got to know the Swedes pretty well. I had been over there a few times. In '49 I went over there from England and saw this machine in operation. When I came back, I said we need to get an Engstrom unit, which seemed to me much better than having the anesthesiologist stand there squeezing the bag during the whole operation. The anesthesiologists said, "We can tell much better by the feel of the bag whether we're doing a good job or not." I said, "You may think that, but..."

There was only one anesthesiologist who was willing to try one of these machines. I got my friend Viking Bjork to send me a second-hand one. I didn't have enough money to buy a new one, but he gave me one which was about a year old and had it shipped over. I gave him what he thought was a fair price for it. Everybody in the place was scared to death of it. My associate, Dr. [John] Osborn, after we'd been experimenting with it for a while, wrote me a memorandum telling me he thought it was a dangerous machine that was killing patients, and we shouldn't ever use it.

Hughes: Was it killing patients?

Gerbode: No, it was saving patients. The chief of anesthesiology, [Philip] Bailey, wouldn't use it. One anesthesiologist by the name of [Ernest] Gianotti finally was willing to try it, and he began to use it very successfully.

Later on they were still not convinced, so I brought over the engineer and professor of anesthesia from the Karolinska Institute in Stockholm. I got money enough to pay for them, to bring them over to keep them here for a couple of months to work in the intensive care unit, in postoperative care, and also in the operating room. They finally were able to demonstrate that the machine was a big advance. We were the first unit in the country to use the volume respirator clinically.

Gerbode: There was another group who came along very soon afterwards. That was [William Henry] Muller and Dammon, who was then in Virginia. They had been in California. They saw the light, too, and began to use [the Engstrom respirator] and wrote some papers on it.

About this time I went to [the Peter Bent] Brigham Hospital, where Dwight Harken was then operating on quite a few mitral patients. They had a postoperative recovery room. I noticed that they were using pressure respirators, which were made by Bird, a California outfit. We used a lot of them, too. They're not bad, but they're not as good as the volume respirator. They were sort of a poor man's respirator. I said to Franny Moore, "I think that you ought to get interested in volume respirators." He said, "Write me a letter about it." So I wrote him a letter, and he wrote me back, "I've turned this over to my chief of anesthesiology, and I'll send you back a report later." So what he did, like a general, he said, "Now, you study this and tell me whether you think it's any good or not." After a couple of months, he sent me a letter and he said, "I've turned this over to Dr. So-and-so in anesthesia, and he has studied the matter and believes [volume respirators] are dangerous and shouldn't be used." But they all use them now. [laughter]

Advances Affecting Cardiovascular Surgery##

[Interview 4: August 10, 1983]

Cardiac Catheterization

Gerbode: One of the essential aspects of doing cardiac surgery is cardiac catheterization. As you know, one team got a Nobel Prize for developing cardiac catheterization.* Then young people were being trained in the technique. It was apparent that in order to carry cardiac surgery forward, you had to have a cardiac catheterization laboratory.

It was my job to get this done at the old Stanford Medical School. It was very difficult, because we had to have a room with a certain amount of equipment, in addition to getting someone to do

*Werner Forssmann, Dickinson Richards and André F. Courland received the Nobel Prize in medicine in 1956 for discoveries concerning heart catheterization and pathological changes in the circulatory system.

Gerbode: the work. It was very difficult to get this room [from] the administration. The people in control of the rooms were not quite sure whether this was going to be a big thing or not, and people like to hang on with great enthusiasm to their territorial acquisitions in any setup. So I finally got a storage room in the basement to start the lab. Then we bought some catheters and used them on experimental animals first of all. Then as time went on, we found Herbert Hultgren on the East Coast, who was trained in cardiac catheterization. He got a fellowship to come out and start the lab.

Hughes: Excuse me for interrupting you, but with a technique so relatively new, how would Hultgren have received training?

Gerbode: He trained with some people in the East who had one of the early catheterization laboratories.

Hughes: Where was he?

Gerbode: He was trained [at Thorndike Memorial Laboratory, Boston].

Hughes: So there were a few institutions that did cardiac catheterization.

Gerbode: There were a few institutions that had already started, that's right.

So [Hultgren] came out. I think it was the Giannini Foundation that paid his fellowship. But the amount they were willing to pay for a fellowship at that time was pretty small. However, he was willing to accept it as a starter. Then we had to get money for technicians as well, because somebody had to do the blood chemistries on the blood samples. We found money here and there to do that.

Dr. [Arthur] Bloomfield, who was professor of medicine at that time, said, "Well, we shouldn't charge anybody for this test the first year, because it's an experimental procedure. We have to do it for nothing." Which shows you how tentative the faculty members can be with new things. They have to go ahead very cautiously.

Hughes: Because it was experimental, in those days did you have to get any special patient consent?

Gerbode: No. At that time we didn't have to go through the business of getting informed consent. However, we would tell patients anyway what the risks were. But the risks were practically nil anyway. The patients were very anxious to find a proper diagnosis.

Gerbode: The first operations we did were simpler ones, like patent ductus and coarctation, but later, as I've indicated previously, we got into operating on blue babies, too. We had a very nice doctor in physical therapy by the name of [Fred] Northway. He had virtually a whole floor in the medical school devoted to physical therapy, and I finally persuaded him to give up one room for a cath lab. We moved from the basement to this room. Again, it was pretty primitive stuff. We had to use a portable xray to watch where the catheter was going, and that wasn't very satisfactory.

Hughes: Was this done under local anesthetic?

Gerbode: Yes. It's very simple.

Hughes: A child will lie still long enough for that?

Gerbode: Yes, the children really are quite good about it. Later on we had to use a light general anesthesia for some of the cases, but not very often.

Hughes: It's not terribly painful then?

Gerbode: No, it isn't. As soon as we were able to operate upon these children, then we had a lot more patients offered for study. The administration finally began to realize that this was something important, [and] they'd better get on with it. Hultgren did a very good job of getting it started.

Hughes: Could you explain exactly how catheterization helped diagnosis?

Gerbode: The simplest explanation is that you put a long tube in an arm vein, thread it up into the heart, and then you take blood samples in the heart, and you measure pressures in the heart. You measure pressures because if there is a blockage in, say, the pulmonary artery, and you have the catheter in the right ventricle, the pressure is very high. You can sometimes get it through the valve into the pulmonary artery, and then you can see the difference between the two pressures.

Hughes: The name Helen Taussig, of course, stands out in this area; how was she doing diagnosis before cath labs were established?

Gerbode: Mainly on physical examination and xrays.

Hughes: How did she do that?

Gerbode: Well, there was quite a bit of science and history connected with making a diagnosis without catheterization in congenital heart disease. You could tell by the contour of the heart and the physical findings, the sound of the heart. You could tell pretty well the general category of the type of congenital anomaly there was. Then they had a lot of hearts to examine postmortem, because a lot of these children were dying. So they were very careful to do postmortem examinations on them. They developed quite a science of correlating what they had seen preoperatively or before the child died with what they found in an autopsy. You can do a pretty good job of guessing what's wrong that way.

But coming back to catheterization, the other thing the catheter would do, you could take a blood sample from the chambers of the heart, and if, for example, you found the oxygen saturation in the right atrium very high, as compared with a vein, then there is certainly mixing of arterial blood with it. This meant that there was a shunt somewhere, a hole between the two sides of the heart. If you found the step-up oxygen saturation to be in the right ventricle, and it wasn't so much on the right atrium, then that meant the shunt was between the two ventricles. There were also pressure differences, too, when there was a shunt from left to right in the ventricle.

Hughes: [Werner Forssmann inserted a catheter into his own heart in 1929.] I was just wondering why it took so long for the technique to catch on.

Gerbode: Because people shuddered at the thought of sticking something up the vein into the heart. It's like murdering your sister or something. It's the same idea as you can't touch the heart and operate upon it. You're doing something which everyone said would never be possible or should never be done.

Hughes: So really, one reason that catheterization came into general practice after the war was because the heart was by then considered touchable.

Rapid Xray Film Changers

Gerbode: Yes. It was not inviolate any more, and they found out they could do it repeatedly and not harm anybody. So this made it very much more acceptable. Later on, of course, we began to inject dye into

Gerbode: the heart through the catheter and take pictures, but that's another story, because there weren't any rapid film changers available when we started, and we had to work on fixing one up ourselves. So we made the first rapid film changers in our own laboratories here.

Hughes: This is for xrays?

Gerbode: Yes.

Hughes: Because then there's a later stage with radioisotopes, is there not?

Gerbode: Yes. That's much later. But anyway, just to inject dye into the heart and follow it through with serial rapidly changing xrays could tell you where there was a hole or tell you where there [was] obstruction.

Hughes: When did that technique come in?

Gerbode: This is all about the same time. Luckily, there was a young fellow in the xray department who was a pretty good engineer, and we worked with him to develop the first film changers. I had to push the film through manually in the first ones. In fact, I've got some little white spots on my hand from having too much xray.

Hughes: Overexposure.

Gerbode: Yes, overexposure. But none of these turned to cancer.

Hughes: When you're doing something like that, is the xray beam continuously on?

Gerbode: It goes on and off, but it's pretty continuous, because it's so quick, you see. But we had aprons on to protect ourselves. Anyway, it wasn't until quite a bit later that the commercial film changer became available.

Hughes: I saw a reference to thorostrast.

Gerbode: Yes, thorostrast was the dye they were injecting.

Hughes: That's a thorium compound, isn't it?

Gerbode: Thorium. And it has iodine in it. I don't know the exact chemistry.

Hughes: I thought thorium was a no-no by then because of the danger of radiation damage and cancer.

Gerbode: [It was later stopped because it was absorbed by the spleen and other organs and was thought to be carcinogenic.]*

We used that catheterization unit for a number of years. They took the old machine down to [Palo Alto] when Stanford moved, which was just as good, because then we were able to get a more modern one here. As luck would have it, a very wealthy man came into the hospital with heart disease around that time, and he appreciated very much how well he'd been treated, not surgically, but medically. He said, "What do you need now that Stanford is moving to Palo Alto?" We said, "We need a modern angiocardiographic machine," which then cost about eighty thousand dollars, I believe. He said, "All right." So he gave us the newer model. We came out all right on that one.

Hughes: [laughs] I bet the people at Stanford were hating themselves!

Gerbode: Yes. But since then they've done very well. They have everything they need down there, so there's no worry about them.

Blood Transfusion

Hughes: What about techniques for rapid blood transfusion?

Gerbode: There wasn't anything really special about rapid transfusion. The blood came in bags, and you'd just squeeze [blood] into a vein by squeezing the bag. Or you could put a blood pressure cuff on the bag and pump it up and squeeze it that way, which works very well.

Hughes: These were techniques that you'd been using before the war as well?

Gerbode: Yes. The blood bank here in San Francisco [Irwin Memorial Blood Bank] has always done a fantastic job. [San Francisco] was among the first to have a voluntary blood bank, because of the war in the South Pacific.

*Dr. Gerbode added this comment later in the course of editing.

Hughes: Where did blood come from before the war?

Gerbode: It came from the same place, but it was on a very small scale. I can remember when there was one man in town who was very good at giving a blood transfusion. He made a living on going around to hospitals giving transfusions, just because he could cut down a vein and get a needle in it. He became a specialist in just that. Now, of course, every intern, even medical students, can get into a vein and put blood in.

Hughes: It would seem to me, though, that lack of blood would certainly hold back surgical procedures on a large scale.

Gerbode: Oh, it did.

Hughes: You need massive amounts, don't you?

Gerbode: Yes. We found that out in Europe during the war, as they did in the South Pacific. On the East Coast the blood was taken and shipped off to Europe or Africa. On the West Coast it was taken and shipped to the South Pacific, either in the form of whole blood or in the form of plasma.

Hughes: Were cross-matching techniques very sophisticated back then?

Gerbode: Yes, they were good enough.

Hughes: Do you want to say any more about penicillin? You mentioned it coming in about 1944?

Penicillin

Gerbode: It came in during the war in Europe. It was quickly distributed, and we set up a little special unit so we could have the penicillin ready to give. It was put in the charge of one of the captains in the medical department.

Hughes: Was there plenty of it?

Gerbode: There was enough. The curious thing is that we didn't get very many reactions from it. Since then, of course, it's been found that there are quite a few people who are sensitive to it.

[interruption]

Hughes: Do you have any idea why there weren't many reactions during the war?

Gerbode: No, I don't know why. I guess maybe it was not as pure as it is now. From some reason, it wasn't apparent that there were many people sensitive to it.

Hughes: Was the dosage well worked out?

Gerbode: Yes, the dosage was pretty well standardized.

Hughes: When you returned to the states, was the supply still plentiful?

Gerbode: No, it wasn't very plentiful when we came back. For civilian use it wasn't nearly as plentiful and generally used as it was during the war. But it was later, of course. There was a tremendous market, and all the companies started making it. That brought the price down and made it available very quickly. As soon as there is a big market for anything, situations improve.

Hughes: In those early postwar years, how were decisions made about which patients would receive penicillin?

Gerbode: Virtually every wounded person has an infected or contaminated wound, so you give penicillin to protect [him] against massive infection.

Hughes: I was really meaning when you were back in the states and the supply wouldn't cover everybody. Then you had to make a decision.

Gerbode: You didn't give people prophylactic penicillin, for example. You'd give it to people who really had a serious infection.

Drugs Regulating Blood Coagulation

Hughes: I see. Drugs to regulate blood coagulation.

Gerbode: We were using massive quantities of blood in extracorporeal circulation. In fact, at one point, our unit here was using 10 percent of the total output of the Irwin Memorial Blood Bank. We were the biggest users of blood because of the heart-lung machine. We were the only ones [on the West Coast] doing open heart surgery then. So we were very important customers for them. I realized very soon

Gerbode: that we needed to know more about blood coagulation and the use of heparin and how to neutralize heparin. So we got a full-time blood person by the name of Herbert Perkins as a research worker in blood.

Hughes: He was a hematologist?

Gerbode: An M.D. hematologist. He stayed with us during the formative years and helped us a lot in working up techniques to neutralize heparin, which we gave during extracorporeal circulation to prevent the blood from coagulating, and developed methods of testing how much protamine to give to neutralize heparin. He began to be pretty well known, so he was offered a job [at] Washington University in St. Louis. In any event, either that situation or another one occurred. Let us say he went to St. Louis and got an academic post and stayed there for several years and found, like a lot of people, that St. Louis is not a very nice place to live. [laughs] The weather is terribly hot in the summer and terribly cold in the winter. So he soon realized he'd rather come back to the Bay Area. So he got a job with the blood bank as a research person, and he's still there now. He is the director of research at the Irwin Memorial Blood Bank. [He is] on full-time salary there and is well known throughout the world for his contributions in blood.

The problems with blood and everything related to it are much more involved than they were in the beginning. [The problems were] with platelets and platelet transfusions and separating platelets and other cells from the blood, and then later giving red blood cells without plasma, and then giving plasma without red cells. These are all things that have developed with the use of blood. All the methods of keeping blood in good condition for longer periods of time have been worked out.

Hughes: And it was the heart-lung machine that--

Gerbode: That was part of it, yes.

Hughes: --made this knowledge essential.

Gerbode: Well, [Perkins] got started with extracorporeal circulation at our unit, and then all these other things have developed since then.

Visiting Professor at St. Bartholomew's Hospital, London,
1949-1950

Frank Rundle, George Ellis and Emmanuel Amoroso

Gerbode: In 1949 I was offered a position as an associate [in surgery] at St. Bartholomew's Hospital. It was largely because of the experimental work I was doing in a field which was opening up. Some of the papers I'd written on experimental vascular and cardiac surgery were being published. I guess I had a mini reputation at that time. Frank Rundle was the associate director of the professorial unit at St. Bartholomew's. Actually, as time went on, I was offered the job, because he wanted to go back to Australia.

Hughes: What was the unit?

Gerbode: The professorial unit is the main teaching unit, although they [also] teach in other units there.

Hughes: In surgery?

Gerbode: Yes. But they had a professorial unit in medicine as well. Then the other London hospitals had similar ones, where they were teaching medical students. That unit is the one that makes up all the schedules for the medical students and arranges the lectures and does all the teaching and research functions.

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Gerbode: The ward services are run by consultants; they teach, too, but not as much as the professorial unit.

I had an operative list that I was given almost daily. I operated very soon after I got there. I did the first patent ductus at St. Bartholomew's. I operated upon some blue children, too. This was before open heart surgery. They would just assign me some cases on the operative list every week. At that time the anesthesiologist became a very good friend of mine. His name was George Ellis, a very, very fine chief of anesthesiology, a bachelor and a very interesting man. He used kind of old fashioned medicines, but he was very good in managing an open chest, usually just by inflating a bag by hand.*

*This sentence was transferred from the session recorded on 10/23/83.

Gerbode: Anyway, Frank Rundle was the assistant director of the unit. He was like an associate professor in a medical school. He had pretty well decided he was going to leave England and go back to Australia. They wanted to get some research going at that time. I think I mentioned this before, that I was able to get permission to operate on animals at the Royal Veterinary College in London through Professor [Emmanuel Ciprian] Amoroso,* who was professor of physiology. He was an extremely kind and intelligent man, almost blind from some sort of eye disorder.

In England at that time, food was still rationed. Particularly meat and eggs were hard to find. "Amo" was also the chief physician for the London zoo, and every once in a while an animal would disappear somehow [laughter], and then I'd get a leg of something or other, which might have been a goat or pig. It would arrive at the house and keep us supplied with some meat. Also, I was doing vascular and cardiovascular and pulmonary research in the [Royal] Veterinary College which had an abundant supply of animals, dogs, sheep and goats.

Hughes: Because of this connection with Amoroso.

Gerbode: Because the Royal Veterinary College had to be supplied with animals, so we had plenty of animals to work on. I did a lot of research there. At the same time, there was a neurosurgical group doing a lot of research, too. Their animals were always sacrificed at the end of their experiments, so they quickly found it was very desirable to do their experiments on sheep or goats. So that way they had a good supply of meat, too. [laughter] The one who worked with me at the time was Jerry Taylor, who had been a fellow here with me in San Francisco.

Incidentally, Rundle came over here and was the first fellow I had. He had been at the Mass [Massachusetts] General Hospital previously and found that he really had a hard time getting laboratory time, and he couldn't really get anything going. But I gave him lots of opportunity in the lab here. It was then that I got to know him, and I think that's probably why I was invited to go over there the following year. He came, I guess, in 1947 or '48.

Jerry Taylor came later. Jerry was just a young man in the department. He worked with me in the dog lab at the Royal Veterinary College. He got a young girl who was trying to be a vet to come help us as well, and he finally married her and had some

*Professor Amoroso died 10/30/82 at the age of 81.

Gerbode: children by her. But I think they've subsequently been divorced. She was a great help to us, because she loved to go back on weekends and take care of the animals. She just thought that was a great thing to do, and she was very good at it.

Dog Surgeon

Hughes: All this was unusual for British surgery at this time?

Gerbode: Oh, yes. I mentioned before that most of the British surgeons didn't believe in experimental surgery. They called the people like me "dog surgeons." Not all of them, but some did.

Hughes: How did they expect surgeons to learn?

Gerbode: They would just start doing things on human beings. Of course, they weren't doing very much. They were doing what you might call old-fashioned surgery, because they weren't doing vascular or cardiac surgery, and they were just beginning to do thoracic surgery. They were operating on lung tumors or bronchiectasis or tuberculosis; that was acceptable, and that was about it. There were a few people who recognized that to get on in a new field, you had to use experimental animals. Otherwise you'd be doing experiments on humans.

Hughes: Is that what Rundle recognized?

Gerbode: He recognized that I could do it. He saw in our old lab [at Stanford San Francisco] experiments that we were able to conduct, and Amoroso in London believed in it, too. That's why he was very anxious to help me.

Hughes: It sounds as if you were very fortunate in having these two connections. You could have gotten over there and found you had no [opportunity for research].

Gerbode: It was. Well, I wouldn't have gone unless I had a pretty good prospect of being able to do something. The dean was a fellow by the name of Harris, and after I'd been there for a few months, he began to ask whether I would be interested in staying. He told me how lovely it was to have a house in the country, and so forth and so on. But...

Hughes: It didn't work. [laughs]

Gerbode: No, I didn't want to do that. There were too many obstacles, and there were too many built-in restraints in London--even in the medical schools and hospitals. You didn't have the freedom that you have in this country in getting on with what you wanted to do.

Hughes: Are you thinking particularly of the hierarchy?

Gerbode: Yes, and the concepts. The professor of surgery, Sir James Patterson-Ross, had a laboratory for experimental surgery built in the hospital, but it was built in a very strange way with cubicles and a lot of things which were not modern in concept. It was for that reason that I went over to the veterinary college, because there we had a big room with lots of space and people to take care of the animals. It was a different concept.

Research on Vascular Anastomoses and Respiratory Problems

Hughes: Did the type of experimentation you were doing stay pretty much the same? Were you still working on vascular anastomoses?

Gerbode: Oh, yes, it was directly in front of doing open heart surgery. It was the leading edge of getting there, you might say.

Hughes: And was that what you were consciously working toward?

Gerbode: Yes. I didn't have an extracorporeal machine at that time. But the techniques we were using were the forerunners of what we were able to use later on when we did get an extracorporeal machine.

Hughes: Would you explain what those techniques were?

Gerbode: We were doing vascular anastomoses and experiments on the problems of respiration in thoracic surgery.

Hughes: There were several papers on positive pulmonary pressure. Was that what you were thinking about?

Gerbode: Yes, that's what we were thinking about, what was the best pressure to use and how to control respiration. There were some concepts based on experimental surgery which I felt at the time were probably wrong. So we devised some experiments to prove that they were probably wrong. It takes a while to do these things, you know.

Hughes: What were the wrong concepts?

Gerbode: One of the concepts was why did the blood pressure go down when there was too much intrapulmonary alveolar pressure. The old concept was that the heart was squeezed by the lungs, and that's why the pressure went down. My feeling was that the pressure went down mainly because the alveolar circulation was interfered with by too much intrapulmonary pressure at the capillary level.

Hughes: How do you get a feeling like that? Observation?

Gerbode: No, it's just that you think about a concept, and you think about whether it's right or wrong. If you think it's not right, you have to prove that it isn't right. That's where experimental work comes in, you see. Or if you think something is right, and everybody else thinks it isn't right, then you have to show why it's right.

Hughes: But the hard part is getting the idea to counter the existing idea.

Gerbode: Well, I suppose that is hard, but you're not filled with some of these things every day. You think of one thing, and then you have to work on it for months to prove it so or dispose it so. That's what experimental surgery is about.

Anyway, we had a wonderful year there in London. I made lots of friends and have kept up an association with England ever since in various ways. I had made some friends among the English surgeons during the war, mainly in Sicily. They were friends when I got to London, and we saw them and got interested in their careers, and this was very nice for us.

Honorary Perpetual Student

Gerbode: Later on, because of having been at St. Bartholomew's, they made me an honorary perpetual student, which is the only honorary degree they can give at St. Bartholomew's. I guess when I was made an honorary perpetual student, there had only been seventeen before, or maybe I was the seventeenth. They had a little ceremony and gave me three huge volumes of the history of St. Bartholomew's Hospital, which started in the fifteenth century. They said at the time, "We have to make you a perpetual student because it's going to take you that long to read these three books." So anyway, that meant that I could wear the honors tie of St. Bartholomew's. They have two different kinds of ties. They have one [for] a regular graduate.

Gerbode: Then they have an honors tie, too, which is slightly different, and it has a little bit of the colors of Cambridge University built into the little diagram because they were associated with Cambridge University for a long time.

I'm going back in September [1983], because they're having a big banquet at St. Bartholomew's. There's a huge hall there, the Great Hall of St. Bartholomew's, with a high ceiling and pictures of all the old famous surgeons who have been there. They also have a list of people who have made contributions. Mrs. So-and-So gave fifty pence to a certain fund. These names are all written on the old wall there. And the pictures of the famous men, Percival Pott and many of the others who have been there.

The hospital is in a section of London called Smithfield. Smithfield was Smoothfield at one time, and that's where the farmers brought in their produce to sell. It was a smooth field. That later became Smithfield, and that's where the name Smithfield ham came from. Across the square is the wholesale market for all the meat being distributed in London. It's a huge building, and the wholesalers go in there and look at the carcasses and pick out the ones they want to buy.

Hughes: An historic area.

Gerbode: The hospital was started by--I think the monk's name was Ruher-- in the fifteenth century. It was set up as a small dispensary type of a hospital. They didn't have much else to do except lance boils and operate on a few things, take care of a few injuries. But it's a very famous hospital in England. As they say, you can always tell a Barts man, but you can't tell him very much. [laughter]

American and British Postwar Surgery: A Comparison

Hughes: Do you care to say anything more about the comparison between American and British surgery in the postwar years?

Gerbode: There have always been excellent surgeons in England. I'd say that the general level of surgery in England was very high and probably across the board better than the surgery in this country across the board, because we permitted a great many practitioners who had not been trained in surgery, to do surgery. We still have, unfortunately, too many of those around, whereas in England major

Gerbode: surgery was done in big hospitals by men who were consultants after they had been trained for some years. Sometimes they weren't as modern as they might be, but they were good anyway. They followed concepts which were pretty well developed, and technically they did good work. They always had good assistants and good people to take care of the patients afterwards.

The other thing about the British hospitals is that the nurses have a great deal to say about the patients. They take the patients very seriously, and if they find that a patient hasn't any place to go home, they'll keep the patient [at the hospital] until they feel it's nice to send the patient home. They don't allow the surgeons into the surgical wards until a certain time, ten o'clock or something like that, because they say, "This is our time to clean up the patients and get them set so that you can come around and have your ward rounds at ten o'clock." I was trained [in the U.S.] to arrive at the hospital at seven thirty or eight o'clock in the morning, and [in London] I'd get there every day, and I couldn't do anything. They would look at me as though I was a little bit nutty by getting there so early.

Hughes: Did you find that in general British surgeons were open to new ideas?

Gerbode: I think after the war they were a little more receptive to new ideas. As I say, British surgery had been good for a long time. It didn't set the standard for the training of surgeons as much as the Germans in the prewar period. The Germans really were the ones who set the standards for the training of surgeons and were the basis for what later developed as the surgical residency type of training in this country. That was brought over by [William Stewart] Halsted and some others from Germany. Halsted is credited with being the first to introduce the resident surgery training program, which is about five years of graduated responsibility. This is still called the Halsted method in this country.

Hughes: Did the British have something similar?

Gerbode: Not really. Not quite as formal as the Germans. But they kept their young men around in hospitals for a long time before they were made consultants.

Hughes: They still do.

Gerbode: So they did have graduated responsibility in a way, but they didn't quite do it as methodically as the Germans. But then, of course there have been great [British] surgeons. [Joseph Jackson] Lister and his technique of preventing wound infection set the standard for the whole world, and there were other men who did remarkable things in surgery.

Hughes: How do you explain the fact that in your field, in cardiovascular surgery, the British weren't even trying?

Gerbode: No, they didn't get it started until [after] we had gotten started. As I mentioned before, one of the main reasons, I think, was that there were a lot of young well-trained [American] surgeons who went into the war from universities, from residencies and from minor academic positions. Then when they came back from the war, many of them wanted to get back into university life, but there wasn't really much to do. They weren't given clinical responsibility, so they went into the dog lab. So you had all these bright young lads working in the dog labs while they were waiting to have a chance at clinical surgery. They were teaching, and they also were pretty experienced in managing big-time surgery because of the war, and they had a lot of confidence. Furthermore, they could see what the future was because of some advances that I mentioned before, [which] sort of opened the door. Then once the door was opened, inside the room were hundreds of people who needed to have operations-- children mainly at that time.

Hughes: The British, however, would have had similar opportunities, except for the opportunity to do research.

Gerbode: That's right.

Hughes: Probably that was the key.

Gerbode: That's right. They didn't have the laboratories to do the research. Furthermore, they didn't encourage people to do the research. They didn't give them an opportunity. Whereas in this country, luckily we had federal money given, pumped into the universities, to train young people. For example, almost from the very beginning, as soon as I began to write some papers [after World War II], I was given a training program by NIH, to train one or two cardiac surgeons who had already trained in general surgery. Uncle Sam paid for it.

Hughes: And the [British] Medical Research Council, was that formed much later?

Gerbode: This was when it was starting.

Hughes: But they weren't funding experimental surgery?

Gerbode: Not very much--it was very, very difficult. To do experimental surgery, you were supposed to have a veterinary license at that time. So they said if you are going to operate on animals, you're going to have to get a veterinary license. So I said, "Okay, I'll apply for one," and I got it the day I left, almost a year later. [laughter]

Cardiovascular Surgery

Hughes: Now that we've talked so long, maybe we've covered everything in this quote. You start the paper, which is called "Experimental Surgery of the Heart and Great Blood Vessels"*--you're the first author; the second author is F.F. Rundle--with the following paragraph:

Substantial as are the recent advances in the therapy of the congenital defects, it is not too much to say that cardiovascular surgery is still in its infancy. Thus the chief scourge, coronary artery disease, is still beyond surgical grasp. So, too, are the chronic valvular defects. Yet we are conscious today that the field is developing rapidly. Further spectacular advances may well lie just ahead, for the surgeon has new and powerful weapons at hand, drugs to regulate the coagulability of the blood, penicillin, blood transfusions, controlled respiration during thoracotomy, and methods for vascular suture and hemostasis.

I was wondering first of all what you were thinking about when you said cardiovascular surgery is still in its infancy.

Gerbode: We didn't know exactly how to close a hole in the heart. It wasn't until later that the patient's own pericardium was used, or various cloth materials, the same as for vascular grafts.

Hughes: Were there not people operating for holes in the heart before the war?

Gerbode: No.

*Stanford Medical Bulletin 6 :247-256, 1948.

Hypothermia*

Gerbode: Very soon after the war, hypothermia came into being, mainly [due to] the early work by [Wilfred G.] Bigelow in Toronto and [C. Walton] Lillehei and [John F.] Lewis in Minnesota. [Lillehei and Lewis] were in Dr. [Owen H.] Wangensteen's department there. They collectively found that they could reduce the body temperature of a patient and then quickly do an intracardiac operation.

Hughes: How much time did they have?

Gerbode: They had about fifteen or twenty minutes. That meant in those days that they could fix a hole in the right side of the heart, in the atrium, because it was accessible, and they could relieve pulmonary stenosis, which was an obstruction of the outflow track of the right ventricle.

This also led, under Lillehei's direction, to the use of cross-circulation to do intracardiac surgery. He found out he needed more time, and so he operated on children with the mother being the donor. They'd hitch the mother to the child or the baby. The mother would supply the circulation while the baby was operated upon. This was quite complicated and led to a fair number of mishaps. But it did show that if you could use some kind of an extracorporeal arrangement, that you could open the heart and operate upon it.**

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Gerbode: Anyway, hypothermia came in, and then some people even tried to close holes in the ventricles with hypothermia. But that didn't work very well, because it takes a little longer, and it's more complicated than closing a hole on the atrial side.

Hughes: It's more complicated anatomically, you mean?

Gerbode: Yes. You have to do more sewing, and it's harder to do it.

Hughes: This is going back to something you said just a minute ago, that the right atrium is more accessible. I don't understand that.

*See the session recorded on 8/16/83, pp. 107-109, for further discussion of hypothermia.

**A discussion of heart-lung machines was moved to the session recorded on 8/16/83.

Gerbode: It's on the right side of the heart, and either with a medial or a right thoracotomy, it's right there in front of you. You can cut into the atrium and sew on it and take pieces of it out without interfering with the circulation. The atrium will tolerate that.

Hughes: But wasn't that a new concept in itself, that you could do these things without interfering with the circulation.

Gerbode: Well, it wasn't a concept; it was a finding, really.

Vascular Anastomoses to the Heart

Hughes: Was that your finding when you were doing the work on vascular anastomoses?

Gerbode: Yes, it was. When I was doing experimental surgery, I found that I could sew the atrium and do anastomoses to it. In fact, I wrote some papers on it.

Hughes: Right after the war.

Gerbode: Yes.

Hughes: Now, was that a first? You were working with the superior vena cava, as I recall.

Gerbode: Yes, that's right. It was among the first, but I'm sure other people were working, not exactly the same way that I was, but they were finding out they could cut into the heart and sew it up.

Hughes: I read something that gave me the impression that keeping the heart in its natural position was very important. One of Elliott Cutler's problems apparently was that he was displacing the heart as he was operating, and it was only--

Gerbode: Yes, it was. You can't do that.

Hughes: --later that it was found that you really had to keep the heart--

Gerbode: You had to keep the heart--if it was going to pump--where it belongs.

Hughes: The reason I bring this up now is that when you were doing these anastomoses, you really had to be very careful about how you were handling [the heart].

Gerbode: You had to be very careful. You couldn't displace the heart very much, because then the patient--the dog--would go into shock. So you had to do these things with the heart in situ, in its customary place.

Hughes: What's the mechanism there?

Gerbode: It's a complicated mechanism. Part of it has to do with the nerve supply to the heart. But I think also it means that the valves get distorted when you move the heart, and they don't function as well.

IV THE DEVELOPMENT OF CARDIOVASCULAR SURGERY

[Interview 5: August 16, 1983]##

The 1983 California State Bill on Animal Experimentation

Gerbode: Even now there is a bill before our state legislature to limit the use of animals for experimental purposes. This is extremely foolish, and is mainly sponsored by southern Californians, mostly in Hollywood. What they don't realize is that animals are sacrificed in pounds every year by the thousands. In San Francisco alone we kill five thousand dogs a year, stray dogs that have been cast out by people who don't want them. These animals could be used very beneficially for humanity for experimental projects of a wide variety. The animals do not suffer. They're all anesthetized or very carefully taken care of. This work is always supervised by special people who are watching constantly about whether or not bad treatment is given to the animals. High standards have to be maintained because we get government projects, and they maintain surveillance over the work.

Oxygenators, Hypothermia and Open Heart Surgery*

Gerbode: When we came back from the war, most of us, as I mentioned before, didn't have very much clinical work to do, so we were interested in working on what we thought was the frontier of medicine, and we turned to the laboratory. Just with regard to open heart surgery,

*See the session recorded 4/23/84, pp. 349-352, for further discussion of these topics.

Gerbode: I performed over three hundred animal experiments before I did a human open heart operation. You must realize in those times we didn't even know what type of tube to pump blood through. In England they were still using rubber tubes, which is of course very bad. It wasn't until industry got into the picture, realizing that there was going to be a huge market in plastics, that they became competitive. They knew that there was going to be quite a bit of money in it, as there has been.

John and Maly Gibbon: The First Heart-Lung Machine*

Gerbode: The first heart-lung machine was developed by Dr. John Gibbon and his wife Maly. He started his work in Boston when he was a young staff person before the war. He had a young lady who had a pulmonary embolus, and he'd watched her die because there wasn't anything they could do to get that blood clot out of her lung. He said to himself, "If I only had a machine that would take over the pumping and oxygenating of the blood, then I could have taken that clot out of there." That's when he and his wife Maly [Mary Hopkinson] started working on a heart-lung machine. Jack has since died, but his wife now lives in the Boston area. They worked together in the laboratory for years. Subsequently, when he was made professor of surgery at Jefferson Medical School in Philadelphia, he continued his work there, and he was helped financially by the IBM Corporation.

Jack was the first one to use extracorporeal circulation with a heart-lung machine in the successful closure of an atrial-septal defect. So not only did he have the first heart-lung machine, but he was the first one to use it successfully.

Hughes: This was in the early '50s?

Gerbode: Yes. Unfortunately, his machine was rather complicated, difficult to run.

*This section incorporates material recorded on 8/10/83.

John Kirklin and the Gibbon Heart-Lung Machine

Gerbode: It was a screen type of oxygenator and was only used extensively in one place in the country, and that was with Dr. [John W.] Kirklin at the Mayo Clinic. He quickly used it, or a modification of it, on a large series of patients at the Mayo. Dr. Gibbon himself did the first successful patient with that machine, but he did not have the volume nor the organization to do lots of cases, which was true of Dr. Kirklin.

Hughes: Was it deliberate that Kirklin was the only one that had access to the machine?

Gerbode: The Mayo Clinic decided that it was very important to get into the field of open heart surgery. They have tremendous resources and a big organization, so they can go into anything that way with lots of people participating. Then the Mayo also is in the center of the United States and is a place where they collect all kinds of cases. They made it advantageous for the cardiac patients to go there.

Hughes: Why did the Mayo decide that cardiovascular surgery was the thing?

Gerbode: They always like to get into whatever is going to be important in medicine or surgery, and they are financially so well off that they can do it. They can get resources, spend money on equipment without delay or the problems that you might find at a university. So they got into the picture very quickly.

The DeWall Bubble Oxygenator

Gerbode: Working in Walt Lillehei's laboratory was a fellow by the name of [Richard A.] DeWall. DeWall used the principle of running oxygen through blood to oxygenate it. The oxygen would drive out the carbon dioxide, so he had blood that was fully saturated with oxygen without much CO₂. He made what is called the DeWall bubble oxygenator, which is the prototype for the most widely used type of oxygenator everywhere now. It's not the best, but it's practical and it's cheap and easy to run, and this has big advantages. For a short case it's adequate, but for a long case it isn't.

Hughes: Why is that?

Gerbode: Exposing blood directly to oxygen and bubbling it through a device such as they use requires some method of getting the bubbles out, which they do with chemicals or collecting tubes. But they can't get them all out. There are still microbubbles in the blood, and the body doesn't like those. The body will tolerate a certain number of them for a while, but if the operation goes on for three or four hours, then so many of them accumulate that organs fail, and the brain is damaged, too.

Hughes: So the membrane oxygenator would be used for lengthy operations?

Gerbode: People realized that the bubble oxygenator was useful and practical up to a certain point, but the membrane oxygenator was a more ideal [device], because there was not a direct interface between the oxygen and the blood. The oxygen had to diffuse through a membrane to get to the blood, and the CO₂ had to go out through that membrane, which is better. In other words, the blood wasn't exposed to air or the atmosphere. One of the first to work on this principle was George [H.A.] Clowes, [Jr.].

[Interruption]

George Clowes and the Membrane Oxygenator

Gerbode: George Clowes developed a membrane type of oxygenator which was very complicated to run, but it actually demonstrated that one could use a device of this kind, simplified if possible, for open heart surgery, and that it would probably be better than the other types.

The Bramson Membrane Oxygenator

Gerbode: This led a lot of laboratories, including our own, to get started in developing a membrane oxygenator. I am rather sad to say that we have spent approximately twenty years on this project. We finally went through several versions, one of which I used in about two hundred fifty cases, which was a prototype for one which will hopefully be made commercially very soon by the Harvey Company.

Gerbode: The problem with all these devices is that things have to be simple to use and be economical. So it's been a problem to make it so simple that any professional could use it and then have it disposable and not have to be resterilized or cleaned, because that increases labor and raises the cost a good deal.

There have been three or four membrane oxygenators developed since Clowes introduced it. They are sold commercially by a number of firms now. We think the one we've been working on is going to be better, but we'll have to wait and see whether it will be. The tests seem to indicate that it will be. It takes an awful lot of money to develop something like this. I can't tell you how much money we've spent on this one project, but it's probably a hundred and fifty or two hundred thousand dollars. The company that is working on it has already spent a half a million dollars to bring it up to commercial availability.

Hughes: Was that a competitive matter?

Gerbode: Oh, yes, it's competition against several others which are on the market already. People, logically, will pick the one which works the best and is cheapest.

Hughes: What are the advantages of yours?

Gerbode: One advantage is that it has a built-in heat exchanger, so you can cool and warm the blood easily, which means that you can use hypothermia, reduced body temperature, quite simply with the device. Some of the other devices require another instrument to raise or lower the body temperature. The other thing is that it is extremely atraumatic. Also it preserves the platelets better than some of the others, and platelets are very important in blood coagulation.

Hughes: I assume it's a synthetic material from which it's made.

Gerbode: It's mainly design, the internal method of oxygenating the blood. The blood goes through a very thin layer while it's exposed to the oxygen through a membrane. The way that turbulence is caused inside, in the machine, either damages the blood or doesn't. It either oxygenates it perfectly or it doesn't. And we've done so many experiments on how to run the blood through the machine to make it atraumatic and efficient that we think that maybe we're better than others in that respect.

Hughes: Were you influenced at all in the theoretical stage by anatomy, by how nature does it?

Gerbode: Oh, yes! You see, this oxygenator is like the lung. It's like the blood going through capillaries in the lung. And there the red cells and white cells tumble around as they go through, and the blood is turbulent, so that all the cells will be exposed to oxygen. You do the same thing with the membrane oxygenator.

Hughes: One of the real problems in the early days was hemolysis, was it not?

Gerbode: Hemolysis is another one. Our oxygenator has a very low hemolysis rate. The bubble oxygenator has a very high incidence of hemolysis, and the longer you use it, the more hemolysis there is. These are some of the factors.

It's also been shown that a membrane oxygenator is really well tested by using it on a baby, because the baby is a very fragile little human being, and if you use coarse equipment like a bubble oxygenator on a baby, unless you operate quickly, the baby will get sick or maybe die. But it's been shown by several centers in the world that you can put a baby on a membrane oxygenator much more safely to do various things. We're operating on small children and babies much more frequently than when we started.

Hughes: Because you trust the machine?

Gerbode: And because it's better to correct many of these things early in infancy, before secondary effects from the lesion they have begun to affect the anatomy of the child.

Hughes: How early?

Gerbode: Some open heart procedures are done in the first year, maybe six to twelve months. And there are other ones--like a patent ductus or a Blalock procedure--which can be done very soon after birth with a relatively low mortality rate.

Hughes: Even with surgical expertise, that would have been impossible before you had an adequate heart-lung machine.

Gerbode: Yes. But a lot of these things, like doing a ductus or Blalock procedure early, [are] possible because of better anesthesia, specialized anesthesia, and understanding the physiology of a big operation in a baby, what not to do. Fluid balance and such things as how much pressure you use in the anesthetic machine, and the delicacy of the administration of the anesthetic. Some anesthesiologists just don't like to touch babies, because they're too apprehensive.

- Hughes: That, then, is not a standard part of a residency in anesthesia?
- Gerbode: Oh, I think most residents have at least to be there when babies are done, but I don't think a first-year or second-year resident in anesthesia would be given a baby to do until they were pretty sure he knew what he was about.
- Hughes: I hope not. You mentioned in the case of the early British machines that the rubber tubes were causing damage.
- Gerbode: Yes. It's even true now. Russia and China don't have a very good plastic industry. China has virtually none. So they take the tubes which they've used to conduct blood and clean them with brushes and chemicals in a special room. Then they're all hung up like spaghetti on the wall to dry out. Then they're sterilized. But you cannot really clean a tube perfectly that way. There are always tiny bits of foreign material still left in there, and the body senses that very quickly. So when you use equipment like that, there are fevers and sometimes infections. Where the tube is put into the vein, in an arm, it will thrombose quite easily or get infected.
- Hughes: So that's yet another advantage of your machine; the very fact that you're seeking to make it disposable isn't just a money matter, it's also a safety precaution.
- Gerbode: Well, you know, it is a money matter in the end, because you know the one who can produce the best disposable machine is the one that's going to be sold.

Hypothermia (Continued)

- Hughes: You mentioned hypothermia and talked a little bit about it last time, but I'm curious about the fact that hypothermia and the heart-lung machine were really going in tandem, and yet it took a number of years, maybe ten years, before the two techniques were put together. Why was that?
- Gerbode: The main reason that hypothermia took hold in the beginning and was used by people like Henry Swan, John Lewis, and Walt Lillehei, among others, was that they didn't trust the heart-lung machine. Maybe this was justified, because the early heart-lung machines were traumatic and not terribly good. So they would choose

- Gerbode: operations which they could do under reduced body temperature, which would last only, say, ten minutes. They did them quickly and got in and out in a hurry. When they tried to use hypothermia to close ventricular septal defects, it would take twenty minutes or thirty minutes, and then they got into bad trouble.
- Hughes: That would be impossible, wouldn't it?
- Gerbode: It's possible, but it's very, very risky. You never know for sure what will be found. The advantage of the heart-lung machine is that if you find something that you didn't quite expect, or if you find the repair is more difficult than a standard repair, there is time to make the adjustment. Although the longer you stay on the machine, the harder it is on the patient, you can keep a good machine going for four or five or six hours--not a bubble oxygenator, but a membrane--and still the patient won't be bothered too much by it.
- Hughes: Did you yourself ever use hypothermia?
- Gerbode: Yes, I've used hypothermia, but I avoided the broad use of it for open heart surgery, because I didn't want to waste time on it. I thought if I got started up that path, it would take me away from [developing] a heart-lung machine that worked.
- Hughes: So you were convinced from the start that the heart-lung machine was possible.
- Gerbode: Oh, yes, possible and the best. So instead of worrying about how much to use hypothermia, I spent all the time in the laboratory trying to develop a machine. We have used hypothermia with the heart-lung machine, and most people do, because it reduces the necessity for full take-over of the circulation. In other words, you can take over maybe half or two-thirds of the circulation and use modest hypothermia to protect the body for the reduced amount of circulation that is necessary [at lower body temperatures].
- Hughes: Were you also involved in research to determine the proper level of hypothermia?
- Gerbode: Yes, we did quite a bit of that. We did a whole bunch of patients using hypothermia for brief operations, not requiring more than, say, ten or fifteen minutes. But I never liked it very much. It was too scary. So now, of course, hypothermia of the heart itself--in other words, using the heart-lung machine and using cold plus chemicals to stop the heart during open heart surgery or valve replacement or valve repair--is the standard procedure. Everybody

Gerbode: uses it now. They inject cold solutions into the coronaries through the root of the aorta to stop the heart, make it quiet, and then you have a bloodless field which isn't moving, so you can operate faster and it's better.

Hughes: Is that the way you initially used hypothermia?

Gerbode: No. We didn't use that until after it was introduced in Germany, mainly, and after a few other places in this country started using it. We were not very early in the development of hypothermia of the heart.

Hughes: I've seen pictures of bathtubs in the operating theater.

Gerbode: Yes. [laughter] That was total body hypothermia, mainly for children. Some people even now use total circulatory arrest for complicated repair of children's hearts. The Japanese and some surgeons in New Zealand have the child in a tub of ice-cold water and reduced the body temperature to twenty or twenty-one degrees, and then operated quickly, and then raised the body temperature again after the repair.

Hughes: Is that [done with] children particularly because they can bounce back better?

Gerbode: They bounce back. They can respond to this better than an adult can, and of course they're smaller, so you can [better] control the [temperature] of the mass of the child.

Hughes: I understand that was quite a problem: the temperature would drop after you thought you had reached the proper level.

Gerbode: Yes, it goes down even more, and it's slow to recover, too. We find, for example, when we use hypothermia with a heart-lung machine and we think that the body temperature is thirty-seven in the operating room, by the time the patient is in the recovery room, very often it's lower. So we always quickly start putting blankets on to keep the patient warm so that won't happen.

Teamwork

Hughes: Perhaps this is the time to talk about teamwork. I think it underlies a lot of your research, but in one paper you particularly stress the importance of teamwork in cardiovascular surgery. I was wondering if you could say a little more about this, because I think, again, this was a postwar realization, was it not?

Gerbode: Although the surgeon always gets credit or abuse for whatever happens during a heart operation, actually how well he does really depends on his team. The best results are found in places where there is good teamwork: good assistants, good nurses, excellent postoperative care, and the use of other ancillary personnel who understand the problem.

One of the first things I found out when we were experimenting and trying to develop the whole field was that we were constantly trying to invent things, which was really a form of biomedical engineering--electronic devices, gadgets of different kinds. We were constantly going off to instrument makers and other people trying to get them to understand what we wanted, and to get them to make it. Well, the work was frequently crude and, not being engineers, we really didn't do it very well.

M.L. Bramson and the Membrane Oxygenator

Gerbode: So one day I met a fellow by the name of M[ogens] L. Bramson, who was working at that time as a consultant with Mr. Ed Heller. Ed was terminating [his] work, because [he] felt that Mr. Bramson had done everything he could for them--his research involved byproducts of wood. I met Mr. Bramson in Paris at a cocktail party, and I said, "What are you doing?" He said, "I'm an engineer, but I'm terminating with Mr. Heller." I said, "Would you be interested in biomedical engineering?" He said, "Of course I would. I'd be very interested."

So I brought him into our unit and got him the first established investigatorship for a non-M.D. in the American Heart Association. Everybody said you can't have the American Heart Association paying for an established investigator unless he's an M.D. I said, "Why not?" They finally gave him an investigatorship. The money wasn't very great. We had to supplement it a good deal, but still the principle was there. Now, of course, everywhere in the world there are all sorts of engineers and people working with doctors.

Hughes: This was now maybe early '50s, would you say?

Gerbode: Yes, early '50s. We called him "Bram." That's his statue over there. Bram very quickly mastered all the mathematics and physiological principles of dealing with blood and circulation and, being a very brilliant man, he quickly saw the problems and began

Gerbode: to try to solve them. Well, making a membrane oxygenator in the early 1950s was not anything you did in a few months. We realized that it was going to take a long time, and we had [a backlog of] patients waiting for operation. So he and I and Dr. Osborn made another type of disk oxygenator as a temporary expedient, waiting for the years to roll by before the membrane would be ready. We used that disk oxygenator for maybe three hundred cases or more. It was very good, atraumatic, and we could control body temperature very well with it.

In any event, Bram worked shoulder to shoulder with us all the way through. Finally, it got to the point of having our first prototype membrane oxygenator, which was used in prolonged profusions, mainly with the help of Dr. [Donald] Hill, who took over the project of applying it to traumatic lungs and viral pneumonia patients who were really in desperate shape because of their reduced pulmonary capacity. Bram participated in all the early experiments using that prototype membrane oxygenator. We found that we could keep a dog alive for days with it, which was something you couldn't do with a bubble oxygenator. And we finally applied it to human beings in a project sponsored by the National Institutes of Health. This was a cooperative project with a number of other centers in the world. It was a controlled experiment of alternating patients to see whether or not using a device like that in patients who were dying from severe pulmonary insufficiency would work.

We found out [we could]

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Gerbode: ...quite safely keep a patient alive for days. The longest one was twenty-three days. We kept a patient on almost complete control of the lungs with a machine for twenty-three days. That's a record, I think, and it showed that a membrane oxygenator could be a very useful tool in various types of pulmonary insufficiency.

Industrial Development of the Membrane Oxygenator*

Gerbode: We finally got our membrane oxygenator up to the point where it had to be further developed by industry, because you can show the value of a certain concept or a certain group of instruments to do a

*This section was moved from the session recorded on 9/27/83.

Gerbode: certain job biologically, but if you're going to apply that to thousands of people, then you have to get into a different category of investigation. So we turned over our patents to our membrane oxygenator to [the Harvey] Company. They meanwhile spent about a million dollars developing it to the point where it could be produced on a large scale for daily use and made safe.

Hughes: Does that company have large research labs?

Gerbode: Yes.

Hughes: How do they handle the patient trial aspect of it?

Gerbode: They farm it out. For example, this membrane oxygenator was tried in a university hospital with a certain number of patients, very carefully observed, very carefully documented, and proven to be quite effective.

Hughes: The company made the choice?

Gerbode: The company made the choice where to do it. They had to get somebody to agree to do it. They were required to obtain FDA* approval. Usually good places will try things out if they look safe. These new things are all presented to patients clearly, so nobody is victimized by any experiment.

Hughes: And the company pays the hospital for doing the testing?

Gerbode: Sometimes, or they give them all the equipment and everything to do it with.

Hughes: Does the government regulate this in some way?

Gerbode: Oh yes. You have to submit the protocols. You have to go through a certain testing protocol with animals first. That's evaluated by the FDA and by peer committees, and if that is satisfactory, then the patient testing is approved, and they will designate a certain number of patients to be done, and that certain observations have to be made on these patients.

Hughes: A panel makes those decisions?

*Federal Drug Administration

- Gerbode: Yes. A peer group outlines what has to be done. So with our membrane oxygenator, we've gone through all this already, and now the company is just getting it down to the point where they can produce the device with virtually no possibility of any failure in any part of it.
- Hughes: Remarkable. To graduate from one stage to the next, i.e., from the animal experimentation to the human, is solely based on survival rate?
- Gerbode: No. It's a matter of making certain observations, and these observations are designated by a peer group of experts. For example, [if] you're using something in which blood is being used, you can't have a certain amount of hemolysis, you can't lose platelets, you can't lose red cells. A lot of criteria are set up. The FDA has done this, acting on advice from experts.
- Hughes: Yet when it comes to pure surgical procedures, without the use of artificial devices of any kind, there's no such regulation, is there?
- Gerbode: If you're using a new surgical procedure which has been more or less established, you have to go to the patient and say, this is still somewhat experimental. You require the patient to sign a document stating that he understands, because otherwise he might sue you.
- Hughes: But that's a different sort of regulation.
- Gerbode: Yes.

The Disk Oxygenator

- Hughes: How did the disk oxygenator fit into the picture?
- Gerbode: The disk oxygenator was a temporary thing which we were using because we couldn't get the membrane oxygenator working properly. We finally did, but it was only a prototype. The one we are hoping to get on the market soon is an outgrowth of that prototype, but is a much better device and very easy to use, and it's disposable.
- Hughes: Do you remember the date when the disk oxygenator was first used?
- Gerbode: It was late '50s, early '60s.
- Hughes: Was that always just a one-model machine?

Gerbode: We had twelve of those devices, and they were rotated. They were taken over to Cutter Laboratories [in Berkeley] in Mr. Bramson's car and completely cleaned and sterilized and brought back ready to use. It was a terribly cumbersome, difficult process. But we found that unless we removed every tiny bit of blood or protein from the inside of that device, patients would get the same thing they get when you put blood through a rubber tube. They get fevers and various other things which are very disagreeable.

Hughes: Why did Cutter have the sterilizing set-up?

Gerbode: We'd been working with Cutter for quite a while on devices of various kinds. In fact, we worked with them until they moved to Santa Ana a few years ago. We were always having some kind of a project. In fact, they worked with us in the later development of the now being finalized membrane oxygenator. They shared in our patents, too, because there was a lot of work in using membranes and how to put them together and how to test them, which Cutter helped us with.

Hughes: They had a whole research staff?

Gerbode: They had a whole research room set aside for our work.

Hughes: Did they ever sell an oxygenator?

Gerbode: No, they never got to the point of commercial development of the membrane oxygenator. They sold some of the disk oxygenators.

Hughes: When did the membrane oxygenator come in?

Gerbode: I suppose we tried it on these prolonged pulmonary profusion patients about ten years ago. Cutter, of course, shared in some of our developments. When the whole project was taken over for commercial development by the Harvey Company, the Harvey Company paid Cutter a certain amount for their patents, so they could use them in the final development.

This is very exciting work. To find that you could put a patient on this device for days meant that if you put them on for hours, that they'd be better off than they would have been if you'd had them on a bubble oxygenator or another kind of device. In fact that they would stay alive after a long time [on the membrane oxygenator] meant that they'd be not so sick for a shorter time [on it]. That's why people still want to have that device.

Hughes: Would you care to say something about the acceptance of these machines by your colleagues?

Gerbode: The acceptance is a bit difficult until you can make it easy [to use], because the men who run the profusion devices, run the heart-lung machines, are usually technicians, and they don't really like anything that's very complicated. They like to have it easy to put together, easy to run, easy to get rid of. We've always been lucky here, because we've always had a physician supervising the work. Dr. John Osborn has followed all this work and has been responsible for many of the developments from the very beginning. So we were always ahead of the game by having an expert physiologist, you might say, standing side by side with the project that whole time.

Pump Technicians

Hughes: What about the training of the technicians?

Gerbode: We were lucky in training our own. We got a technician from the East Coast who was very good with bubble oxygenators (which we finally had to say we were going to use as a temporary expedient, and we still use them). Angelo Iatridis is a very good profusionist. He trained at least five technicians with us, who are equally good, and one who was especially good at doing research. See, we still do a lot of research on animals in various ways. We're constantly testing devices and doing things on animals to find out what's best.

Hughes: Is there now a formal setup for training technicians?

Gerbode: No. I don't know exactly where there is right now. I know that they've been wanting to have a formal training period. They have their own society, and they meet once or twice every year, and they have a publication. But I'm not sure what the requirements are for training. The ones we have are really good. Actually, Mr. Iatridis and Dr. Osborn very seldom had to be there early in the morning to get things going. [The other technicians] got it all going very well. Then Mr. Iatridis and Dr. Osborn came in and kept an eye on it, and were there if anything happened.

Hughes: Do technicians have some engineering know-how?

Gerbode: Oh, yes, they know how to run it very well, and if anything goes wrong, they know what to do.

Hughes: Do they also know the physiological aspects?

Gerbode: Not too much, but they know when to take [blood] samples and how to run the tests during an operation. The interpretation is really done either by the anesthesiologist or the physician, if he's there, or the surgeon.

Hughes: Could you say something more about the tests, how often they're done?

Gerbode: They do oxygen saturations. They measure the temperature of the blood. They measure the CO₂ of the blood. Then as they're coming off profusion, they measure the blood coagulability and adjust the dosage of protamine to be sure the heparin in the blood is neutralized properly.

Hughes: Is there now an established protocol for all of this?

Gerbode: Yes. As I mentioned to you before, there were so many problems about blood and using machines that we got Dr. Herbert Perkins to work with us. He now is the chief research hematologist for the blood bank in San Francisco and has made a lot of contributions in blood banking. We published some good papers in the early days on various things about blood and profusion. Since then, of course, the literature is full of all sorts of papers.

Hughes: It's very interesting to an historian to follow something like this through, because with time, the normal development is for more and more formalization. Institutions grow up. You mentioned the technicians now have a society. Is there something similar for physicians?

Gerbode: The hematologists have their own society.

Hughes: But I mean even more subdivided than that.

The American Society for Artificial Organs

Gerbode: There is an artificial organ society, and they discuss heart-lung machines, artificial hearts, various devices to augment the circulation in shock and other situations. They meet a couple of times a year and have a publication, too.

Hughes: That's for physicians?

Gerbode: Yes, physicians and profusionists. But it's really mainly run by physicians or research people. It's called the American Society for Artificial Organs.

Hughes: You mentioned that some people preferred hypothermia and distrusted the heart-lung machine. I wonder if that interfered with grants in the beginning. Were people in NIH, for example, skeptical of the success of the heart-lung machine?

Pumps

Gerbode: No. Actually, I was on the surgical study section at the time when this all exploded, you might say. There were many applications for devices which when put together would become a heart-lung machine. In fact, one of the pumps they were using at that time was the so-called sigma motor pump. It was used by people in the field because it was the first pump available that would pump something through a tube. It was a pump which was used by the milk industries to move milk along in a tube from where they took it out of a cow to a tank where it was stored.

On the surgical studies section where all these applications were coming through for research funding, they all [required] a sigma motor pump, and a lot of them were put together so they could get a sigma motor pump. I suggested one time during one of the meetings that we buy a whole bunch of them and give everybody a sigma motor pump so they wouldn't have to apply for it formally through a research protocol. [laughter]

But then other pumps came in which were much better. There was another type of roller pump which is called a DeBakey pump. It was actually devised by some French people. Dr. DeBakey brought it over from Europe many years ago to push blood along in a tube for transfusions. Then they made larger and improved versions of it. Roller pumps just roll the blood through a tube. They've become less traumatic and much better as time has gone on.

Hughes: What was happening in Europe in regard to the heart-lung machine?

Dennis Melrose's Heart-Lung Machine

- Gerbode: There wasn't really much on the continent. Dr. Melrose in London, who came to work with us, had a machine which he devised and actually produced commercially. In fact, I brought one over with him to try out in our laboratory. I tried it on some patients. We found it was too traumatic to use routinely.
- Hughes: That was the design?
- Gerbode: Yes. There was too much turbulence in it. It was like a washing machine. He introduced it into some centers in Europe, mainly Eastern Europe, and they used it there for a while, until better devices came along. I never really did any more than try it experimentally and in a few clinical cases, because our tests showed that it was producing a lot of hemolysis and was hard on red cells. It was too traumatic.
- Hughes: Was that holding back British open heart surgery?
- Gerbode: Not only that. As soon as the bubble oxygenator became available commercially, they started using it over there, and then their heart surgery program went ahead.
- Hughes: From what you're saying, it doesn't sound to me as though there was much resistance to the very idea of using extracorporeal circulation.
- Gerbode: There wasn't.... You see, it's the fear of the unknown again. A lot of them went into hypothermia, using total body hypothermia to do quick cases, while they were becoming more confident in a machine of some kind. And as soon as a machine of some kind was available, they began to use it.
- Hughes: That's quite a step.
- Gerbode: Oh, yes, it was a big step. It's particularly a big step if nothing is known, and you have to make that step yourself, and that's where we were, you see. As I've said to you, we didn't even know what kind of tube to pump blood through.
- Hughes: I would think it would be absolutely as great a step as the idea that the heart is touchable. For the first time in history, we were allowing a mechanical device to take over this extremely vital function.

Gerbode: Yes, that's right.

Hughes: So it's more than just a technical barrier. It's a whole conceptual barrier.

Gerbode: It was. That's true of the pump aspect of it. The pump was relatively easy, but the pulmonary part of it, to get the gas exchange in the blood, was the more difficult part. That's why all these different types of oxygenators were developed, to find which was the most satisfactory.

Patient Response

Hughes: What about the patients' responses?

Gerbode: The early patients frequently had fevers postoperatively, and some of them didn't wake up as quickly as we wanted them to. There were minor complications quite often in the early days. But we gradually sorted out the reasons for everything by constantly testing and watching. Every time, in the early days, you did an open heart case, you kept track of everything, and if a little thing went wrong, you corrected it that day. Nothing was left over. Even if you had to go back at night and fix something. You did it that day.

Hughes: So you mean you would not do another operation until--

Gerbode: Until that was corrected.

Hughes: Was that common procedure everywhere, do you think?

Gerbode: I think mostly it was pretty common. I don't think anyone would go on with a complication that was repeating itself, but I guess some people would.

Hughes: I'm wondering about the degree of patients' [concern about] going onto a machine to sustain their life.

Gerbode: You'd have to explain to the mothers or the fathers or the patient what it was all about. In a child with a hole in the heart that was making the child very sick and almost dying a number of times, you'd have to say, "Well, now, there's only one way that we can try to stop this, and that is to try to close that hole. And in order to close the hole, you have to use a machine." Then you'd tell them what the machine was about, and you'd tell them what the risks were,

Gerbode: and what experience there had been. Then they'd almost invariably would say, "We'd much rather take a chance on doing it than to have the child die."

Now, the early mortality rates were quite a bit higher than they are now. For most procedures they might [have been] 10 or 12 or 15 percent on a sick child. Now they are 3 or 4 percent because of all the improvements, not only in the machinery, but in the management of the patients. On the other hand, those other patients would have died from natural causes.

Patient Selection

Hughes: Were you selecting very sick children in the early days?

Gerbode: Actually, when we first started using open heart surgery with a machine, I didn't. I did just the opposite. I picked the ones I was quite sure I could fix quite quickly and safely.

Hughes: So you had great confidence in the machine by then?

Gerbode: Well, I had confidence, but I wanted to be sure the team and everybody could manage their assigned duties, so I didn't get into something where I'd have to make a big decision anatomically or physiologically about a correction. So I picked holes and obstructions and things that I knew that I could usually repair in fifteen or twenty minutes, something like that, and where I knew what the anatomy was going to look like. This was a very good thing to do, because it gave cardiologists and others confidence in the machine. If I'd taken the very sick patients, I would have lost a lot of them, and they would have lost confidence in the whole venture.

Cardiologists

Gerbode: Cardiologists are just as afraid of their own reputation as they are of the patients' survival, and they don't like to get involved in something where the result isn't going to be good.

Hughes: Did you have problems at any time with cardiologists?

Gerbode: Oh, you always have problems with cardiologists. [laughter] One of my best friends, who is a very, very famous cardiologist in New England--he's one of the great cardiologists, a pioneer with a tremendous reputation--said to me, "Frank, a cardiologist without a surgeon is a nothing." [laughs] And it's true, because cardiology as practiced today really got started because surgeons could repair these things in the heart. That brought out all the diagnostic techniques--cardiac catheterization, angiocardiography, use of sound to diagnoses abnormalities in the heart. It all started because the surgeons could do something about it. Many cardiologists forget this. They get to the point where they think they can order an operation and even order the type of repair as they would order a meal in a restaurant. This is very irritating to surgeons. Some surgeons will take it because they don't want to offend the cardiologists.

Hughes: Because of this resistance, did you have times have trouble getting patients?

Gerbode: Right after the war, when we were doing closed mitral valvotomies--that is, we were fracturing tight mitral valves--there was a lot of resistance among the full-time faculty in the medical school. They wanted to treat the patients with digitalis and diuretics forever. Patients started coming in when they found out that one could correct mitral stenosis with a rather simple operation. If they ended up in the cardiology ward, they'd stay there for days and days while everybody scratched their heads and decided how many pills to give them and how sick they were. It was only very rarely that they would turn one of these patients over to the surgeon. So when I found that a referring physician wanted to have a patient come into the hospital, I'd get him to bring the patient in on the surgical ward [rather than on the medical ward]. And then I'd invite the cardiologist who was most surgically minded to see the patient and bypass all the rest of them.

Hughes: How long did this go on?

Gerbode: It went on for a couple of years. We obviously had to prove ourselves to them. But when they found that the mortality rate was very, very low and the results were good, they got more confidence in the procedure. They were always very quick to point out the complications. They were afraid of the unknown, afraid of their reputations. Fear has a lot to do with it.*

Hughes: Was some of the resistance due to the knowledge of the really rather discouraging prewar record of operations for mitral stenosis?

*These two sentences were moved from session 1, 7/20/83.

Mitral Valvotomy

Gerbode: Yes. The ones that really put mitral valvotomy on the map were [Charles P.] Bailey in Philadelphia and Dwight Harken in Boston. At every surgical meeting they were there talking, and fighting, too, claiming priority, saying that we did more, we did it first, or something. But actually, they talked so much that people began to realize there was something to it. They did hundreds of patients in Boston and Philadelphia before very many patients were done in the West. We did early operations; as soon as mitral valvotomy became a feasible procedure, we did it.

One of the first patients I did, right after the war, was a paratrooper who'd been in the army. He was an air force paratrooper, and he had a severe mitral stenosis, had gone through all the testing to get into the service. He went through the whole war, and then at the end of the war, he was in severe heart failure, with a calcified mitral valve.

Hughes: They'd missed it all? Good heavens. The history of operations for mitral stenosis is interesting. There was a moratorium between Cutler's last operation, which was in 1928, and 1945 when Bailey did his first human operation. Actually, there were people in between who were doing operations.

Gerbode: Yes. There was [Sir Henry S.] Souttar in England.

Hughes: He, of course, was much earlier.

Gerbode: Much earlier. He was the first, I think.

Hughes: And then there was somebody by the name of [Horace] Smithy. He died very soon himself.

Gerbode: I'm not quite sure about him.

Hughes: And Murray--

Gerbode: Arthur Murray, yes.

Hughes: --who did some successful operations, I believe.

Gerbode: Yes, he did.

Hughes: But with a rather bizarre technique.

Gerbode: He was looked upon as being kind of a wild man because he was doing this, too, you know. He has a son with the same name who's a surgeon.

Hughes: [laughs] Do you know any of these people?

Gerbode: Oh, sure.

Hughes: I know you know Harken--

Gerbode: Oh, sure. I knew Elliott [Cutler] quite well.

Hughes: Is this the place to say a little bit about these men?

Gerbode: Starting with Bailey, I'd say that he was so successful in Philadelphia that it really went to his head. He proposed all kinds of operations which were very often radical. As we would say, he would try the operation on the human, then prove it on the animal. [laughter] He did an awful lot of straight operations on humans before it was established that the procedures were feasible, because there were a tremendous backlog of people with congenital and acquired heart disease that needed doing. So he had lots of material, and he ran kind of a factory there at Hahnemann Hospital in Philadelphia.

Hughes: In those days, the decision to operate was solely that of the surgeon?

Gerbode: Yes, or he had very compatible cardiologists. In that particular place, there wasn't really much wasted time on ward rounds and decision making. If it looked as though there was something that could be done, they'd just do it.

Dwight Harken in Boston was quite a bit more careful. He used his cardiologists and the other people at Harvard in determining the feasibility of operations. But he did an awful lot of cases, too. There wasn't anybody really to stop it. It was like sinking a hole in the ground and getting a gusher. There was oil there and it was coming out like crazy, then you tried to capture as much of it as you could.

Hughes: In general, were they operating on very sick patients?

Gerbode: The first ones we got were quite sick, too. There the problem was really one of not getting patients from the cardiologists unless they were pretty sick, class 3 and class 4 heart failure very often. So the mortality rate was high.

Hughes: When was that class system set up?

Gerbode: New York Heart Association.

Hughes: Do you remember when?

Gerbode: No, I don't, but it was maybe twenty years ago.

Hughes: Why New York?

Gerbode: I don't know why. They just decided they ought to classify heart failure so people would know what they were talking about.

Hughes: And that was immediately accepted?

Gerbode: Yes, it's accepted pretty much everywhere.

Hughes: Would there be a stigma against a surgeon who operated on a class 1 or a class 2 when the procedure was still [experiential]?

Gerbode: Not really. [Frederick] Glover, who was working with Bailey at that time, said, "I think we ought to operate on these people before they have very many symptoms, so they won't get symptoms." [laughter] Of course, he knew if he was operating on them very early, he would practically never lose one.

Hughes: There's always a tension there, I should think. If you are convinced that a procedure really is going to be very helpful when it's in the early stages, I would think there would be the temptation to take less sick cases, knowing that your chances of success are greater and consequently the procedure is more likely to be accepted.

Gerbode: I told you when we started open heart surgery and had a heart-lung machine, I picked the cases of very low risk. But when it came to things like mitral stenosis, you couldn't get the patients with very few symptoms, because the cardiologists wouldn't give them up. They'd only give the ones to you that were in constant heart failure regardless of how many pills they took.

Hughes: Nowadays it's very ritualized, is it not?

Gerbode: It is ritualized and standardized.

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Gerbode: We now have methods of visualizing the chambers of the heart, testing the lungs, and being able to determine very accurately how badly the lungs are affected by the heart and getting numbers to determine

Gerbode: how bad it is. It's pretty well standardized. There are differences, however. One big clinic in the Midwest--I won't say which one--for many years would not use cardiac catheterization or exotic testing for routine cases. They felt so confident of their ability to make a clinical diagnosis, they would take an xray, an EKG, and make a clinical diagnosis, and let the surgeon find out during the operation how bad things were. If you're good enough, you can do that, and it's a lot cheaper.

In fact, my own feeling is we do too many tests on these patients. Whenever a new test comes along, there's a tendency not to subtract another test for the new one, but to add it onto the list, which means that there's another five hundred dollars or whatever in expenses. So now a patient comes in, has a physical examination, a chest film, electrocardiogram, an echocardiogram, a cardiac catheterization, and pretty soon he'll have several other very expensive things done to him. Then they'll add it all up, and it'll come out exactly the same as their clinical diagnosis was in the beginning. But you have to keep all these people busy, you know.

Hughes: Is there now a system derived from the granting organization itself that ensures that an institution follows these guidelines?

The Crippled Children's Services

Gerbode: No, not really. The only control [was] that the Crippled Children's Services in the late '40s and early '50s decided that it would set certain minimum requirements for heart surgery, and these requirements had to be met before it would approve payment for patients. We helped establish the first criteria.

Hughes: Can you tell me what they were?

Gerbode: You had to have a cardiac catheterization laboratory. You had to have done a certain number of cases with a very low mortality rate. You had to be able to do good angiocardiology, with good equipment, and you had to have a pediatric service which could take care of the ordinary illnesses associated with children. Initially you had to have the use of an experimental laboratory. This was very difficult for some people. For example, the ones in Oakland who wanted to do open heart surgery were held up for a while because they had no experimental laboratories over there. But the Crippled Children's Services realized that an institution to be very good would have to

Gerbode: be doing some experimental work, trying things on animals before they tried them on human beings, which is a very mature attitude. If some of those southern California congressmen [who oppose research with animals] knew more about what they're talking about, they'd believe this, too.

Hughes: Who was responsible for this enlightened attitude in the Crippled Children's Services?

Gerbode: I won't take credit for the whole thing, but I was pretty close to them. But they were wise enough, when you talked to them and showed them what it was all about, told them what you believed in. Then they could look around and see that nobody was trying anything in the laboratory experimentally, and nobody had very much experience yet. [Crippled Children's Services was] not going to approve them until they somehow got some experience and knew what they were doing.

Hughes: What about money?

Gerbode: I'll tell you about cardiac catheterization, which is another story. You see, the Crippled Children's Services had never really paid for heart operations; they were paying for children with cleft palates, harelip, various congenital malformations of the bones, like club feet and dislocated hips, spina bifida, and that sort of thing. But when heart surgery came along, they suddenly realized that if they were going to approve heart surgery on the state Crippled Children's Services, it was going to be a big change in the amount of money they were going to have to spend. So they looked at it very carefully. And then it became apparent that cardiac catheterization was going to be a very important part of a service to take care of children with congenital heart disease. They'd never paid for that either. So I took a trip over to their headquarters in Berkeley and sat down with [the director and assistant director] and told them that I thought that cardiac catheterization was going to be very necessary and that they were going to eventually have to pay for it, like they had to pay for an xray.

So they sent their man over, and he came and looked at our unit. We had another meeting, and I took him out to lunch. Finally they sent me a letter saying that they'd pay two hundred and fifty dollars for a professional fee for cardiac catheterization. This was a fairly good amount of money, since we weren't getting anything for the procedure before. They also agreed that they would pay two hundred fifty dollars for an operation if it was necessary.*

*These two sentences were moved from a similar discussion in session 4, 8/10/83, the rest of which was eliminated.

Hughes: How was Crippled Children's Services raising this money? It must have been considerable.

Gerbode: They got more of an allocation. The next year around, they just said we are going to have to take care of this many more children. and so they allocated more money.

Hughes: From the state?

Gerbode: From the state, and some federal.

Hughes: Was that the major source of your income?

Gerbode: Most children with congenital heart disease come from families with not very much income. The families who had enough income so that they wouldn't be eligible for Crippled Children's Services had enough money to pay for their [treatment] because it wasn't very expensive then. A lot of them had comprehensive insurance. The insurance companies found out that if they had a family policy, it had to cover the child, too. This was quite a discovery on their part. They began to pay the same fee as the Crippled Children's fee then.

Funding for Cardiovascular Research

Hughes: What about the research side of it? Where was that money coming from?

Gerbode: All the research money came out of Heart Association grants, private contributions, or NIH.

One of our first contributions was not from any of these; it was from the Life Insurance Medical Research Fund. [It] must still exist, although we've never applied for it since the early days, but once we got twelve thousand dollars from them. I remember our professor, Holman, couldn't believe that anyone would give us twelve thousand dollars to do research.

Hughes: How did that come about?

Gerbode: He applied, and then that came right back, and he was bowled over.

Hughes: How did the life insurance people learn so quickly that this was a field that they should support?

Gerbode: They were smart. All their premiums were based on life expectancies and if we could prolong the life expectancy or prevent certain illnesses or get people out of the hospital quicker, that was money in their pockets. When penicillin was discovered, they made millions of dollars because people were being cured of pneumonia and various infections, and this wasn't in their actuarial calculations yet. It took a number of years for that to catch up. But meanwhile, they made plenty of money.

Hughes: Were they foreseeing enough to realize that they should support this field before the demands on insurance policies came in?

Gerbode: No, I don't think so. These things are always very sluggish and slow to develop. I don't think they had enough vision to look forward to that.

Mitral Stenosis: Operative Procedures

Hughes: Do you have the energy for a couple of more questions about mitral stenosis?

Gerbode: Sure.

Hughes: You stated in your paper published in 1951, and I'm quoting, "The operative treatment of mitral stenosis resulting from rheumatic fever has been one of the most challenging problems in cardiac surgery." Could you enlarge upon that?

Gerbode: If a surgeon saw a patient with mitral stenosis, with pulmonary edema, a very reduced capacity to work or walk, and peripheral edema, and then he saw the patient die and he saw the lesions, saw the valve, and saw that it was tightly held together so the blood couldn't get through, he could realize that if he could open that valve, then the patient would be benefited enormously. So then various ways were tried to do this. Actually, Souttar tried by putting his fingers through the valve, and later on Harken and Bailey did the same. We developed an instrument to crack the valve by passing it through the apex of the ventricle, transventricular valvotomy we called it.

Actually, to answer your question, if you see an autopsy of a congenital heart with a hole in it, the surgeon says, "How can I close that hole? What do I need to close that hole?" And that's where it all starts, you see. We actually made holes in the heart

Gerbode: in experimental animals, before we had a [heart-lung] machine, to study the physiology and to see what could be done. I tried to pass various kinds of experimental devices into the heart with the heart beating--buttons and things like that to close those holes. But I never had very much hope that it would work. But we were stimulated by the fact that if we could figure out a way of doing [the operation], that there were lots of people who needed to have it done.

Communication Among Surgeons*

Hughes: Now, when you were working on these very innovative procedures, were you following the literature very closely?

Gerbode: Oh, very closely. We were not only following the literature; we went to every meeting.

Hughes: Is that generally the way you kept up?

Gerbode: I think there were a group of people in the country who were working hard in the laboratory and trying to get [cardiovascular surgery] put forward. They would appear at various meetings in the country, and sometimes abroad, two or three times a year. My travel budget for those years was very big, and I was away from home a lot, as were these others, too.

Hughes: Meetings occurred frequently enough to keep you abreast?

Gerbode: There were at least two or three very important meetings a year. But then also, even in those days, we had a kind of a communication network, where you met people in the same position you were in and knew them by their first names and liked them, and they liked you, and so you'd call them up quite often and discuss things on the telephone. Or if they did something that was very important, they'd call you and tell you about it, knowing that you'd always give them credit if it was something original.

Hughes: So because of that system, people were very free?

Gerbode: Not all of them, but most of them were. The good ones were. And it was important to always remember if you did something that was an idea that somebody else had had and gave to you, that you'd give them credit for it. That's still mostly true.

*See the session recorded on 6/13/84, pp. 415-416, for further discussion of communication among surgeons.

Mitral Stenosis: Operative Procedures (Continued)

Hughes: Could you talk a little bit more about the procedure itself? You mentioned transventricular valvotomy, but I believe you also used the finger fracture technique.

Gerbode: Yes. We had little thimbles, for example. Some people found that if they put a thimble on their finger, that it would increase the diameter of the finger and make the fracture more complete. Also, a thimble is hard, so you could fracture a valve and separate it better if you had something hard to do it with. I used thimbles and various other things. Some people actually put knives in and cut the valve, but this proved to be a very dangerous thing to do, because frequently they cut it in the wrong place and made the valve incompetent. That wasn't very good.

Hughes: That was Cutler's problem, was it not?

Gerbode: Yes, he thought you'd have to cut it. But actually, it was shown by Souttar (although they forgot about that) that you could fracture it. We spent a lot of time trying to open that valve at least two finger breadths in diameter. We wanted to get it open to the end of the commissures so the valve would be mobile, so it wouldn't get stuck together so easily. If the corners were out quite far enough, then it would open and shut more completely. If it was still tied in the corner, then it wouldn't open completely, and there was a chance that it would fuse again.

The other big problem, of course, was how to cope with clots in the heart. There were various techniques devised to get rid of a clot that you found unexpectedly in part of the heart. There were methods of flushing the heart out, letting the blood gush out of the atrium to carry the clot with it.

Hughes: Was this a result of the procedure?

Gerbode: No. About half the patients with mitral stenosis sometime or other get clots in the heart, and these clots go to the brain and various parts of the body and are very bad. Sometimes you encountered so many clots in the heart that you couldn't really go ahead with the procedure of mitral valvotomy. On the other hand, if the clots were up in the auricular appendage, near where you had to work, you could flush the heart out, and the blood gushing out would sometimes carry the clot with it.

Hughes: It sounds like a rather gross thing, to just push your finger through the valve. But I gather that the split was rather clean, and that the valve leaflets, once split, would appose correctly?

Gerbode: Oh, they would mostly appose correctly. You would very seldom produce insufficiency. The main problem is if the valve is so fibrotic that it doesn't move properly, so that it doesn't open. Even though you split it, it'll only open a little bit, because it's still too stiff. Also if it's too stiff, it makes it much more susceptible to fusion again.

Hughes: Did you ever have to cut?

Gerbode: I cut a few, but I never liked to do it very much. I had all the knives to do it with, but I didn't use them very often, because it was always dangerous to put that knife in there.

Hughes: I understand that antibiotics influence the very character of the valve, that before antibiotics came into use, calcification of the valve itself tended to be much more severe.

Gerbode: I don't know that antibiotics were really responsible for that. I think antibiotics stopped the course of rheumatic heart disease.

Hughes: Ah, so the problems didn't go on as long.

Gerbode: They didn't go on as long, or never appeared. If you give antibiotics to a patient with a certain type of strep throat, then he won't get rheumatic fever. That's why the incidence is going down.

Hughes: At some state you must have been dealing with patients that had had rheumatic fever before antibiotics came into use.

Gerbode: We didn't have as many children with rheumatic heart disease as is found in many other countries. For example, the Eskimos have quite a bit of rheumatic heart disease in children. In certain other foreign countries, this is true, too. It's very difficult to take care of those patients, because they get a severe form of valvular disease. You can't use a palliative operation very much on them. You have to put a valve in some of them when they're a child, and we don't like to do that. If you put a valve in a child, you have to expect it to last a long, long time, and most valves probably won't last that long. Then, if it's a mechanical valve, one has to give cumadin or a cumadin-like drug to prevent clotting on the valve. With Eskimos and Indians and some other people, it's almost impossible for them to regulate the dosage very well.

Hughes: Why is that?

Gerbode: They live in an igloo somewhere, and they can't get in and get a test done very often. Then they don't understand that you can take too much of the drug and make matters much worse.

I remember one child living way up in northern Alaska in whom I had to put a valve. The child was brought down to Anchorage bleeding from every orifice and requiring massive blood replacement and everything else. The mother said, "The little girl was not doing very well, and I thought if I gave her more of the medicine, she'd do better."

Mitral Stenosis: Patient Selection

Hughes: One other statement from one of your papers, this one from California Medicine in 1951.* You say that the mortality rate for mitral surgery varied directly with the degree of morbidity of the patient.

Gerbode: That's true.

Hughes: That leads us into the question of patient selection, and I believe you established fairly early on the optimal age range from mitral operations.

Gerbode: When we began talking about mitral stenosis, I think we said we didn't want to operate on anyone over forty-five, no one with a history of thromboembolism, and nobody in atrial fibrillation. These were the criteria. Well, as time went on, those were the patients we were operating on most of the time. Just the reverse.

Hughes: Why?

Gerbode: Because they were the sickest, and they needed an operation more than anybody [else]. Most of the patients ended up by being over thirty-five or forty, and most of them were in atrial fibrillation, and many of them had thromboembolism. We also were afraid of heart failure in the very beginning. But we very quickly realized that one of the main reasons for operating on the patients was heart failure.

Hughes: Does that pretty well cover mitral stenosis?

*F. Gerbode, "The Surgical Treatment of Acquired Heart Disease," California Medicine, 1951, 75:185-188.

Gerbode: Yes.

Hughes: Were you doing a lot of cases of mitral stenosis?

Gerbode: Yes, it was the most frequent operation. But even now there are a lot of operations for mitral and aortic valve disease that are being done in all the units in the country and in the world, because a lot of the patients in whom we had done the palliative operation of mitral valvotomy, are coming back now with more fibrosis or calcification, and they require an open heart operation and a valve. So there are a lot of repeat operations being done, and then, quite a few people are coming in who avoided operations all these many years because their doctors just didn't believe in having them operated upon. So they come in at sixty-five or seventy requiring a valve replacement. We do these cases without much worry any more, because we can manage most of them.

Heart Valve Replacement*

Gerbode: We very early realized in the '50s that we'd have to replace valves. So I had a fellow by the name of Franz Segger start working on making an artificial [aortic] valve. We had models made, and we finally made a valve out of plastic material, which looked and functioned like a human valve. But we didn't know how long it would last. However, I had several very sick patients who were dying from valvular disease, so I used it on several of these people. It functioned perfectly for about a year and a half or two years, and then it fell apart. You can do a certain amount of investigating in animals, but you really have to try it on a human eventually.

Later on in the laboratory we made pig valves, and we sterilized the pig valves with formaldehyde, which we found was not the chemical to use. Later on it was shown that glutaraldehyde was the aldehyde of choice. This was developed by Alain Carpentier in Paris and a number of others. Glutaraldehyde is the kind of aldehyde they use to cure leather so it'll stay soft and pliable. This was adopted by certain people and proven to be quite good. Most of the pig valves, other animal valves and pericardial valves that are made now are sterilized and cured with glutaraldehyde, with various pH regulations and so forth. Virtually thousands of these have been put in patients.

*This section was moved from the session recorded on 9/27/83. See the session recorded on 5/15/84, pp. 362-364, for further discussion of heart valves.

Gerbode: Mr. Bramson also worked on an artificial valve on his own. I didn't get him started on it; Jack Osborn got him started on it. It was not feasible, because the way he wanted to mount it in the aortic root was not biologically satisfactory. We never used it clinically.

Hughes: It was not just a matter of fit?

Gerbode: No, it was a matter of it not being designed so that it'd become part of the patient's tissues.

We put in a certain number of these pig valves cured with peraldehyde really quite early in the business, long before glutaraldehyde came into being, and I could see that there might be a big advantage in using tissue valves. So I organized a world tissue valve conference, which we set up, with NIH's backing, at Silverado.* They brought surgeons from England, Norway, Australia, and New Zealand for a three-day conference on tissue valves.

Hughes: When was this?

Gerbode: I've forgotten. The '60s sometime. This was published by NIH. But the only thing that came out of it really was the fact that it looked as though glutaraldehyde-preserved tissue valves might be the best.

Hughes: Was there a debate at that time about the virtues of the human donor valve as opposed to an artificial or even an animal valve?

Gerbode: The whole discussion at this conference was [about] different kinds of tissue valves. People were making them out of pericardium and fascia lata. I did about twenty some-odd fascia lata valves, taking fascia lata off the side of the thigh and making a valve in the operating room.

Hughes: What gives it structure?

Gerbode: Fascia lata is very strong. It's a tendonous type of material.

Hughes: Can you describe the valve?

Gerbode: The valve looked like a human valve. We had a little cusp, and we sewed it together in the operating room and made it the same size as the patient's valve.

Hughes: Was the main virtue of this technique that there was no problem with rejection?

*The First International Workshop on Tissue Valves, Silverado, California, October 4 and 5, 1969.

Gerbode: We thought this would be the big thing. It was a strong material, and it came from the same person, so we thought it might be quite good. The early work on this was done by Marian Ionescu. He is a very innovative surgeon in Leeds. He had put in quite a few of them there, and he claimed a very early success. Well, the ones that I put in, about twenty of them, I guess, all finally became calcified or fell apart after a year or so. So that didn't turn out to be so good. They had to be replaced with other valves, which fortunately were coming along at that time.

Then ball valves were developed. The first one was developed by Dwight Harken in Boston. The Edwards Laboratories then worked on another type of ball valve with Albert Starr in Portland, and they produced a Starr-Edwards ball valve which was a silastic valve in a metal cage. This was the valve of choice for several years. Some people still use them.

Hughes: Is that the one that makes a lot of noise?

Gerbode: It clicks, all right.

Hughes: Did you ever use that?

Gerbode: Yes. We put in a lot of them.

Hughes: What is the lifespan of those valves?

Gerbode: Some have been in for a long time. I've got some in for fifteen years. The early silastic ball wore out or fragmented, and it would escape from the little cage and produce a very serious insufficiency, and then you'd have to find this ball valve in the system somewhere and remove it. Usually it was in the aorta. Later, better material was developed which lasted.

Hughes: Are these all aortic valves that you're talking about?

Gerbode: No, mitral valves, too. So anyway, we used that Starr valve, and they finally changed the type of material in the ball so it was harder and wouldn't wear out. At the same time, in Sacramento, another group produced another type of ball valve in a cage, the Smelloff-Cutter valve, and that probably in many respects is the best one.

However, with all the mechanical valves, regardless of which one, the surgeon is obliged to use anticoagulant drugs, because the incidence of thrombi forming on these valves is pretty high without the use of cumadin.

Hughes: Why more so than with a human valve?

Gerbode: Tissue valves are not so thrombogenic.

Hughes: But why?

Gerbode: I guess metal, struts and things like that, produce more turbulence, and that favors stagnation and thrombosis. I think there's a little bit of electricity involved, too.

Hughes: Was there ever a problem with hemolysis with the artificial valve?

Gerbode: Yes, there still is. An artificial valve which is not functioning properly or which is leaking will produce hemolysis.

Hughes: Is the leakage usually between the artificial valve and the tissue?

Gerbode: It can be there, or at the edge of the valve, where the ball or disk seats on the valve. If it's not fitting properly, there's turbulence over that area, which is very damaging to red cells.

Hughes: So that's a problem with the manufacture of the valve.

Gerbode: No, not necessarily. It's a problem of not fitting the valve properly. Sometimes it is the manufacturer, but rarely.

Hughes: Does that mean, then, that the alignment of the valve in the orifice is extremely important?

Gerbode: Yes. It has to be seated perfectly so it won't leak. All these valves now have a cloth cuff around them. The cloth is used so that the patient's tissues will grow into that cuff and hold it in there. Sometimes healing isn't very satisfactory, and that's why it leaks.

Hughes: In the early days they didn't use cloth?

Gerbode: They used cloth from the very beginning.

Hughes: How long does it take for the invasion of the tissue?

Gerbode: It starts right away. In a couple of months it's pretty solidly embedded.

Hughes: Did you ever have a strong feeling of the artificial valve versus the tissue valve being superior?

Gerbode: I always thought that tissue valves were going to be the best eventually, and that's why we made some out of the patient's tissue and studied some in the laboratory. Any mechanical device in the circulatory system has certain inherent disadvantages. True, there have been thousands of mechanical valves put in patients, and for the most part, about 75 percent of them have lasting virtue and a very low failure rate; about 75 percent of them survive more than five years with a low incidence of thrombotic complications. But there is always some instance of thrombotic complications, and they all have to take anticoagulation drugs, cumadin.

Hughes: Forever?

Gerbode: Forever. There are a certain number of incidences of bleeding from cumadin. In our own service here, I know of several disastrous hemorrhages from patients taking too much cumadin and not regulating it properly, and getting brain hemorrhage and other big hemorrhages. You have to be very careful.

Hughes: Tissue valves may have to be replaced in a few years?

Gerbode: Well, the tissue valves are almost as good and [of] lasting quality as the artificial valves.

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Gerbode: One basic reason is that the tissue is made inert by being cured by glutaraldehyde, so it's like a little piece of flexible leather, you might say. And this is true whether it's pericardium or any other tissue.

Hughes: Did you use donor valves to any extent?

Gerbode: I only put a few fresh aortic valves in. The ones I put in actually have lasted very well. I have one in an Indian doctor, for example. It's [been] about fifteen years now; he's still doing well.

Hughes: Why did you put so few in?

Gerbode: They're hard to get, and we didn't have a massive supply available, and we had a massive number of patients to be operated upon.

Hughes: Do you think that covers valve surgery?

Gerbode: I haven't talked about all the various people who've worked on this problem. There's Carpentier in Paris at the Broussais Hospital who's made some very good contributions. And Marian Ionescu in Leeds has

Gerbode: continued to make very valuable contributions. His present valve is made out of pericardium, which is cured again with glutaraldehyde. It's seemingly lasting better than some of the pig valves.

Hughes: Why is a pig the animal of choice?

Gerbode: [Its] valve is like a human valve. It's easy to get a pig's valve. A great many of them are coming from the Philippines now.

Hughes: Why is that?

Gerbode: Because they eat a lot of pork out there.

Hughes: Does size have anything to do with it?

Gerbode: Yes, they're sized. There's a pretty standard size for most adults. But then for children and some adults you have to have different sizes.

The Korean War and Its Aftermath

Hughes: Is it too big a question to get into the impact of the Korean War?

Gerbode: I can probably cover that. The Korean War was a war which nobody liked very much. I guess you could philosophize about why we should have done anything about it. But having gotten into it, then we had a lot of troops over there who were getting sick and getting hurt. The surgeon general of the army wanted to be sure that the troops were getting modern medicine. So he asked people in some of the university centers if they would go over to have a tour of duty and inspect the hospitals and make any suggestions about improving the care of the soldiers. Franny Moore was one that was sent over from Harvard, John Howard from Philadelphia, and a number of others. I guess there were quite a few who were asked but didn't want to do it, didn't want to leave their civilian work. I was asked by the surgeon to do it, and I was very happy to do it.

Service as a Brigadier General

Gerbode: So I went over. I was assigned a colonel in the regular medical corps of the army to stay with me the whole time and get me through all the various paperwork that was necessary to move me around. I

Gerbode: was at that time a lieutenant colonel in the army reserve. But to move me around in Korea, I had to have a title a little bigger than that, so I could get priority on airplanes and helicopters. So the surgeon general said, "Don't tell anybody about your being a lieutenant colonel in the reserve; I'm going to make you a temporary brigadier general [laughter] so you can get around." So I was a brigadier general during the Korean War.

Hughes: They withdrew that title after the war?

Gerbode: Yes. There wasn't any necessity to keep it going. Actually, when I came back, I decided that if they thought enough of me to make me a general when they wanted me, that there wasn't much point in my retaining a lieutenant colonel's commission, because all I would do is make myself susceptible to being drafted. Then when I was, I'd be brought in as a lieutenant colonel, whereas if they really wanted me, and I had no title, they'd make me a general. I think my reasoning was valid.

I went to Seoul first. The ritual was to visit all the hospitals and to have ward rounds and give a few lectures. I had a few subjects I talked about, resuscitation and shock and things that were common to the treatment of seriously wounded soldiers. I would give these lectures if they were necessary. But mainly I would go on ward rounds with the young surgeons who were doing most of the work--they were mostly captains--and see how they were handling the wounded, and make suggestions if I thought they were pertinent. I did this in virtually all the army hospitals, and some of the navy hospitals, in Korea.

Hughes: Did you find that people were pretty much up to date?

Gerbode: Yes, they were. Some curious things happened though. I ran into one station hospital where they had a young captain who had been trained in a certain hospital in the Philadelphia [area] where the professor had used fine wire in most operations.

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Gerbode: Well, wire is fine in certain situations, but it's not very good in traumatic wounds, because eventually it has to be taken out. It's irritating. I tried in my ward rounds to try to dissuade him from using it. He really didn't think very much of my advice. I said, "When I go back to the base in Japan, what would you like to have me have them send you?" He said, "Just have them send me some more wire." [laughter]

Gerbode: It was interesting. It was during the wet weather, so most of the lectures and subjects were handled in tents, just like MASH. The only difference was that all the little things that MASH was involved with--sex and everything--if they went on, I didn't see them, and there weren't a lot of foolish commanding officers. All of them were sensible people.

Mainly, I guess, what I did was make little suggestions about things. I wrote a big report at the end. But the thing that I really was very interested in was how they took care of the wounded up at the front. To do that, I had to go up in a helicopter. So they assigned a fellow by the name of Tex. (Anybody from Texas is called Tex.) He was the helicopter pilot, and he took me around to various front-line units, flying under the artillery barrage. You'd hear the gun go off on your right, and then the shell would go over and land on the enemy on the other side, and you kept thinking, "I hope they don't aim too low." [laughter]

But anyway, they would go up there with these helicopters, and they strapped the wounded on the outside on little platforms, and then flew them back within an hour or so of being wounded. It was a very efficient way of doing it.

Hughes: Was the helicopter used in World War II?

Gerbode: No, they were started, but we didn't see many helicopters over there. But they used them a lot in Korea. It was a great way of getting around, when they wanted to move me from one place to another. It was just fifteen to twenty minutes in a helicopter, whereas it might have taken hours on a road.

Hughes: A lot of lives were saved.

Gerbode: A lot of lives were saved. [If it was] raining, they'd cover up [the wounded] with tarpaulins and put them on these platforms on the side of the helicopter and take them right out. While on the helicopter, they would receive an intravenous of blood or saline, if necessary, while they were being flown back to the hospital.

Hughes: Was the setup similar to World War II?

Gerbode: Yes, but it was more like it was at the end of the war, because at the beginning of the war, it was a mess. At the end of the war, these forward hospitals really were pretty well standardized and were very efficient. They had good instruments, plasma, antibiotics, and blood. They knew what they were doing.

Gerbode: It's interesting, though, that in both wars it wasn't the regular army that was doing this. The regular army was in all the command positions. But the work was mostly being done by reserve officers. The regular army could never have done the job in World War II.

When I came back from the Korean War, it was very hard to find a regular medical officer who'd been over there. They were all in base hospitals starting training programs in thoracic and cardiovascular and general surgery, and not over there in the front line. There wasn't much future in doing that.

Hughes: Now, are you speaking just about medicine?

Gerbode: Yes, I'm speaking about medicine and surgery.

Hughes: After the Korean War, I know you wrote a number of papers on repair of war injuries to the major blood vessels.

John Howard: Blood Replacement

Gerbode: There were two fellows who really made a lot of contributions to the understanding of the wounded during the Korean War. One was John Howard. He was the one who made the observation that [when there was] a lot of bleeding, you had to give [the patient] more blood back than the blood that was lost. This was a very important observation, because it meant that blood replacement had to be much greater than you might expect. The physiology of why this was true was not understood. It probably still isn't fully understood. But the body usually needs more blood than it has lost. John Howard [made] a lot of physiological observations over there in the field which were very good. He's a very, very nice fellow, lives in Philadelphia.

Hughes: How did he even come to that concept?

Gerbode: He found out that by the time they replaced all the blood they thought the boy had lost, that he still had a low blood pressure, and there was also other evidence.

Hughes: Ah, so they put a little more in.

Gerbode: Well, basically that, but they had methods of studying blood volume, too, which refined the concept. But it was mainly that they found they had to give more blood. Later on they did blood volume observations, which made it more scientific.

Frank Spencer: Early Repair of Blood Vessels in the Field

Gerbode: Frank Spencer was a very interesting, very nice young guy, whom I had met at the Oak Knoll Naval Hospital, when he went into the navy service. I was a consultant over there. Then we worked together on some patients at the naval hospital. He went over [to Korea] on his tour of duty and began to repair arteries in the field. He and a couple of other surgeons were very influential in changing the concept of early repair of major vessels in the field. That was a big advance, because even in World War II we didn't try to repair many arteries. We tied them off. Then there was a fixed rate--for example, with a leg artery--of amputation for gangrene, at certain levels. We did repair a few [vessels] in World War II in the field, but not very many.

Vascular Suture

Hughes: Was that just a conceptual barrier because weren't the techniques adequate?

Gerbode: Oh, the techniques were there. Nobody I guess was smart enough to apply them. See, the technique of vascular suture was really started in Europe. [Just after the turn of the century] Alexis Carrel saw some of these things being done in the laboratory by the French, and he came to the Rockefeller Institute and began to use vascular suture in animals. He found that he could join arteries together, that they would stay together, and they wouldn't leak and would heal. So he used the technique to transplant organs. He transplanted a heart into the neck of a dog and anastomosed the vessels. The vessels stayed open, and the heart lived. A number of his experiments of this type were responsible for his getting the Nobel Prize. These are techniques which young residents do all the time now.

Hughes: Yes, but there was a tremendous gap before--

Gerbode: Well, that is true. It takes almost twenty years, almost a whole generation, between the discovery of a method or a technique and its full application.

Hughes: Do you think that's a matter of one generation dying off and a new one--?

Gerbode: No, it just takes that long for the idea to sink in. Now, the great people of this present generation are the ones who recognize those things which are all about us now and start doing them now rather than [waiting] for the next generation.

Hughes: Was the main problem the fear that the sutures wouldn't hold?

Gerbode: Yes, they didn't think they could do it technically.

Hughes: You published a paper on coarctation with Geoffrey Bourne in 1951,* which meant you did the operation in 1951 or 1950, very soon after the first operations for coarctation had been done. Was that a fear of yours? I would think that suturing the aorta would be one of the most scary things to do.

Gerbode: Yes. The difference between that operation and suturing an artery in a wound is that if you suture it in a wound, you'd feel that maybe the wound would get infected and then the arterial suture would break open. That was one of the scary things. But as it happened, there are methods of covering that arterial repair with a flap of tissue, and then also being sure that the tissue that you used was absolutely clean. Also, later we had antibiotics. We had penicillin. We could cover infections a lot better. Those were the main reasons. But I think just the fear of being [un]able to suture it together and the fear that it might break open or rupture was something you had to overcome.

Hughes: Was that in the back of your mind when you first started?

Gerbode: I don't know. When I was operating on children for congenital disease, I wasn't really thinking very much about war surgery.

Vein Grafts

Gerbode: Later on, toward the end of the Korean War and in Vietnam, I was still a consultant for the navy, so they had me over at the Oak Knoll Naval Hospital about once a week operating on arterial injuries. I was doing the leg repairs over there. I wrote a paper on it.**

*"Surgical treatment of a case of coarctation of the aorta with unilateral hypertension, associated with ungovernable tempsers," British Journal of Surgery, 1951, 38:3840386.

**E.H. Dickson, T.E. Ashley and F. Gerbode, "The definitive treatment of injuries to the major blood vessels incurred in the Korean War," Western Journal of Surgery, 1951, 59:625-634.

- Hughes: I believe that was the one where the cases were mainly arteriovenous fistulas and aneurysms?
- Gerbode: Yes. I did some vein grafts on patients who'd had ligation of major vessels, and I put a vein in as a graft.
- Hughes: I noticed that in some cases you used a vein graft for the artery. Why would you use a vein?
- Gerbode: Because there wasn't an artery available to put in.
- Hughes: Oh, it's as simple as that! [laughs]
- Gerbode: And also the fact that a vein is usually available. For example, in all these coronary bypass operations now, where they jump over a diseased portion of an artery to the heart, they use a vein from the leg.
- Hughes: And these in most cases were autonomous grafts?
- Gerbode: Yes, they're from the same patient.
- Hughes: But you did use homografts as well?
- Gerbode: No. Well, later on, when I set up a graft bank at the Irwin Blood Bank, where we freeze-dried arterial grafts, I used some of those in patients instead of veins.
- Hughes: When was that?
- Gerbode: Fifties, after the war. But after a year or so, we saw that some of those grafts became calcified.
- Hughes: Both types now?
- Gerbode: No. Mainly the homografts. So we stopped using them. At that same time, we began to use cloth grafts, which were becoming very much available.* The first cloth grafts were made out of nylon at Columbia mainly by a fellow by the name of [Arthur B.] Vorhees, [Jr.]. They were made out of very thin nylon cloth. Later on even lady's nylon stockings were sewed together and used--in fact, I made some myself and used them in humans.
- Hughes: Why did you choose nylon?

*Part of the discussion of cloth grafts was moved from the interview session on 8/10/83.

Gerbode: Because it was thin and strong and easy to work with. But we found later on that nylon disappeared in the body. It was absorbed. After a year or two these grafts would get soft and become aneurisms or would get weak. So it was later that dacron was used. Dacron was found not to disappear this way. This again was based on experimental surgery. This was all found in animals.

A lot of the best research on cloth grafts was done by Dr. [Michael E.] DeBakey. He quickly saw that he should get the cloth manufacturers interested in it, which he did. They produced some materials, first with rayon and nylon, and then later dacron. They found that rayon and nylon didn't last long enough; they got soft and broke. But dacron lasted indefinitely. So when these [dacron grafts] became available, we used those in clean wounds, and they still do, although at the present time, it's still a bit better statistically to use a vein for a graft in a leg than it is to use a cloth graft.

Hughes: Does anybody know why?

Gerbode: Because it's living tissue, the patient's own tissue.

Hughes: Then why wouldn't that apply elsewhere?

Gerbode: Well, that's where they're using them mostly, in the leg. We use them everywhere--around the heart, in the heart.

Hughes: And calcification isn't a problem?

Gerbode: No, it isn't.

Hughes: So the body obviously is, in a certain sense, recognizing that the homograft is foreign.

Gerbode: Sure, it's a form of rejection.

Hughes: Can you say something about the knowledge in those days of the mechanism of rejection?

Gerbode: We really didn't know about the whole field of rejection until people were able to type blood and tissues. People could type tissues to find out whether they were more or less compatible or completely incompatible. This was necessary because of the early

Gerbode: techniques of using renal transplants. They found that if they could tissue type them, and found that they were compatible, that more grafts would take.

Hughes: So it was renal transplants--

Gerbode: The renal transplant really was the one that put tissue typing on the map.

Hughes: That was the '60s?

Gerbode: Yes.

Hughes: So you didn't have any sophisticated system when you first started the vein grafts?

Heart Transplantation*

The Problem of Rejection

Gerbode: No. Actually, we could talk about heart transplants in this regard, too. Dr. [Norman] Shumway and a team were doing cardiac transplantation in our old [dog] laboratory on Sacramento Street very early on, using hypothermia, just cooling the heart down and then transplanting it quickly. I kept watching these procedures, and I could see that technically it was feasible, all right, but I kept raising the question of rejection. I said, "There's not much point in doing all this if the body is going to discard the heart very quickly."

Dr. Shumway believed that sooner or later they would find out a way of controlling rejection, which is more or less true right now, because they use the same techniques for blood and tissue typing, as is used for renal transplants.** That was closer to what they wanted. There was one very well known surgeon in the South who said,

*See pp. 194-196, 354-355, and 468-469, for further discussion of heart transplantation.

**Further discussion of Shumway's work on heart transplantation occurs in the session recorded on 9/27/85, pp. 251-253.

Gerbode: "I don't think there's anything to this tissue typing. I think the main thing is just to put that heart in." Well, he put about twenty of them in, and they all died. But he's that kind of a fellow.

Hughes: This isn't a Texan now?

Gerbode: Well, I'm not saying.

More recently drugs have been used to control rejection. We can talk about that later sometime perhaps, although that's not much I have anything to do with, because I never got into transplantation.

Hughes: Why?

Gerbode: I stopped operating a few years ago. We did a lot of experiments in cardiac transplantation in this lab in 1975-76-77. The animals would live for a certain length of time, but the hearts would be rejected. And there wasn't anything we knew about in an animal that could keep that [from happening]. So it was kind of a futile thing to me at the time.

Hughes: Yet other people were using the technique on humans, is that not true? Christiaan Barnard?

Gerbode: Yes, they were. Shumway was using it on humans then, too. But the success really got going when they began to use drugs to help prevent the rejection phenomenon and improved tissue typing.

Hughes: So that's what held you back?

Gerbode: Yes, I couldn't see any way of controlling [rejection].

Norman Shumway

Hughes: Could you wind up by saying a little about your association with Shumway?

Gerbode: Norm was trained in Minneapolis. He didn't have a full residency in surgery according to the regular method of training a surgeon. He was exposed to hypothermia as a technique for doing open heart surgery through the work of [John F.] Lewis, who was then on the faculty at the University of Minnesota. Norm came out here looking for a place to work. Dr. [Victor] Richards was the acting chief of

Gerbode: surgery at that time, and he gave him the opportunity to work in our old dog lab, where I was working, too. Norm started doing cold arrest of the heart--a technique of cooling the heart down, so it could be stopped and then operated upon--and developed a technique for that which he used later for a long time on humans. The rest of us used it, too, to a certain extent.

He also kept plugging away at transplanting dog hearts. Then he started a unit of cardiac surgery at Children's Hospital, which was really in competition with our unit here. But there wasn't any place for him to work other than over there. So he did a few cases over there. But they never really had a good team at Children's Hospital. It wasn't organized as a big team, and every operation was kind of a new experience.

Fallout from Surgical Advances

Gerbode: One of the most important points about Norm Shumway continuing his transplant work in the face of no real ability to cope with the rejection phenomenon is that when surgeons demonstrate they can do something, it stimulates a lot of activity around that particular procedure. Now, when it was demonstrated that we could repair the inside of the heart, or the heart itself, it stimulated a tremendous amount of work among the cardiologists. As I mentioned to you before, it made cardiology a different thing entirely. It taught the anesthesiologists a whole different way of dealing with anesthesia. It taught cardiac physiologists all the principles of dealing with seriously ill patients. It brought out all the developments in better resuscitative care of pulmonary insufficiency, and so forth.

So the fact that the surgeon could demonstrate repeatedly that [transplantation] was technically feasible put the burden of experimentation and development on the others who could support this venture. In other words, if you could conquer the rejection phenomenon, it was apparent that you could transplant almost any organ except the brain and spinal cord.

Hughes: And that was apparent early on, was it not?

Gerbode: It was apparent as soon as surgeons demonstrated they could do it.

Hughes: Carrel had shown that way back in the early years of the century.

Gerbode: [He] did. It took twenty years for them to catch up with what Carrel was saying. But the same thing is true about vascular suture and arterial repair. As soon as surgeons demonstrated that they could repair arteries and help patients with arteriosclerotic occlusive disease with grafting, then this brought out the production of vascular grafts made out of fabrics--the biggest industry of this kind in the whole world. There isn't any country that can touch us in this industry of making grafts out of prosthetic material.

Consultant Positions##

[Interview 6: August 24, 1983]

Oak Knoll Naval Hospital, Oakland

Gerbode: After the war, both the army and the navy recruited some of the people who had been in the war to be consultants. The first government group to ask me to become a consultant was the United States [Oak Knoll] Naval Hospital in Oakland. I guess they invited me over because I'd already established myself to a certain extent in vascular work and was doing the beginnings of heart surgery. They had a fair number of patients there who were service people who had vascular and heart problems. I would go over once a week and lecture and occasionally would do an operation. In the beginning [I would] operate perhaps once a week on the same day as doing a lecture. I found this very rewarding. I liked going over there, because they were very fine people, and they approached everything very much on an academic level. The pay was very small, fifty dollars a day.

Letterman General Hospital, San Francisco

Gerbode: I felt I was continuing to do my duty toward the armed forces.

Then a year later, I guess some of the army people realized that having been in the army for three and a half years, it was rather strange that I was being a consultant for the navy. So the army invited me to be a consultant at Letterman. This was very good, because I could easily get there, and the people who were in charge

Gerbode: were very compatible. I started operating at Letterman as well and, in the beginning, teaching them how to do major vascular work and some cardiac work.

Hughes: Did you go on a regular basis?

Gerbode: About once a week I'd go there for a half a day and would lecture or go to their conferences, and then operate when the occasion arose. Now, of course, they have a full training program in thoracic and cardiovascular surgery. I got there only as a consultant on call, not operating any more. All during this early period, some of the people from the army and the navy would come to our conferences here, which was then Stanford, as part of their educational program.

Hughes: How did that arrangement arise?

Gerbode: I arranged it. I just invited them to come, and they would come once a week, mainly to our catheterization conference, where we would discuss cases. This was also a very nice arrangement. I am still a consultant with the army, but I terminated my consultant's job with the navy, because it wasn't practical for me to go over there any more.

Positions in Washington, D.C.

Gerbode: I've held various consulting jobs, not only in the two hospitals, but in the central government in Washington as well. I was on the National Research Council for several years. I was on the Surgical Studies Section of NIH for a long time, and several other committees like that in Washington. So I have a long track record of round trips to Washington, paid for by the government.

Hughes: Do you know why those appointments came about?

Gerbode: I guess they thought I had a reputation for doing things fairly and squarely and making decent decisions. I enjoyed being on those committees, because I was always with friends.

Hughes: Did it tend to be the leading people in the field?

Gerbode: They were all academic people. They were professors of surgery or associate professors.

[interruption]

Hughes: I was wondering what the differences, if any, were between Letterman and the naval hospital?

Gerbode: They were very much the same. In fact, for a long time there was a big discussion about whether they should build a new hospital in Oakland and a new hospital at Letterman. The programs were so similar that I was one who advocated building one armed services hospital instead of building two. My friend Frank Berry, who was then undersecretary of health in Washington, was also a strong advocate of building one hospital. But one cannot get these services together. The one place where they got them together was in Honolulu, where they built one hospital for the army and the navy and the marine corps. But it went down as a very strong, big pill, which nobody really liked to swallow.

Hughes: Too much territoriality.

Gerbode: Yes.

Hughes: Was it unusual for military hospitals to have such an academic interest?

Gerbode: It was unusual before the war, but after the war the veterans' hospitals and the [military] service hospitals realized they'd have to have training programs to train specialists in general surgery, general medicine, and all the other specialities. In order to do that, they had to have some sort of an academic program going, so they had to utilize the nearby medical schools.

The veterans' hospitals reorganized their entire approach by putting the hospitals in charge of medical schools. The dean's committee of the medical school in that area really ran the professional aspects of the veterans' hospitals and improved the care of the veterans enormously as a consequence. This is still in existence. The professional part of the veterans' hospital here in San Francisco is really run by the dean of the University of California. He puts men over there as consultants, and usually they're academic people. He actually puts residents through there from his training program at the county hospital [San Francisco General] and at U.C. So it's been very good.

Hughes: After the war, you wrote a number of papers on vascular surgery [where] the injuries were the result of the war. Were those cases done at one of those hospitals?

Gerbode: Yes, I did quite a few, mainly at the naval hospital, because they had a whole batch of marines who were shipped in there who had been badly shot up in the Far East. So they invited me over to consult on them. I helped them reestablish circulation, mainly in legs and arms. Occasionally I would take a foreign body out of the chest somewhere. Frank Spencer was over there with me for a little while, before he went to the Far East. He's now professor of surgery at New York University.

Hughes: You mean he was there on a permanent basis?

Gerbode: No, he was there to do his military duty for two years. In any event, I guess the army thought I'd contributed something to developing their thoracic training program at Letterman. So a number of years later they gave me a very important civilian service award, which is a nice little medal. They had a ceremony when they gave it to me at Letterman, and they had the army band from Sacramento playing on the stage. At the same time that they gave me the award, they were giving the certificates of training to their residents. The band was playing merrily on, and when my turn came to get this award by the general, I thought the music sounded rather strange and semi-familiar. But if you've ever heard an army band, you sometimes have difficulty understanding what they're playing. [laughter] I finally realized they were playing "I Left My Heart in San Francisco." [laughter]*

*A discussion of the peer review system was moved to the session recorded on 8/26/84.

V PRESBYTERIAN MEDICAL CENTER, THE HEART RESEARCH INSTITUTE,
AND COMPUTERIZED PATIENT MONITORING

The Stanford Medical School's Move to Palo Alto, 1959

Debate Over the Move

Hughes: Do you want to move on to the move to Stanford?

Gerbode: Yes. As soon as I came up [to San Francisco] from Palo Alto and medical school, which was 1932, I began to feel that there were people around who wanted to move that school to Palo Alto. The faculty in San Francisco mainly wanted to rebuild the hospital and the medical school up here. They liked San Francisco. They had a very good teaching program at the county hospital, half of which they ran. They felt that it was better for a medical student to grow up in a relatively big city, and see all the various aspects of medicine than to be in a small town which is not representing a cross-section of what the world is about.

However, as time went on, we had a president [of Stanford] by the name of Don Tressider, who was a member of a family that had been with Yosemite for a long time, and he was very interested in rebuilding the school in San Francisco. He was a very good friend of the dean, Yank [Loren R.] Chandler. As long as Tressider was president of the university, the thought of rebuilding the school was predominant. But unfortunately he had a coronary and died on the East Coast.

Then Wally Sterling was made president. Wally was very much influenced by some of the people in Palo Alto, particularly some of those who were connected with the Palo Alto Clinic. Although he is a very fine man, and I've liked him, and I think was a great

Gerbode: president of Stanford, I think he had very strange thoughts about doctors and medical schools. Some of it may have come from the fact that he came from a minister's family. But I think he really has never been exposed to what went into medical schools. However, as time went on, his thoughts predominated, and it was decided to move the school to Palo Alto.

Hughes: What was he afraid of?

Gerbode: He wanted to have everything on one campus, and there's certainly justification for it.

Decision to Stay in San Francisco

Gerbode: So at this time [1959] there were forces which tried very hard to get me to move to Palo Alto. Various committees approached me to ask if I would go down and be chairman of the department of surgery. Another committee asked me, if you don't want to be chairman, would you go down and be dean of the medical school? At the same time, the University of California, thinking that maybe the school was going to move, thought they could capture some of the faculty of the old Stanford school. So two committees came to see me and asked me if I would start a heart program at U.C. They had one going already, but they weren't particularly happy with it.

Hughes: This was the late '50s?

Gerbode: Yes, 1958 or '59. I realized that if I moved to Palo Alto, it would mean that I would go back to living in a very controlled environment, and so would my wife. She was at that time, in the '50s, getting to be known in San Francisco in various organizations and enjoying it, too. She liked working with things in the City. I'm quite sure that had I decided to go to Palo Alto, I would have had to go down there alone, [laughter] which I was not too keen to do anyway.

The other thing about moving to Palo Alto is that I really don't like the small-town concept of a university [community]. A university community [is] like a small town. Everybody knows what you're doing. When you buy a new car, it's a subject of general conversation. If your house is bigger than somebody else's, there is a great deal of discussion about that. If you give a party, everybody knows it. It's Main Street all over. I don't like that part of it. Now, some people can live in this environment and thoroughly enjoy it, but I couldn't.

Gerbode: The other reason I didn't want to go was that I felt that in building a new medical school at Stanford, there was going to be an awful lot of administrative planning, a lot of committee work. This would mean that if I had gone, I would be in committees all the time and not trying to develop heart surgery. I knew the history of other medical schools that had moved. It usually took one whole generation before all the problems were sorted out.* So I had to decide whether or not I wanted to become the professor or develop heart surgery. I decided that I wanted to stay in San Francisco, and my wife didn't want to go to Palo Alto. So that was the decision.

Attempts to Retain a Connection With Stanford

Gerbode: We tried desperately to get Stanford to keep a connection with us up here, retain an academic program as a post graduate medical school, or something. But Dr. Sterling wanted to cut it off completely. He wanted a complete amputation.

I can remember the discussions with some of the board members of the university, notably Dave Packard, who was chairman of the board of trustees. He obviously was told, "Don't let those San Francisco people have anything, because we need all the patients. We need everything we can get down here to get this school going." This was a different point of view than what they were saying. They were saying that there were plenty of patients in the area around San Jose and Palo Alto, and they had big charts to show this. They also had charts showing the population growth, so they needn't have feared competition up here at all. However, at meetings, which were being held mainly at the Fireman's Fund Insurance Company, Dave Packard's theme song was to bury the old medical school. They even wanted to close the outpatient clinics, thinking that if we retained an outpatient clinic, that this would take patients away from Palo Alto. Obviously, most of the patients didn't come from Palo Alto. A great many lower income residents came from nearby. This was, again, a foolish position to take. They said [they were] going to lose money to keep those outpatient clinics going. This was then called San Francisco Stanford Hospital. So then I said to some of my colleagues, "Suppose we get a group of people together and say we will underwrite the expense of keeping the outpatient clinics going?" So we got forty doctors to each pledge a thousand dollars if necessary to keep the outpatient clinics open. With this threat,

*The two foregoing sentences were added from the session recorded on 8/16/83.

Gerbode: Stanford couldn't very well close them. [laughs] So they kept them as they were, and nobody lost any money, and the clinics went on. But we had to play a strong game with them to get them to do this.

However, regardless of what I did or anybody else did, they would not retain any academic connection with San Francisco. I made several trips down to talk to Wally Sterling about it. They were very much influenced by Russ Lee, who was then running the Palo Alto Clinic. He had the ear of the president and the people on the campus. They listened to him more than they listened to anybody else. Russ Lee's primary mission in life was to make the Palo Alto Clinic a bigger and better place on the peninsula.

To show you how Russ Lee operated: [He], some of the faculty members from San Francisco and some of the ones who were going to be in Palo Alto were having dinner together. Russ Lee said to me, "Frank, I think the best thing to do when the medical school moves to Stanford is for the Palo Alto Clinic to take all the private patients, and we'll give you plenty of teaching material. We'll give you all the teaching material you want in exchange for running the private patients." Well... As if nobody could see through this suggestion. It was obvious that this was the way he was working and thinking. He was a very smart, clever man in this respect. Unfortunately, I think some of the people in Palo Alto listened to him rather seriously.

In any event, since the decision was made to move, then we had to try to figure out what to do with what was left. The San Francisco Stanford Hospital was really in terrible shape. The old medical school was really in worse shape.

Hughes: Excuse me, but the preclinical years had always been at Stanford?

Gerbode: They had the first year and the first quarter of the second year at Stanford. So the rest, two and three-quarters years, were up here.

Hughes: And that was all going to change.

Gerbode: The whole thing went down there. Simple things like putting two automatic elevators in the old Stanford Hospital was a huge hurdle. But we finally got Stanford to underwrite these two automatic elevators. But things were financially in very bad shape.

Hughes: They just weren't willing to pay for anything.

Gerbode: They weren't willing to do anything.

Hughes: Were they just hoping that the place would fold up?

Gerbode: Oh, yes. They wanted it to fold up. In fact, a lot of the doctors who had been sending patients into the old Stanford Hospital thought it was folded up. But anyway, the thing that really saved it was the fact that heart surgery was really kind of exploding, and we began to fill up the place with heart patients, because we were the only one on the West Coast doing open heart surgery. All the old channels opened up, and they sent all the patients to us. This wasn't only from the Bay Area, but also from Alaska and Oregon and Nevada.

Hughes: The whole West.

Gerbode: The whole West, really. Some of the patients even came from Los Angeles. Of course, this also made Stanford want us to move to Palo Alto even more. Anyway, the lady that runs the cashier's desk [at Presbyterian Hospital], who's still over there as a matter of fact, said, "Please, Dr. Gerbode, don't leave town." [laughter] The heart surgery and all the cardiology connected with it was really keeping the place alive.

Staff Decisions about the Move

Hughes: What about the staff, now?

Gerbode: A handful of the senior, high-level faculty moved to Palo Alto.

Hughes: They were attracted by good positions there?

Gerbode: Good positions. Some of them were promoted. They were made professors or associate professors, and they automatically got tenure then, which appealed to them a good deal.

Hughes: It would have been possible here, too.

Gerbode: No, we had no way of giving them tenure up here. The bulk of the clinical faculty who was not full-time stayed here in San Francisco, because they had practices here and didn't want to move. Some of the full-time faculty decided to stay as well.

Hughes: Who was there at that time in cardiovascular surgery?

Gerbode: Norm Shumway had moved out from Minneapolis. He came out really to try to get a job somewhere, and there wasn't anything open. So he started doing experiments in our old dog lab.

Hughes: Right about this time.

Gerbode: Nineteen fifty-five or '56, somewhere in there.

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Gerbode: I was at the same time developing heart-lung machines. So the old lab was pretty busy, busier than almost any other place in the old hospital.

Hughes: Was there anybody else?

Gerbode: Yes, there were some others who were trying to get into the heart picture at the time. Jack Connolly was doing some experiments and trying to get into the picture.

Hughes: Did he succeed?

Gerbode: He didn't really get fully into the heart surgery business. He moved down with the group to Palo Alto for a short while, and then became professor of surgery at U.C. Irvine.

Hughes: Was there any feeling of betrayal when people left?

Gerbode: No, there wasn't. We just felt that they should go where they wanted to go.

Hughes: What about your frame of mind with the threat of the whole institution folding under you?

Gerbode: I had my ego to cope with, because I had to make a decision of whether to be the professor and ride the tide or to fight a different kind of a battle up here and stay. It took me several months to really sort this out and decide to stay. But when I thought about my family and wife and the life in San Francisco, this made the decision quite a bit easier.

Hughes: Did you ever have doubts about it?

Gerbode: Once I made up my mind, that was it.

Hughes: You didn't have any doubts about the institution itself being viable?

Gerbode: I had doubts, but I felt that, knowing the history of the place-- You see, it was the first medical school in the West, and it was the best hospital in the West for many, many years, even before Stanford took it over. It had a beautiful location in San Francisco. The property was ideal for a hospital and for a teaching hospital, because they were right next to the people on one side that could pay for services, and on the other side, the people who needed to have services and couldn't pay for them. [Elias Samuel] Cooper and [Levi Cooper] Lane, who started this whole thing, realized this. So they had both the outpatient services and the paying beds filled. An ideal situation.

But in any event, I really believe that heart surgery saved the place. That plus the fact that we really kept telling people, "We aren't dead. The place is still open, and we're going to go somewhere."

The Institutes of Medical Sciences*

Gerbode: Then the question came up, what to do about research? With Stanford pulling out and not being willing to sponsor anything in research or teaching, I decided that the hospital really couldn't have a very good research program at that time, because the departmental chiefs were not particularly interested in research, and everybody was thinking more than anything else about how to save the hospital, which was justified.

So I decided that I'd get together with the people who were going to stay who were former full-time teachers in the medical school and put together some other kind of organization to keep the research going. At that time, we had about two hundred and fifty thousand dollars of grants with NIH and the Cancer Society and a couple of other small organizations, like the Heart Association. I asked them if we [started] another [research] organization in San Francisco, would they transfer the money to this organization. I also went to Stanford and asked, since the money wasn't going to go to Palo Alto, would they mind letting us move it into another organization. They all agreed.

*See the sessions recorded on 5/15/84, pp. 380-387.

Foundation

Gerbode: So then I had my cousin, Bud Chandler, put together a nonprofit research organization called the Institutes of Medical Sciences. Jack Osborn, Henry Newman, Arthur Selzer and Fred Merrill joined in this basic thinking with me and were the original founders. Mrs. Harley Stevens, an old friend, was also one of the original founders.

Hughes: Was it your administrative abilities coming to the fore again? Why were you spearheading this?

Gerbode: I don't know. I suppose I've always had a certain amount of momentum, and it was the momentum that made me do it again.

Hughes: [laughs] That sounds like an understatement.

Gerbode: I realized that I had to do something to form the basis for a research organization. I went back to the Rockefeller Institute in New York and sat down with the director and asked him how it all started back there. I said, "I'd like to see your bylaws and your original charter." He said, "It was very simple. We had very few rules and regulations, and we simply set up an organization where research people could work freely without being interfered with, and kept the environment simple, but good for them." This is what I more or less had in mind, that we would have a simple organization where there weren't many rules and where people who wanted to do research, could do research without interference. The organization was to be simply there to help them, not to regulate them. Perhaps the old Stanford expression "Die Luft der Freiheit weht," the winds of freedom blow, was in the back of my mind to a certain extent.

Anyway, we transferred the grants to this little organization. We had one lady running the administrative part. She did everything. She established the first payroll and the first everything that was necessary, in one little room. Now we have a huge administrative staff in this organization. Some people think it's too big.

Hughes: Did people stay pretty much on the same salary when they moved from Stanford to the institutes?

Gerbode: Yes, they did.

Hughes: But there was no longer any academic connection?

Gerbode: No academic connection at all. Some people had academic appointments with the University of California, and some of them retained clinical appointments with Stanford. I was made a clinical professor at Stanford and a clinical professor at U.C., which meant that I would teach part-time or be called upon to do teaching, research, or administration, when necessary.

Hughes: I know that the clinical appointment at Stanford had been long-standing, but do you remember when the appointment at U.C. occurred?

Gerbode: When I decided not to move to Palo Alto--at that time I was an associate professor--the dean, who was Windsor Cutting, promoted me to clinical professor. This was about the same time that U.C. made me a clinical professor as well.*

Hughes: Was there any particular tie-in with the move?

Gerbode: I guess U.C. wanted me to be [part of the U.C. program]. I was not the only one who was brought into the U.C. program one way or the other. We had a pretty good thing going [cardiovascular surgery], better than theirs, and so they wanted to have us associated with them.

Since the heart surgery was going so well, and since the people in Washington were really quite sentimentally connected with some of the people who didn't want to go down there, they were anxious to help us. There were people in Washington who felt that it was a mistake to move the school back to Palo Alto, that it would have been better to leave it in San Francisco. They cited Northwestern, New York University, Harvard and Hopkins as examples of medical schools which are great and which had stayed in the bigger city. So they were rather favorably inclined toward helping us one way or the other. We had such a vigorous program going in cardiac surgery. We were writing papers, too, and developing research to back up the programs.

The NIH Program Project Grant

Gerbode: So I applied to NIH for a huge grant, called a program project grant. The administrator in Washington of the Heart Research Institute of NIH came out, and we spent a couple of days talking about it. I

*According to Dr. Gerbode's curriculum vitae, he became clinical professor of surgery at UCSF in 1964. The appointment ended in 1976.

Gerbode: said, "How much do you think I should apply for?" He said, "You apply for whatever you think you need, and the peer committee will decide whether or not you get anything.

So I applied for a million dollars a year for all sorts of things.

Hughes: That was an enormous sum in those days, wasn't it?

Gerbode: It was. The committee came out, and looked us over. We had a couple of meetings in Washington. Finally it was all done; they gave me something like four hundred and fifty thousand dollars a year for five years. After this other grants were given for another five years.

Hughes: Were you satisfied with that?

Gerbode: Oh, yes. It was that big grant which put together the heart unit here in San Francisco.

Hughes: What were the stipulations?

Gerbode: I had a separate training program, too, which [NIH] gave me, so I could train two fellows in cardiac surgery a year. That was paid for out of [an NIH training grant]. The money entitled me to buy equipment, to do research with equipment, to pay for dieners engaged in research and some salaries for research people--not for me or for any of the professional people.

Hughes: That was coming from the Institute?

Gerbode: I never took a salary from anybody. I made enough money out of operating. In fact, over the years, I put more money back into the heart program than I ever took home. I made contributions to pay for personnel, equipment or travel--whatever.

Hughes: This was through the Gerbode Foundation?

The Heart Research Institute Fellowship Program in
Cardiovascular Surgery*

- Gerbode: No, this was direct contribution from my practice. We had some money for training from Washington, and I got Mrs. Ed Heller of San Francisco to give me another training fellowship for about three years. So I began to bring fellows in to train in cardiac surgery. I needed them anyway, because we didn't have any residents. The residency program [had] moved to Palo Alto. We had a few interns, but that's all.
- Hughes: How did you select the fellows?
- Gerbode: A lot of people wanted to come and work with us, because there was a lot of heart surgery [and] research going on, and it was one of the most active places in the country, both in the laboratory and clinically. So I had applicants from a lot of places, and I decided that I would choose the best men every year regardless of where they came from. This was quite different from the attitude of many other places, which felt obliged to take only Americans in their training programs. But I felt that cardiac surgery was a world enterprise, and that all countries needed to do it, and they needed young men to push it forward. So I took people from any country. If the candidate was better than anybody else I had locally, I would take him. As a consequence, among the very first were the English. I eventually had twelve men from the U.K. whom I had trained.
- Hughes: Each of whom stayed for a year?
- Gerbode: One to two years, sometimes even three. I gave them a lot to do. They didn't really do all of heart surgery when they were in training, but they did parts of every operation. Whatever I felt they could safely do, I let them do. I thoroughly enjoyed this part of my career. I just loved working with these young men, because they were all bright and very able, and they had a place to go. That was one other stipulation I made, that I wouldn't take them unless their institution would take them back in the field [of cardiovascular surgery]. So that meant that a professor would send his brightest man over, or the man he was going to designate to carry on with the work when he came home.

*Some of the fellows participating in the program are discussed on pp. 400-407.

Gerbode: Also, the American Association for Thoracic Surgery had an Evarts Graham Traveling Fellowship. They appointed [a fellow] every year. Once he was given the traveling fellowship, he could go anywhere he wanted. I was lucky to get four of these Evarts Graham fellows, and they were sponsored by their own universities or groups at home, so they really all had a good place to go back to.

Hughes: I would think not only were you helping the individual, but you were certainly giving an impetus to cardiac surgery in each one of those institutions.

Gerbode: Yes, it helped, because once these fellows came over here and had a year or two, when they went back, they had a story to tell, and people listened to them. So they had to give them equipment; they had to help them get started. It was great leverage.

Hughes: Has [the Heart Research Institute fellows] program been discontinued?

Gerbode: Yes, it has. It was discontinued I guess for two reasons. One is that I was no longer running the department and the others in the department were not as interested in teaching. But the other reason is that the government turned off the foreign fellows program. There was much pressure on Uncle Sam to keep the flood of immigrants in the professional sciences out of this country. Many of them came from underprivileged countries and then never went back. It takes an awful lot of money to turn out a doctor in a third-world country, and then having spent all this money on him and sent him over here for further training, to not have him ever come back is not very good.

Hughes: I guess it would have been an abridgement of individual freedom to stipulate that in order to participate in the program here, the individual must return to his native country.

Gerbode: I tried to always pick my fellows so that it would be a requirement that they would have to [return to their country]. I think all but two or three have gone back to their country to continue their work. There are two Indians who didn't go back. All the Germans went back; all the English went back except one.*

In the end I had over eighty men go through the unit. They weren't all real fellows. Some of them were residents. I think there were eighty-eight fellows. Out of the eighty-eight--I've kept

*Some of the foregoing material was moved from the session recorded on 8/26/83.

Gerbode: track of them pretty well--sixty-three currently now are either chiefs of service or associate chiefs of service or professors of surgery. There are only two or three that went into pure private practice. And they're scattered all over the world.

Hughes: Did the fellows not only operate, but also do research as well?

Gerbode: It wasn't a requirement that they do research, but everyone had a research program, either clinical or experimental. Most of them did experimental surgery.

Hughes: I imagine that in most cases that was unusual in their countries of origin.

Gerbode: Yes. Many of them had never done any experimental surgery at all. When they went back, they helped their institutions set up experimental laboratories, and that pushed their programs forward quite a good deal.

The great thing about having these fellows all over the world is wherever I go now, there's somebody there who's been in the institute. It's like being a member of the family. For example, in India there are four outstanding heart surgeons who may meet you at the airport. There are four in Australia, all doing very well. Twelve in the U.K. I think three of them in Germany. Two of them in Norway. One in Sweden. He's going to be made professor of surgery in one of the biggest and oldest medical schools this year. Halsted, who was the so-called father of American surgery, the professor of surgery at Hopkins, was quoted to have said that if a professor or a chief trains six men in his lifetime, he will have accomplished what he should have.

Hughes: Well, you did much more than that!

Gerbode: Anyway, it was really great fun, and also my wife enjoyed having people from outside of the United States in my home. We'd have little after-dinner discussions once in a while at home. My daughter [Maryanna], who was a little girl then, used to like it because we always had donuts, and she loved to come down during the party and eat a donut.

Hughes: In most cases, did they go home to find that their chiefs were receptive to the changes....

Gerbode: In most cases they were. But they found that it was very difficult to get things done in many places.

Hughes: I imagine equipment would be a great problem.

Gerbode: Yes, and the politics really floored them in many cases. For example, one of my fellows from Denmark went back, and he was persumably to be given a job to get heart surgery going better than it was. But the politics were so terrible in the hospital, he just was very frustrated. In fact, I saw him last year, and he said although he's gotten it going, there's still jealousy and pulling and tugging. He said, "You taught me how to do the work, but you didn't tell me how to do the politics." [laughter] I said, "Well, that's something you just have to learn as you go along. All life is politics." All life is politics, and all life is compromise.

It is true that the political aspects of anything like this are really horrendous at times. In fact, the politics here were very difficult. It was very difficult for the doctors to accept the fact that we wanted to build a research building.

Hughes: You mean the doctors that were part of this complex?

Gerbode: The doctors who didn't go to Palo Alto. They wanted a hospital, and they couldn't understand why we would spend a hundred and fifty thousand dollars to build a research building. I said, "You can't build a hospital for that amount of money. You don't even get started with a hundred and fifty or two hundred thousand dollars. Uncle Sam is giving you the research building."

Presbyterian Hospital

Gerbode: It was hard for them to understand that. They felt that everybody should be doing one thing, getting a new hospital. Well, we needed to do that, too, and finally we did it. But that's another story, how we got it done.

Hughes: Isn't this the time to talk about it?

The Presbyterian Church

Gerbode: Yes, I think probably. [We] got a new board of trustees when Stanford finally decided to transfer the property to the Presbyterian Church. The presbytery of San Francisco said they'd be willing to take on the hospital. Traditionally in the Presbyterian Church they have good hospitals in a lot of parts of the country that are very successful. There's one in New York. They'd just finished another one in southern California at that time. It was very good for their church, I guess, to be associated with a good hospital. They changed the name from San Francisco Stanford Hospital to Presbyterian Hospital.

Hughes: What does that mean, when the church takes over?

Gerbode: Well, it didn't mean as much as people thought. They thought that the church then would pour money into making a new hospital. But the church poured very little money in. As somebody said, the Presbyterians are mainly Scotch. They're very good at collecting money, but not very good at giving it away. [laughter] There were various committees about the old hospital, about what we could do to rebuild it. They had several planning groups come in and do things. But it was obvious you needed to get another group of people with some money or influence to make the thing go.

St. Joseph's Hospital

Gerbode: So at that time, the nuns at St. Joseph's Hospital here in San Francisco said that they looked favorably upon joining with us. They had some money to put into the program. This was fine, in the beginning, but then as time went on, the trustees realized that they weren't going to put in very much. They wanted to dominate the board of trustees of the newly formed hospital group. All they really were basically interested in was to get this hospital into their domain.

Hughes: Did they have access to a hospital?

Gerbode: Yes, they had St. Joseph's Hospital, and they were members of a national group in the Catholic Church. It was apparent that the national group was not going to put up any money either. Although the local people thought they would, they didn't.

Hughes: Why were they interested in yet another hospital?

Gerbode: Well, prestige, with a great history, you know. Their hospital, St. Joseph's, really existed because of one specialty, orthopedic surgery. That's all. The rest was really nothing.

Hughes: What about the Presbyterians? Was it a similar motivation?

Gerbode: We had the remnants of everything here, a little bit of everything was still hanging around, left over. So anyway, it was really a dilemma to know what to do.

The University of the Pacific

Gerbode: I was up at the Bohemian Grove that summer just at this critical time, and I ran into Bob Burns, who was president of the University of the Pacific. I sat down with him on a log, and I said, "Bob, I think with your university and a little luck and a little enterprise, we could start another medical school under the University of the Pacific. But you've got to get that hospital straightened out. It has promise if you want to do it."

He said, "I'll go talk to Fred Merrill right now."

So we walked over and talked to Fred Merrill, who was then chairman of the board. Bob said, "I'll see if I can work something out." He really went to work on it. He really thought that we could put together a different kind of medical school under the University of the Pacific.

With that, we decided that we would really have to get this hospital going. At that time, it was the last phases of the Hill-Burton money to build new hospitals.* So with Burns's help and connections in Sacramento, we got approval for the Hill-Burton funds to build a new hospital. We had about a million dollars or so left to us by various people. Ed Westgate, who was on the board of trustees of the hospital, was a contractor and developer. He got together a bank consortium to lend the money for a new hospital.

*The Hill-Burton Act of 1946 provided federal money to build hospitals across the United States, primarily in poor and rural areas, with stipulations on providing some free care to indigents. At least 9,200 hospitals, clinics and health centers were eventually built.

The Bank of America##

Gerbode: The day before the meeting of the consortium was supposed to occur, Ed had a call from Rudy Petersen, the president of the Bank of America. The president of the Bank of America said, "Ed, don't meet the consortium. We'll take the whole thing." I've forgotten how much they loaned us, something like eighteen million dollars or so, a big sum of money.

Hughes: Why do you suppose he made that decision?

Gerbode: He knew that there was connected with the old hospital a tremendous number of people, old friends, old patients, faculty, new patients. He knew that if the Bank of America was advertised as being the backer of this enterprise, that they'd put their accounts in the Bank of America--which is true, a lot of them did--and that the hospital would put their accounts with the Bank of America. It was a good deal from their point of view, as it turned out, because now, even after all these years, we're right up to snuff on paying off our principal and interest, and we have money in the bank. So that was a wise decision.

Designing the New Presbyterian Hospital*

Gerbode: We got the hospital built. There were a lot of design characteristics of the hospital which were influenced by the fact that they thought that eventually it might have a bigger role than just a community hospital. So they allowed for space for seminars and small groups to meet. This has proven to be very, very beneficial for conferences and things like that.

The only thing they didn't build into the hospital was a big conference hall. But they finally converted something which was originally designated for administration into a meeting [hall], so they have a conference center now.

Hughes: Did you have a role in the design?

Gerbode: Yes, I did. Luckily, I can read plans. At the same time as we were designing this hospital, they were designing Stanford Hospital in Palo Alto. We were supposed to make suggestions about

*See the session recorded on 5/22/84, pp. 398-399, for further discussion on the new Presbyterian Hospital.

Gerbode: the Stanford Hospital down there. In fact, Vic Richards, who was then chief of surgery [at Presbyterian], was supposed to go down to Palo Alto to be the chief down there. He had said that he would move to Palo Alto, so he was in charge of the design characteristics of part of the new hospital in Palo Alto. But actually, what he would do is put the plans of the new hospital in Palo Alto up in the operation room [in San Francisco], and then he would [ask people to make suggestions]. Well, nobody around here was going to make any suggestions. So as a consequence of this approach, when the new hospital at Stanford was built, the department of surgery was very small, very inadequately represented. Whereas Henry Kaplan, who was on the committee for selection of the architect and also very aggressive in what he wanted, was there every day with his suggestions about the department of radiology. As a consequence, the department of radiology had an enormous complex and everything they wanted.

Anyway, coming back to San Francisco, I had a lot of fun in the beginning when we built this research building [the Institutes of Medical Sciences], a lot of fun designing the dog lab and other parts of it, too. I went through the business of getting plans from other laboratories which had been built in the country, particularly the one which Al Blalock had built at Johns Hopkins, and used some of their plans and some of the things that I'd wanted in the design of this research building.

Coming back to the hospital, there were certain things which I considered to be important from the surgical point of view. I felt that the intensive care unit should be on the same floor as the operating room, because there are lots of times when a patient needs to go back to the operating room quickly. Also, after an operation, it's very bad for [patients] to be in an elevator, to have to go to another floor, because at that critical time, they need a lot of care quickly. It's better for them to get into the intensive care unit right away, so that the special nurses can take care of them and monitor them. So they put the intensive care unit on the same floor as the operating room.

Computerized Patient Monitoring*

IBM

Gerbode: The characteristics of how it was designed were influenced to a certain extent by the research we'd been doing with IBM Corporation. We began to use computers among the very first in the country. IBM wanted to get into the computer business, so [Thomas] Watson, [president of IBM], himself, came out with a small committee and met in the library here on this floor to discuss what might be done in monitoring with a computer. We began to show him some of the things we'd done. Jack Osborn had gotten together some very nice illustrations of what he had done with a computer which somebody had given us.

Finally Mr. Watson turned to me and said, "Dr. Gerbode, you've got this wrong. We didn't come out here to have you sell us your program. We came out here to sell you our program." [laughter] I said, "That's fine. When do we go to work?" They agreed that they would put their main research emphasis in developing computerized monitoring in our hospital.

Hughes: What was the date?

Gerbode: This was '60 or '61. We signed a contract with IBM. They sent out a team of Ph.D.'s to work with us full-time. We set up a computer room on the top floor of this research building. At that time everything was on tape with big disks, so this huge computer machinery went in up there, at the expense of IBM, with their full-time people running it and connecting it with the old hospital intensive care unit. John Osborn worked out a program. On our big research grant, we were able to put two or three people into this computerized monitoring effort as full-time research people. So the joint committee worked out all the details of what was necessary. The computers got smaller and smaller. We finally got rid of those big machines. IBM worked with us for about ten years. They spent over a million dollars developing the programs which were largely directed by John Osborn.

Hughes: Meanwhile computerized monitoring of patients was spreading to other centers?

*See pp. 198-200 and 437-438, for further discussion of computerized monitoring.

Gerbode: Yes. We were writing papers and giving talks, and people were coming out to see what we were doing and carrying back what they thought they could do at home. After it was successful, another group came out from IBM to decide what they wanted to do next. They decided finally, after all this effort, that they didn't want to go into the front end, which is the sensing end, where you take the samples and get a result and then put that number for that sample into the machine. They didn't want to develop the front end, although they had helped us develop the front end initially. They said, "We have demonstrated how to use the computer. We'll let other people develop the front end, the sensing part of it."

Hughes: Why did they make that decision?

Gerbode: I don't know. I guess they just didn't want to do it. So that meant that other people wanted to have our concepts in a front end console, a thing that you could move up to the patient, take the samples, have a machine analyze them, put that information into the computer. So Dr. Osborn, who had been running this whole program full-time, decided that he would set up a little company on Van Ness Avenue and make front ends. Later he expanded this in South San Francisco, and finally, after it became successful, he sold it to Johnson and Johnson for about three million dollars. He got a million dollars for himself, or something like that. The institute didn't get anything back out of that whole effort, however.

Hughes: What about equipment when the move was made?

Gerbode: That's very interesting. Before the move was really seriously decided upon, our department of roentgenology wanted to get an angiography unit going. So they applied for one through the NIH, through the radiology section, and were turned down. I was on the surgical studies section at that time, so I said, "Why don't you reapply and put it through the surgical studies section?" They did, and I talked long and hard with the group in the studies section, and they finally approved building a cineangiography machine out here.

Hughes: Now, was that still in the early stages?

Gerbode: It was the first one out here in the West. It ran for a couple of years very successfully, and then they decided that they were going to move to Palo Alto and take the machine down there with them. So that meant they had to rip it out and reinstall it down in Palo Alto. But meanwhile, the state of the art had improved a good deal. So the next generation of machines came along, which were even better.

Gerbode: At that time, a man by the name of [Newton] Bissinger was in the hospital and liked very much how he was treated for his heart attack. He asked, "How can I help you fellows?" They said, "Why don't you buy us a new angiography machine." So he did. So we got the latest model then, and they had taken the old model to Palo Alto. [laughter] (But a few years later they got the new model down there, too.)

Hughes: What about other equipment?

Gerbode: The other equipment was very expensive, and we constantly had to raise money to pay for our share of the development costs of all that equipment in the intensive care unit.

Hughes: How'd you go about raising money?

Gerbode: One big thing I did, I applied to the Bothin Fund here in San Francisco, which is run by the descendants of the Bothin family--Princess Genie de San Faustino and now her son, Lymon Casey, run it--for a large grant to support the development of the intensive care unit. They gave us a lot of money to help complete the program.

Hughes: Do you think most of this was thanks to the growing reputation in cardiac surgery?

Gerbode: Oh, yes. It was very exciting. The other thing was building a new hospital; we could design everything so they could put the monitoring equipment in properly.

One thing I insisted on was not to have the electronics connected with monitoring or the display screens in view of the patients. They were in back of the patient.

We designed it so that any repairs to the monitoring equipment would be done in a room behind the room where the patient was. So there was a wall; in front of the wall were all the displays; in back of the wall was another room where the repair people could work on the equipment as it broke down, or replace it.

Hughes: In general, had the instrument companies jumped on the bandwagon very quickly?

Hewlett-Packard

Gerbode: Oh, yes, they did. At the beginning of all this, I went down to talk to Mr. [William] Hewlett and Mr. [David] Packard. I said, "Look, we're going to need a lot of this work done in monitoring patients, sensing devices and computers. Why don't you help us? Why don't you make this a joint effort?" They turned me down absolutely flatly.

Hughes: Why?

Gerbode: Because they were completely sold on Stanford's program, and they felt that if they helped us, it would be disloyal for the new venture in Palo Alto. So they put all their money into Palo Alto and didn't give us one nickel. Mr. Hewlett's father was professor of medicine up here in the old medical school. There was even a local society here called the Hewlett Society, which would meet once a month in various hospitals and have clinical sessions. But [Hewlett and Packard] were both absolutely tied into Palo Alto and Stanford and I suppose decided that it would seem disloyal to send any money up here.

Actually, as time went on, they bought out a company--I think it was called the Sanford Company--which was engaged in the business of sensing devices. They bought them out, improved on them and then got into the business of the front end [sensing device] very seriously. As a matter of fact, now we're in the third generation of our sensing devices in the hospital, and it's mostly Hewlett-Packard stuff.

Hughes: What did you do when they turned you down?

Gerbode: IBM came in voluntarily just at that time and said they would do it for us. But it took a lot of money to build that unit the way it is now. We had to scrounge. I gave a lot of money personally out of the practice to it and had people make contributions periodically. Mrs. Stevens gave the money for the coronary intensive care unit [in] the intensive care unit. She gave that in memory of her husband, who died of a coronary. Her sister, Mrs. Charles Kuhn, gave another room there for coronary patients, because her husband had died of a coronary. The Bothin Fund finally set up a clinical research area, which they paid for, adjacent to the intensive care unit, where research in the cardiorespiratory diseases could be carried on. It's still being used for that, although there are some clinical units in there now which are using some of the space formerly designed for pure research. We can be very grateful for the help that the Bothin Fund gave us.

Research Programs at the Heart Research Institute

Hughes: How were you dividing up your research and your surgery? Did you have certain days when you were in the dog lab?

Gerbode: In the beginning, I was in the dog lab most of the time. But then as we worked out the programs and got busier in the operating room, we shifted some programs to those related to the clinical work. In other words, we'd study patients.

Postoperative Problems after Open Heart Surgery*

Gerbode: One of the principal problems in those days was to find out why people were sick after open heart surgery. Some of them would be mentally confused for a while. Some of them would have fevers which were unexplained. So a lot of our research at that time was to find out why the patient didn't wake up as quickly as after a normal operation. It was something to do with the machines. So we had several big research programs going, both in the dog lab, which was then here in this new [medical research] building, and in the operating room.

One of the first things we found with our own oxygenator, which Bram had designed, was that it had to be absolutely meticulously cleaned. Even the tiniest bit of old blood in there would cause a fever and make the patient sick afterwards. It wouldn't kill him, but it would make him sick and have a fever. So we finally realized we had to clean that machine with concentrated acid to get everything out of it.

Hughes: Did that mean taking the machine completely apart?

Gerbode: Completely apart, and it had to be taken over to Cutter Laboratories. We were constantly sending them over by car and bringing them back. We ended up by having twelve of them in rotation. It was expensive and cumbersome. We found out a lot of things about what happened to blood in machines, and wrote quite a few papers on it.

*See the session recorded on 5/22/84, pp. 370-371.

The Bramson Membrane Oxygenator

Gerbode: At the same time, we were working experimentally on the membrane oxygenator. We had a team specifically assigned to that, Bram and another engineer. Cutter Laboratories had a group on it, too. Then we began to use it for long-term perfusions in the experimental laboratory. That's when Dr. [Donald] Hill came aboard and ran a series of dogs on the membrane to see how long you could keep an animal alive on it. We had others working in the lab, too, on various projects. Dr. David Hill did some very good work on membranes as did Dr. [John] Wright from Australia. This was going on while the program was developing clinically. I eventually used the membrane in over 300 operations.

Hughes: Were people coming specifically to work on this particular project?

Gerbode: No. We developed our own research team locally out of people who were with us.

Heart-Lung Machines Elsewhere

Hughes: Is it appropriate to talk about what else was going on in the country and in the world in regard to the heart-lung machine during this time?

Gerbode: Yes. There were different kinds of heart-lung machines being developed in several places in the country. Several big corporations were manufacturing heart-lung machines commercially, based on the research done mainly in labs like ours or universities. The membrane oxygenator work was being carried on under [Willem] Kolff at the University of Utah and a couple of other places. As an outgrowth of that, there are several membranes on the market. Ours is still not on the market, but we hope to get it on the market soon.*

Hughes: How far along were Gibbon and that group when you were working on the membrane?

Gerbode: Gibbon never got into membrane oxygenators. In fact, he didn't do anything beyond developing a screen oxygenator. As people began to test what was happening to blood, they found that the screen

*The commercial fate of Dr. Gerbode's membrane oxygenator is discussed on pp. 349-352.

Gerbode: oxygenator was not very good, was not very easy on blood, either. It was also very difficult to clean, for the same reason that I mentioned with our disk oxygenator. You had to clean it so meticulously that it was a big chore. In Gibbon's own unit, very soon after he had retired from the chairmanship of the department, they switched to a bubble type of oxygenator, and the Mayo Clinic did the same.

Hughes: Is one of the advantages of the membrane oxygenator that you're developing that the membrane is disposable?

Platelets

Gerbode: That's one thing. But the other is that it's less traumatic to blood. If you study platelets, for example--we did some of the original work on platelets here--you find that whatever machine you use, in the first few minutes of any perfusion, the platelet count goes way down. The platelets simply disappear from the blood.

So we tried to find out what happened to the platelets. David Hill found out in our laboratory, that they went into the liver temporarily. They went into hiding, so to speak. Then slowly, after the perfusion was over, they'd come back into the circulation. With a bubble oxygenator, they'd come back much more slowly and not completely. With a membrane oxygenator, they'd come back slowly, but they came back almost completely and faster which meant that they weren't made as sick while they were hiding in the liver, or on their way to or from the liver. This was rather a basic discovery.

Hughes: That meant no clotting then.

Gerbode: Well, the fact that the platelets disappeared meant that the patients bled more postoperatively. We frequently had to give them platelet transfusions.

Hughes: Were the platelet transfusions a direct outgrowth of the discovery that platelets were going into seclusion?

Gerbode: No. We discovered that we had to give them platelet transfusions because the platelet counts were so low. We didn't know at that time where the platelets had gone or what had happened, but we knew that they weren't in the circulation. So we had to give them platelets to build up the quantity so that the blood would clot. The [Irwin Memorial] Blood Bank had to develop methods of getting platelets out of bank blood, so we could give platelet transfusions. They developed that quite successfully.

Hughes: That was developed here in this blood bank?

Gerbode: It was developed in various laboratories throughout the world. Everybody at that point was having more or less the same experience.

Hughes: Is it mainly the platelets that are disturbed?

Gerbode: No, other things happen, too, to red cells. Some of the red cells hemolyze and other clotting factors are affected.

The Institutes of Medical Sciences (Continued)

[Interview 7: August 26, 1983]##

Gerbode: We had something over two hundred thousand dollars of approved research grants for the people who were not going to move to Palo Alto. I asked the National Institutes of Health, the Cancer Society, and a few other grantors if they would be willing to transfer these funds from Stanford to the Institutes of Medical Sciences, and they all said they would. Stanford University, in addition, said they would not object to doing this.

Most of these grants were for research in circulation and heart, but there were some smaller grants in eye research. In any event, we started out with an institute called the Heart Research Institute, which I directed with Jack Osborn. Then later on Dr. [Arthur] Jampolsky started an eye institute. Subsequently an institute of neurological sciences was started as well by Knox Finley.

As time went on, other institutes developed. For example, some years later George Williams, who had been director of the laboratories at the NIH hospital in Bethesda, decided to retire and move to California. So he established, with some private funding an institute of aging and brought some people with him to set this up.

Various other people have come into the research programs. The general feeling has been that we didn't want to have too many separate institutes, but we have ended up with seven. Probably one or two are small enough so that they shouldn't really be institutes. Dr. William Kuzell got a million dollars [from] a grateful patient to set up an arthritis institute, which is going very well.

It was not difficult, really, to get the research started, although there has always been a problem with space. We had a beautiful animal laboratory set up in the new research building.

Gerbode: At times it has been difficult to find enough research to keep that animal laboratory funded properly, so they've had debates about whether it should be a core facility. But presently this has been worked out. For a long time we had a tremendous amount of work in the animal laboratory testing devices, such as heart-lung machines and membrane oxygenators, and so forth.

Politically, there really weren't very many problems, except relative to space. This had to do with people wanting to have more laboratories and more office space for their research workers and looking at others who perhaps weren't utilizing their space as well as the others thought they should be. But we established some committees to settle these matters, and finally formulae were worked out so that there was very little hard feeling about it.

Gradually, from a single woman running the office and taking care of the bookkeeping, we have added more and more people until now we have a rather huge staff of administrative people. We worry about it being greater than it should be, but bureaucracy always grows. You can't stop it very easily. So now at this moment we have a lay president, an executive vice president, personnel managers, chief accountants, bookkeepers, and all sorts of other people keeping track of the approximately three million dollars of expendable funds every year.

Hughes: Is there a medical president as well?

Gerbode: No, there isn't. We have had medical presidents in the past. In fact, I was president for about three years. We had various other doctors who were president, but they resigned for better positions.

One of the best ones we had was Dr. James Hundley, who came to us from Washington. We liked him very much and he was very effective. He got to be so good and well known that the American Heart Association offered him quite a bit more money than we could pay him and some other prerogatives, so he left and went to New York to run the American Heart Association. But within six months he was disillusioned not only about the job but also about how he had to live in New York, and a short time later resigned, moved back to California, where his daughter was living in Marin County. A month or so later he was killed by a truck in a highway accident, which was very sad. We would have been very happy to take him back again, but unfortunately the accident prevented this.

Administration

Gerbode: We've had a lot of debates and some infighting about how the institute, which is now the Medical Research Institute of San Francisco, should be administered. It's been my belief that we should have a research-oriented Ph.D. or M.D. who is knowledgeable about research funding and research. The rest of the administration can be run by people who know about bookkeeping and things like that.

However, some of the people at MRI have been afraid of having a strong research man as head of MRI because they, I guess, believe that he might interfere with their work or make suggestions about some of the private funds which have come into some of the institutes. They were afraid to accept the premise that we should have a really high-caliber research person running it. So now we have a president* who is fund raising for the ballet association and other things in town and who is a social figure, but he doesn't know anything about research. He is acceptable to most people, but some people still feel, as I have all along, that we should have a thoroughbred research person in the job.

Hughes: So the way it stands now, all research policy is established by the director of each institute?

Gerbode: Yes. But then we have a board of trustees, and they establish broad policies. We have a science council which also participates a great deal in establishing policies relative to research, and various other committees which come into the picture relative to space and finance.

Hughes: The board of trustees would not make decisions concerning scientific and medical matters?

Gerbode: No, it wouldn't.

[telephone interruption]

Gerbode: The board establishes broad policies and also can form and terminate institutes. They've never terminated one yet, but they think about it once in a while when institutes run out of funding. They also have trouble deciding how to set up a new institute. It's easier for them to believe that money should be the determinant. I don't believe in this. I think it's a mistake to advertise that

*The president of MRI, James Ludwig, resigned in March 1984.

Gerbode: we will establish an institute because a certain group has x numbers of dollars. I'd rather have them have fewer dollars but bigger ideas.

Hughes: Aren't the strikes against you in a sense if the board is composed of people without predominantly scientific or medical interests?

Gerbode: It is difficult because they don't really understand research. It's very hard to find lay people who really understand voluntary research efforts. This is generally true throughout the world except in some places where people have made fortunes out of their research and development. Then they understand the beginnings of an idea and how it develops into something worthwhile and profitable.

We are one of the ten largest private research organizations in the country, and we are known. We belong to all the voluntary nonprofit research organizations in the country. So it is an effective and strong institution. It's the biggest [private research institute] in San Francisco. There isn't anything else here that could match it except for the University of California. It has by far a much bigger budget with many more researchers than when the [Stanford] medical school was here.

Hughes: What is the division of labor between the board of trustees and the science council?

Gerbode: The science council is composed of scientists. Each institute can appoint two members of the science council. They discuss things like compensation and the value of the science. They determine who gets money which has been awarded on a broad basis to the institute as a whole. For example, NIH gives us a grant every year based on how much money we have raised ourselves. This amounts to anywhere from eighty to over a hundred thousand dollars a year. It's called a basic research support grant. The science council reviews applications from the scientists in MRI applying for money in this BRSG fund. Everybody accepts its decision pretty well.

Hughes: NIH doesn't place any stipulations about how the money will be spent?

Gerbode: No. The BRSG fund is to be used to stimulate new research, to encourage young people to get into research, to support research which is ongoing but is periodically short of funding in various categories. It's really quite a great thing to have this fund. It's certainly to the credit of NIH that they recognized the necessity for it.

Research

Hughes: Is most of the research fairly directly connected with medical practice?

Gerbode: Originally practically all the research was connected with medical problems we saw in patients. This was certainly true of the heart research program, because we had to develop heart-lung machines and learn how to take care of very seriously ill heart patients who had operations and who needed operations. We also had to perfect the instrumentation to manage them safely. But more recently we've had research efforts which are very basic, particularly in the field of immunology. We have a lot of immunology going now. One big group has come forward after about seven or eight years with a method of making interferon more inexpensively than anybody else. So they're about ready to burst out of our lab into a big production somewhere in Hayward and really begin to sell their product.

Commercialization

Hughes: Is there any problem with going commercial?

Gerbode: No, there's no problem. Actually, the same thing was true of our developing a membrane oxygenator, which we spent so many years working on and finally have gotten it to the point where a commercial firm has taken it. They've spent about a million dollars developing it to the point where it can be sold. In the end, whenever it is sold, we will get royalties. The royalties don't go to persons; they go back into a heart research fund which will be used for other research.

Hughes: Do individuals own the patent?

Gerbode: With regard to our membrane oxygenator, individuals relinquished their patents, or sold their patents to the Harvey Company. We no longer hold any patents, but we have an agreement with the Harvey Company that when [the machines] go into production we will get a royalty. The same thing is true of the group who has developed the method of producing interferon. Assuming that they don't forget about their commitment, we should get a fair amount of money back into our research efforts.

- Gerbode: We have some people who have gotten patents on various devices, and we have policies established for that. The policies usually either give all the royalty money to research programs or split it between MRI and the individual.
- Hughes: So that would be a real incentive for an investigator to come here.
- Gerbode: Oh yes.
- Hughes: I'm thinking of the problems that have arisen at U.C. in connection with recombinant DNA and the fact that the university holds the patents.
- Gerbode: Yes. Well, we let the individual hold patents mostly. We have an agreement with the individual, if he's developed the new idea or the instrument in MRI, that we will share in any rewards that come out of it. I must say, we haven't made much money from this so far. But a great deal of what you do in research is built on hope.

Administrative Policy

- Gerbode: Another thing I should say about the total research effort is that we have brought people here to give them an opportunity to do research without interfering with them. We don't even tell them what to do. We'll help them do their research and answer questions and make constructive suggestions if they're requested. But we don't look down anybody's neck at all. We want to create an atmosphere, as I mentioned before, of freedom of thought and freedom of activity.

This is quite different from the usual university research structure, where everything is under a departmental head, and depending upon what he likes or dislikes, the research can either go forward or stop. This has to do with space and a lot of other political factors in a university structure. We wanted to avoid all that.

- Hughes: So the director of an institute has a much looser hold on his membership than the head of an academic department?
- Gerbode: If you want to take me as an example of a director, I've brought people in who have independent thoughts about what they wanted to do in their research, and give them space, helped them a little bit

Gerbode: financially one way or the other with equipment or personnel, and let them go, let them run with it. The only thing we insist on is that they do it honestly and present their results in scientific journals.

Hughes: So you do pay attention to publication?

Gerbode: We encourage them to publish as much as possible, but these fellows usually realize that their survival depends on publication. So they usually crank out as much as they can.

The Peer Review System

Gerbode: Research is really governed by peer review committees in various ways. Every NIH grant is reviewed by a peer review group in Washington or wherever they want to have the meetings. They look it over very carefully, and [the applications] are all very competitive. If a peer review group in NIH gives a grant application a rating of two or two and a half or three, there is very little chance of it being funded.

Hughes: What is the scale?

Gerbode: One to five. Five, of course, is a complete reject. They don't even hardly look at it. The competition is between the ones and twos. Currently I think that practically anything that gets bigger than a two rating has very tough going.

Hughes: Maybe this is the time to say a bit about what criteria are used for these peer review committees.

Gerbode: A research grant is submitted to a particular section of NIH. That section has a study section committee which reviews all these applications. They look at each application [to determine] whether or not the prospect of accomplishing the goal set out by the research worker is reasonably possible or not, and also whether or not the type of research fits in to what we're trying to do generally in the country. In other words, we know right now that cancer and arteriosclerosis are the two big killers, so generally speaking something related even remotely to these would be looked upon more favorably than others.

Gerbode: However, there are a great many other projects that are valid and worthy. So they look at the people and the research environment. They look at the track record of those involved, the promise of the individuals, and the age of the individuals. They're more inclined to favor a grant to a younger person than to an older person.

Hughes: Is the feeling there to give the younger person a chance?

Gerbode: Part of it, because in the country as a whole we want to get young people interested in research, so we favor giving them some money to get them started. Also, there is generally a feeling that after forty or forty-five, the prospect of any original research coming out of a worker is slimmer and slimmer as time goes on. Unfortunately for this generalization, not infrequently it doesn't apply at all. Some of the best projects come from older men. But in general, the committees favor younger people.

Hughes: Does NIH give you criteria by which to judge the applications?

Gerbode: No, they don't. The peer group establishes its own criteria. It evaluates the program suggested by the application and either accepts it with a priority or rejects it.

Hughes: Is it pretty much on the scientific merits?

Gerbode: It's not political. Although over the years, it was obvious to me that if one of the Ivy League medical schools applied for something, it was much more apt to get it than some little university in the Midwest. But time, I think, has changed that a bit. I think people began to realize that you could do good research in a lot of different places in the United States other than New England. Some of the very best things are not done in New England or the East Coast.

Hughes: Do you think that the system works pretty well?

Gerbode: I think the system is excellent. The American Heart Association has similar committees which examine these applications. In fact, the local heart association does, too. They have a research committee which looks at all the applications and votes on them.

The Institutes of Medical Sciences (Continued)

Hughes: Back to the institutes, if you don't mind. The subject of choosing investigators. The way I understood your explanation was that a man would come here with a specific project in mind.

Gerbode: Yes. Very often they've already been working in a particular field on a particular problem and have already established a track record. For example, they may be studying the immunological aspects of cancer, and they would have some publications and worked in laboratories somewhere. For one reason or another, the person wants to leave that institution, either because he doesn't like the climate politically in the institution or the climate otherwise, or because his wife or husband wants to move to another part of the country. We have gotten people from the University of California locally because of departmental problems which they didn't like there. The same thing is true of the Veterans' Hospital. We've gotten some people from there as well because they'd rather work in a free-standing institution where politics is at a minimum and they can really do their thing without interference.

If you pursue this policy, you're apt to get stronger people. This sometimes can cause difficulties, because when they come into our complex, they want to swing the bat and influence things a bit, too. Well, that's fine. I think that's being a good citizen. So I don't mind that, providing they're fair about it.

Teaching and Training Programs

Hughes: Since the institutes are not set up along strict academic lines, what do you do about such things as teaching and exchanging information among the institutes?

Gerbode: Those are good questions. We've always had some kind of training going on. In fact, for a while we had a Ph.D. program with the University of the Pacific. In cardiovascular work we had a master's program with the University of the Pacific. Both of these have been dropped now because of no takers, mainly because doing graduate work in a university which is eighty miles away in Stockton is difficult. If the university were on this campus, we'd have more of these programs going. There is currently again talk of reviving the Ph.D. program in one or two of the disciplines.

Hughes: Would that mean taking on new staff?

Gerbode: No, we'd use our own staff. Right now we're talking more about having postdoctoral fellowships, which is a form of teaching. We would take on people as fellows who have gotten their Ph.D.'s and want to get started in a good research program and get them going until they can stand on their own feet. We're going to do more of that in the future.

We have also always had a summer student program. During one summer program Dr. Osborn and I had twelve students working here in cardiovascular surgery. It was like running a boy scout camp. [laughter] I must confess, it was just too much.

Hughes: What level were these students?

Gerbode: They were mostly university students, premed or in biological sciences or engineering. It is interesting to note that many of them have later gone to medical school and have done very well.

More recently we've lowered the number of summer students to three or sometimes four. These are sponsored by the local Heart Association or by a local woman's group, ARCS, who sponsor summer students' stipends. I must say, they are very generous with their stipends, too.

In the hospital we take a certain number of externs in various departments for part of a year, because most medical schools in the world now have some free time for the students to go away somewhere. The West has always looked good to people everywhere, so we always have a lot of people wanting to come to California. We can always take a certain number. Unfortunately, they can't do anything more than observe and take histories. They can't treat or write orders because of being foreign students.

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Hughes: What if they're American students?

Gerbode: American students can do that, and we have externs who can write orders and help in the operating room.

Hughes: What body would choose those students?

Gerbode: Those students are chosen by the department of education of the hospital. They have a director; he or she runs all the interns and residents and would run the externs or fellows, too.

Hughes: How closely are the institutes and the hospital affiliated?

Reasons for Establishing a Medical Research Institution

Gerbode: Well, we should talk a little bit about why there is a research organization here at all, and then what is the relation of the research to the hospital. Being the person who founded all this, when Stanford left, my idea was that someday there might be another medical school here. And if you were seriously thinking about having another medical school, then one of the things you would have to have is a group of people interested in research. Since there were a number of people who wanted to do research and were not going to move to Palo Alto, I felt that they should be put together in some kind of an organization. I think I've mentioned this before to a certain extent.

I also had a very strong feeling that any medical institution dealing with patients would be a better one if there was research going on at the same time. I think the best hospitals and clinics in the country are those which have good research programs. It not only improves the quality of medicine in the institution, but it brings people around who are interested in basic problems relative to health. When they're talking about it and giving seminars, it sharpens the ordinary clinician.

This has been true here. I believe the fact that we have all these research people around, some of them working with doctors in the hospital, and others working on problems which the doctors can see, is very beneficial. The problem, of course, is that many of the clinical departments in the hospitals are run by the people who don't care or know much about research. They're good doctors, but they're not interested in discovery or scientific matters.

Hughes: Does that make it difficult when an investigator is ready for patient trials?

Gerbode: It's almost impossible, if a research worker wants to do a clinical program in research, to get it accomplished unless the departmental chief wants it. And then you get back to the same thing that happens in the universities. But so far we haven't really had much problem with that. The ones who don't do any research and who are in charge of departments at least don't try to stop research if it doesn't interfere with them too much and as long as they don't have to pay for anything.

Hughes: But there's no system set up for any sort of automatic acceptance?

- Gerbode: Nothing's automatic. Currently we're trying to get hospital research increased, and we currently have a joint research committee of trustees and research people in the hospital and MRI. They meet quarterly. Currently the general policy decision is that all research for both should be administered through MRI. This is a bit difficult sometimes because people leave money to the hospital for research, and the hospital doesn't like to turn that money over to somebody else. They want to try to run it one way or the other. That's perfectly natural.
- Hughes: I would think also that the hospital would resist having MRI have control over the decision.
- Gerbode: You see, the problem is that there aren't many people in the hospital who can make [scientific] decisions [about research]. So we [in MRI] have a big advantage there.
- Hughes: I would think that the same would apply to the board of trustees.
- Gerbode: It does apply to the board of trustees, absolutely. For example, one of the most important people on the board of trustees of the hospital once said at a board meeting, "I think all of the research we do should be directed toward improving patient care in the hospital or problems in our patients." In other words, you find out that a certain group of patients gets warts when they come to the hospital; therefore the research program should be designed to eliminate this strange phenomenon. [laughter] That's kind of an exaggeration. He's trying to liken the research in a hospital to that in IBM or Hewlett-Packard or some big corporation, or even the stock market. These big people engaged in the stock market all have research organizations. It's all designed to help them make a decision relative to investing their money, or somebody's money. But so much of research cannot be pointed to a specific problem of the day.
- Hughes: I think that's very difficult for a layman to grasp.
- Gerbode: Even doctors have difficulty understanding it. I would say in general, however, that our research, as I mentioned earlier, was designed to try to overcome some of the difficulties in applying treatments which we were ready to apply but couldn't apply until we understood how to apply them better. This was certainly true of open heart surgery. That's why we spent so much money on developing techniques and instrumentation and studying the physiology of what happens when you use [heart-lung] machines.

Hughes: Would you say that your research today is still pretty much with the idea of future application?

Gerbode: I think, generally speaking, our research is basically clinically oriented. Even the work in immunology and interferon is certainly intimately related to cancer and a number of other basic things we're working on so seriously. The people running the clinical programs in the hospital don't really do any basic research. I think the people in MRI are better informed on what the problems in basic research are and how to try to solve them.

Hughes: I asked a question about communication and you mentioned the committee which brings together the hospital and MRI. Is there anything that does that for the institutes as a whole?

Gerbode: We have weekly scientific conferences to which all the hospital and MRI people are invited. They are usually basic science lectures of one kind or another describing the work which an individual is engaged in, what he's accomplished and what he hopes to do. Some of them are quite lively, because a lot of good questions are asked.

Hughes: They're well attended?

Gerbode: No, the hospital people practically never come. The younger research people come, the ones whose careers really are based on what they might be able to do [in research]. Usually when we bring a new person in, one of the first things we do is give him a chance to give a talk or two to all the other research workers about what he wants to do or what he can do. Those are pretty well attended because people are kind of curious to see what the new person looks like.

Ph.D.s and M.D.s

Hughes: What about the ratio of Ph.D.s to M.D.s in the institute?

Gerbode: I'd say that 90 percent of the research is done by Ph.D.s or masters. Originally it was the other way around; it was mostly M.D.s. But M.D.s find they can make a lot more money and have an easier life in practice rather than trying to compete for funds to do research. Funding organizations don't pay research workers very much.

Hughes: That of course is feeding into some of the problems you see between the hospital and the institute.

Gerbode: Oh yes. There's a constant deep feeling of the Ph.D.s that they are underpaid and they are the martyrs of the system, because they don't make nearly as much money, and they feel as though they're making all the big contributions toward the improvement of medicine. But I've told them whenever this comes up, "If you wanted to be a doctor, you should have gotten an M.D. degree." It's easier to get an M.D. degree frequently than it is to get a Ph.D.

One fellow who worked with us had a Ph.D., and he kept saying this all the time. I said, "Go get an M.D. degree." So he did, and he continued doing research at the same time he was getting his M.D. degree. But I must say that his research suffered and was really questionable. But as a consequence of this change in direction, he is now a faculty member in a clinical department in New England. I presume he's still doing some research back there in the clinical department. At least he's making more money.

Hughes: Going back to when the institutes were first being formed, what would you say then was the reason for adding a new institute? Was it a matter of money?

Founding New Institutes

Gerbode: Yes. It was a matter of money--well, not so much money, but a group of people who could be funded. In other words, you had to be sure that a person to whom you gave a laboratory could run it financially.

We didn't have any set figures, though. We simply looked at the group and if they had a pretty good track record and had the promise of going somewhere, we'd give them space and help them.

Hughes: Was there any tie-in with current scientific and medical problems?

Gerbode: In other words, have we decided that we should go into certain fields because we feel they're important?

Hughes: Yes.

Gerbode: Yes, to a certain extent. When George Williams wanted to set up an institute of aging, we thought that was very good, because aging is something we're faced with everyday! In fact, Mrs. Florence Mahoney, who used to be on our board--she's a wonderful and very effective woman in Washington--felt so strongly about the aging question that she worked hard on certain senators and finally got them to approve an aging institute as one of the institutes in NIH. I notice that they've got very good appropriations now, and she's very proud of the fact that she did it.

Our aging work has dropped off a bit because of poor funding. Dr. Williams has shifted his interest into cancer research.

Hughes: In connection with the aging problem?

Gerbode: Well, not really.

Sharing Equipment and Facilities

Hughes: You touched upon the question of equipment. Is shared equipment an ideal but not an actuality at the moment?

Gerbode: As a general rule, every research worker likes to have his own "microscope." He doesn't like to share it with anybody else. So mostly the institutes and the research workers have their own research instrumentation. However, when it gets to big things, no one institute can afford to buy them and maintain them, so we do share certain things.

We have two things which currently are examples of this. We have a research lab which is called a core facility lab, which contains certain expensive equipment, such as spectrophotometers, that can be shared by a number of workers. We also have a machine shop which can make beautiful equipment out of metal, make almost any instrument. Anybody can go over there who can afford to pay for whatever they need, and can get it done.

Hughes: What about the use of the core facility lab? I would think that sometimes there would be tremendous competition between institutes.

Gerbode: No, they get together and say, "Would you mind if I use it on Tuesday?" or something like that.

Hughes: So it's an informal--

Gerbode: Informal arrangement, sure. They are very fair about it. So there's never been much problem about that.

Hughes: The dog lab is used by--?

Gerbode: The dog lab is now used by a number of people, but not nearly as much as it was a few years ago. However, they do dog and cow work two or three times a week. The instruments and the respirators are shared. There's a basic charge for using the animal laboratory; for each experiment there is a basic charge. That goes into a fund in central administration which then pays for replacement of instruments and materials, drugs and things like that.

Hughes: Why has use fallen off?

Gerbode: I guess the main reason is that some of the people who were using it a lot are so busy in practice now that they don't use it as much because they're busy taking care of sick people.

Hughes: Do you wish to say anything more about the institutes?

Accomplishments and Reputation

Gerbode: I think my premise that a hospital complex with a research institute would be a much better place to be working and a much better place for sick people has been accomplished. I think the fact that we have a very strong medical research institute here has increased the value and prestige of the [Pacific Medical Center] enormously and has increased the quality of care of patients a great deal. I think quite a few people envy us.

Hughes: What would you say about the reputation of the institutes on a national scale?

Gerbode: Their reputation is very good. NIH and their committees never hesitate to consider an application from MRI. It's considered on an equal basis with universities.

Hughes: Has that always been the case?

Gerbode: It was pretty much, because when we started we had reputations back there, and I was on several committees myself.

Hughes: That helped. Should we talk about the relationship of the institute with other research organizations? I'm thinking of Stanford and U.C.

Gerbode: We've always had some joint programs, not great ones. For example, in the kidney transplant work, which has now reached a level which is among the best in the country, there are research programs which are shared by Stanford and ourselves. What will happen to those programs in the future I don't know, because Stanford now is going to have a kidney transplant unit of its own.

Hughes: Will some of the people go down there?

Gerbode: Well, they'll have their own sources of patients, because they have a lot of people with sick kidneys come in there. I think they'll get enough work to keep a kidney transplant team going. By the same token, we're probably going to do heart transplants here.

Knowledge is generally shared in these ventures. People who are working in a field usually share their experiences pretty freely.

Hughes: A particularly strong field, say the kidney transplant program, would that influence the research of another institute? I'm thinking, for example, of the tie-in with immunology.

Gerbode: Oh, very much so. There's a lot of cross-fertilization.

The Decision to do Heart Transplantations at Pacific Medical Center

Hughes: What about the decision to have heart transplantation here?

Gerbode: First of all, you have to have a team that feels as though it can do it. We have a very strong cardiovascular department here, with very good backup in postoperative care, and we have the kidney transplant program, which then brings in all the various aspects of controlling the rejection phenomenon. They're pretty knowledgeable about that now, too, so that's a help. And then the fact that organs are offered to the kidney program means that there are hearts available as well, as there are eyes. So we have a corneal transplant group here which has been in existence for many years. If you're taking organs for one purpose you can usually get the other organ as well, so these programs help each other.

Gerbode: I'm sure that part of the reason why Stanford is going into kidney transplants is because they already have all the other elements of what goes into transplantation. All they need is to have somebody to do the work.

Hughes: Is the motivation for setting up one of these programs the idea that you're going to help patients with severe problems, or is it a money-maker? Or both?

Gerbode: I think a great deal of it really is the objective of having a complete center. People want to be responsible for starting something and running it. It does have some financial aspects, of course, because people have to make a living. If they make a little extra money and it's doing what they want to do, then more power to them. The only feeling I have about that is that if a person does get into a field where the money comes in pretty liberally, I feel the person should put something back into the organization.

Hughes: That doesn't usually happen, does it?

Gerbode: No, unfortunately it doesn't happen. But I can say that, as far as I was concerned, over the years I've put as much back into HRI as I took home. Otherwise it wouldn't have gone.

Hughes: You said earlier that one reason that you didn't become involved with heart transplantation was the problem of rejection. Do you really think that that has been handled?

Gerbode: Oh, it's been handled pretty well now, because they have drugs that can control it. They have ways of studying the heart to see whether a rejection is imminent or not. Then they temporarily fire up the drugs.

I think [transplantation] is accepted, and I think it's going to increase in numbers and quality. I think pancreas transplantation is going to be accepted very widely pretty soon, and liver transplantations more than they are now.*

Hughes: Neither of those is done here?

Gerbode: No.

*There is further discussion of transplantation on pp. 468-469 in the session recorded on 5/30/84.

Ethical and Psychological Considerations in Medicine

Hughes: There are a lot of ethical problems connected with any form of transplantation. Have committees been set up to handle these questions?

Gerbode: Oh yes. There are committees all over the place. There are committees in the United States Senate. There are committees in the Heart Association, committees in the medical societies, and local hospital committees. We have a joint committee of MRI and the hospital which has to approve any research program that involves humans. It has to go through that committee on human experimentation. If we invent a device for the treatment of something which, let us say, requires a continuous intravenous drip to administer a drug, it has to go through this committee, and they have to consider whether it might be harmful. And all the people on whom this particular venture will be tried have to sign a paper saying they understand what's going on, that it is experimental, and relinquish any lawsuits or conditions about it. It doesn't really prevent a full lawsuit, but it makes people a little more aware of the fact that they're engaging in something which is a new venture.

Hughes: Are the criteria used by this committee set up by the committee itself, or are they government criteria?

Gerbode: Some of them [have been established at the national level]. For example, the question of when death occurs, what is death: that has been debated at all levels in the country. So finally criteria to establish death have been established.

Hughes: Which is brain death.

Gerbode: Yes.

Hughes: How does that sit with you as a heart man?

Gerbode: Oh, I think that's fine, because if a person's brain is dead and you're keeping the patient alive through machines at great expense and with no ultimate outcome, I think it's a waste of effort and money. If the family would be willing to donate the organs of that person, that's great. People are generally accepting brain death in the country and in the world [as a criterion of death].

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Hughes: In cases where the patient is literally dying, it makes "consent" rather questionable. The patient is hardly going to be looking at the situation from an objective standpoint.

Gerbode: Yes. Now we're getting into things which are not essentially related to research.

Hughes: That's true. But they are things which must be dealt with.

Gerbode: Yes. Usually we've dealt with those things by talking to the family, the husband or the wife. If you can't get through to the patient, spell out the facts to the husband, wife or family in some form, and record in the chart the fact that you have done all this, so that it is well known that you have covered the risks and the essential aspects of what you intend to do. It isn't a complete protection against being sued, but it certainly helps a great deal.

Hughes: What about the moment when you decide that research in the dog lab or wherever has progressed far enough and it is now time to do the procedure on a human? What goes into making that decision?

Gerbode: If you've done it repeatedly in the lab, you know how to do it technically, and you've seen the result physiologically or otherwise, then it is time to apply it. You simply go to the patient and tell him that you've been working on this now for a year or so and have done it repeatedly in animals, and this is the best treatment for you, or your son or daughter or husband or wife. Do you want us to try it or not?

Hughes: You would make it clear that it's a new procedure?

Gerbode: Oh yes, make it clear and write it all down in the chart, and the history. Sometimes people have gone to the point of having [patients] sign a document [which] reads something like, My doctor has told me all the risks connected with this venture and explained all the various possibilities, and I hereby give him consent to apply it.

Hughes: Is that something that the individual physician would decide to do or not do?

Gerbode: Yes, that's right.

Hughes: Are most patients willing to go ahead with a new procedure?

Gerbode: Yes, they are. If they're in a hospital with a good reputation and dealing with good people, they're willing. I never really had difficulty, even in the early days of open heart surgery, getting people to agree to have the operations. You'd present the statistics, the facts, the problems. On the one hand there's hope; on the other hand there isn't much hope.

Hughes: What about your frame of mind when you are trying a new procedure for the first time on a human? Do you think you're tenser?

Gerbode: I think I've always been pretty aware of what the risks were and what the promise would be. For example, if you can close a hole in the heart successfully, and a given patient has done better with that hole closed, then you're really quite excited about it, because there are lots of holes around to be closed.

Hughes: But when you're starting on the first closure, how do you feel?

Gerbode: I think if you've tried it out on animals and thought it out carefully and you know what other people have tried--it's like going through a forest, you can see the marks on the trees and the path, and you watch out for wild animals. [laughs] But you'll get through it all right.

Hughes: So the psychological step is not that great from the dog lab to the human?

Gerbode: It's much harder to get a survival in a dog than it is in a human for a given situation.

Hughes: Why is that?

Gerbode: A lot of reasons. One thing is, you have some ways of treating human beings which you don't have in animals. But also, many animals are not as resilient.

Hughes: Is that just an inbred characteristic?

Gerbode: I don't really know. But I think it's generally true.

Computerized Patient Monitoring (Continued)##

[Interview 8: August 29, 1983]

Hughes: We talked previously about computerized monitoring of patients, but I don't think we really brought out how innovative this whole procedure was. I'd like you to comment on that, and also say something about what impact the technique had on medicine.

Gerbode: When IBM came to us, they obviously felt that using a computer would be of benefit to the treatment of patients. We of course had felt this all along and had therefore started using a computer to monitor certain physiological events in the postoperative care of patients.

The obvious things one would think about [monitoring] would be the blood pressure, the venous pressure, and the heart rate. But then there were so many metabolic things which were important in the treatment of a seriously ill patient, it was our decision to monitor some of these as well. So we developed methods of following the CO₂, the work of respiration, and a number of other very useful parameters, and put them into a program which would come out as a display on a screen for a nurse to watch. We could also have laboratory tests put into the computer so that [patients] could come back into the recovery room immediately, as soon as they were finished [with the operation]. The nurse then would not have to wait for a piece of paper to come from a lab or a telephone call; it would be there as soon as the test was completed. So we had terminals set up in the laboratories to put these bits of information into the patient's computerized record. Dr. John Osborn with the assistance of IBM's James Beaumont was in charge of this project.

We ended up by being able to monitor on-line twelve very important parameters. This is very sophisticated medicine, because when a nurse or a doctor can look at twelve physiological effects in a seriously ill patient, he or she has a lot of very useful information. What actually happened after a while is that nurses got to be expert at interpreting these data and could make decisions themselves about giving blood or changing the respirator: increasing the amount of respiratory pressure, the volume of respiration, the amount of oxygen, a lot of things like this.

I likened the use of a nurse in this capacity [to] flying an airplane with the use of instruments rather than with the seat of her pants. If you learn how to fly an airplane with instruments, you can fly it through hail and storms and everything, but if you are doing it with the seat of your pants, you sometimes get into terrible trouble. This obviously requires a certain amount of intelligence, and we were lucky to have nurses who were very intelligent. Furthermore, once they learned the method of following patients with the computer, they liked it very much. Some of them left the hospital for various reasons to go to other hospitals, but they always tried to get back again, because they felt more comfortable having precise information.

Hughes: Did they have to go through a training program?

Gerbode: We had a training program set up for them. We had one girl in charge of training all of the new girls and checking them out. Kay Martz was her name. She now has left the unit and has gone to live with her husband in Modesto. But she has trained other people in the art of training nurses, so the system goes on.

The concept of having this on-line observation of patients was quickly copied by other units. Actually Dr. Osborn later put together a little company so that he could make the front end, the sensing devices, so the signals could go into the computer. These devices now are being sold to various other hospitals throughout the world. The Johnson and Johnson Company bought the little company, and they now are in the process of making and selling them.

[Computerized monitoring] is a very, very sensible way of following patients. When you get reliable information, you don't guess so much.

VI MEDICAL/SURGICAL ACTIVITIES AND HONORS

The Frank Gerbode Medical Research Foundation

Hughes: Now the Gerbode Medical Research Foundation.

Gerbode: A few years ago several members of the board of [what was] then IMS [the Institutes of Medical Sciences], which is now MRI [the Medical Research Institute], thought it would be a good idea to have an endowed chair in my name. So they decided to have a small fund raising activity to establish this chair. Actually, as time went on, it turned out to be more reasonable to have a foundation which would support research than to have a chair, although they could function similarly as far as using money is concerned.

Anyway, this was set up as a nonprofit foundation. Funds were raised. I must say that they didn't pursue a very vigorous fund raising campaign, which was fine with me because it's kind of embarrassing to sit here and have people raising money for you in this way. Anyway, they did raise a certain amount of money, and this has been used to support new research, support young people getting started in research, and to pay for equipment and other expenses which were not foreseen in the beginning of any program. One is always short of money in research.

Contributions come in slowly. The trustees decided that they would not use the capital but only the income from the fund. This, then, meant that there wasn't very much money to spend. But still, it's better in the long run to keep a capital fund going, I think, than it is to spend it all. [The foundation] continues, and I imagine it will continue in the future.

Hughes: Can more than one individual be supported at a time?

Gerbode: What we do is support parts of programs; when somebody has a new idea and isn't funded for it, providing that what he requests doesn't cost too much money, we can help get him started or get him over a hurdle.

Hughes: Is it unusual to have an endowed foundation connected with a private research foundation?

Gerbode: The Smith-Kettlewell Institute of Visual Sciences has some monies which are used in a similar way, and they had several big grants given to them. They're a bit out of MRI, though. There are no other MRI endowed chairs or funds of this kind, except for the Smith-Kettlewell funds.

Hughes: But other private research institutions do have endowed chairs?

Gerbode: Yes, they do. Universities have them. I know there's one in honor of Vic Richards at Children's Hospital. I think that's mainly used to help research in that hospital.

Hughes: The establishment of the foundation was an idea that developed from your colleagues?

Gerbode: No, it really came from several of the institute directors. It wasn't from the doctors. Doctors really don't give very much money for other doctors. There's only one other group that's worse than that and those are the lawyers. Lawyers don't give any money to other lawyers.

Professional Societies and Associations*

Hughes: Now let's turn to your membership in professional associations, of which there certainly are many. What I did is to single out a few which seemed to me to be significant or in which you had held office. Certainly you're free to add more to the list.

The American Association for Thoracic Surgery

Hughes: Perhaps you'd like to start by talking about the American Association for Thoracic Surgery. You were vice president from 1971 to 1972 and president from 1972 to '73.

*For further discussion of professional societies, see the discussion recorded on 11/14/84, pp. 477-483.

Gerbode: The American Association for Thoracic Surgery is the largest and most prestigious thoracic and cardiovascular organization in this country. I felt very highly honored that they made me president. I had served on various committees along the way, the membership committees for one thing for several years. It has an annual meeting. That meeting is always attended by a vast number of thoracic surgeons in the country, most of whom are not members. There are many people who come from other countries to attend the meeting as well. For example, Europeans are always heavily represented at the meeting. It's a very friendly meeting to attend, too. The atmosphere is very good. The scientific papers I think are among the best in this particular category anywhere.

The Society of Thoracic Surgeons

Gerbode: There's another society called the Society of Thoracic Surgeons, which was started many years later because it was felt that younger thoracic surgeons needed to have their own organization, many of whom could not get into the American Association for Thoracic Surgery. It has very good meetings annually as well. Generally speaking, there are more younger people attending it. The attendance has always been excellent right from the very beginning.

Hughes: The associations have membership by appointment, by election?

Gerbode: Yes. Your name is usually submitted by two or three people who write letters of recommendation. Then you have to send in your curriculum vitae and list of publications. Then you go through a long process of being looked over by the membership committee. The society usually accepts the recommendation of the membership committee.

The American Surgical Association

Gerbode: The American Surgical Association is another very prestigious American [organization]. I was fortunate in being made a member of that quite a while ago, too. That probably is the most prestigious of all the surgical associations in this country. Most of the men in it have done quite a bit of teaching or research, have a lot of publications and are more or less in a leadership position, mostly in universities in the country, although not entirely.

Hughes: Is the American Association for Thoracic Surgery also inclined toward research people?

Gerbode: It's inclined toward people who've done teaching and some research, although there are some people who are members who've done most of their work along the experimental line. But in general the membership favors people who are in university settings.

The Society of University Surgeons

Gerbode: Another quite prestigious society is called the Society of University Surgeons. That was started just before or around the time of the war for young people who wanted to have university careers. The criteria for selection to membership really had to do with whether the young man was showing promise in research or publications and looked as though he was going to go on into an academic career of some kind. They made me a member when I was quite new in the academic field. I enjoyed those meetings a great deal. The presentations in that society are now so exotic that sometimes you can't even understand what they're talking about. [laughter] The young men are presenting the papers mostly, and they're in the forefront of some pretty sophisticated kinds of research and they like to talk about it, too. The meetings are very exciting from that point of view. Certainly I think the new things which come aboard in surgery are more apt to be seen at the meetings of the Society of University Surgeons.

Hughes: You had mentioned earlier that attendance at meetings was one way that you kept abreast of new developments.

Gerbode: Yes. Most of these societies require attendance. If you don't attend three meetings in a row without an adequate excuse, they may drop you, or at least you get a threatening letter. If I can't go to one of these meetings I write a letter telling them why I can't come.

Hughes: Was any one of these associations that you've mentioned more important than the others as far as conveying new information is concerned?

Gerbode: I think the two most important ones are certainly the American Association for Thoracic Surgery and the American Surgical.

The Society of Clinical Surgery

Gerbode: The Society of Clinical Surgery was started by Harvey Cushing and some of the Mayo brothers many years ago. They had meetings twice a year. They'd go to the various clinics, have an operative clinic, a discussion of operations, and a clinical session where the best of what that particular university department or clinic was doing [was presented]. A small group of people [were members], ten or fifteen originally. Membership in that society has gone up to perhaps fifty or sixty. They have a meeting once a year now. The meeting is usually an operative session in the morning and then a sit-down discussion in the afternoon.

Hughes: Do they deign to include West Coast institutions?

Gerbode: Oh yes. I've been a member for many years and they have had meetings here and in Los Angeles.

Hughes: In the early days it was pretty much an East Coast phenomenon, was it not?

Gerbode: Oh yes. In the early days it was entirely East Coast, and mostly New England and Baltimore. But then by the time I came along my chief, Dr. Holman, was a member, and I guess maybe Dr. [Howard] Naffziger at the University of California was a member too.

Presidency of the American Association for Thoracic Surgery

Hughes: Is there anything significant to talk about in connection with your presidency of the American Association for Thoracic Surgery?

Gerbode: I don't think so. If you're president, the big worry is that you have to give a very formal paper. That bothers people. As soon as they say you're going to be president, that means you have to start thinking about what you're going to say. [laughs]

Hughes: Which is on a research topic?

Gerbode: It can be anything you want. Luckily we were right in the midst of this computerized monitoring, [so] I then gave my paper on computerized monitoring for seriously ill patients, which was a very timely thing at that point.

Hughes: Is that the main responsibility of the president?

Gerbode: No. He presides at the council meetings and during the scientific sessions. He gives a reception, and he presides at the annual dinner, which is a big event. He has a chance to help make policy decisions through various committees. So it's a fairly important position.

Hughes: Policy in regard to the association itself?

Gerbode: Yes, whether or not they're emphasizing a certain kind of work more than another. In this society there had been a tendency to shift everything into heart surgery, so lung surgery suffered as a consequence. So they tried to have a session on thoracic non-cardiac surgery as well.

Hughes: Is that mainly due to the fact that the cardiac people outnumber the lung people?

Gerbode: Yes, and everybody is doing cardiac surgery, and they're all doing AC [aortocoronary] bypasses, and so they all want to talk about it.

Hughes: How old is this society?

Gerbode: It was founded in [1917].

Hughes: Before the days when a man was specializing in thoracic surgery, is that not true?

Gerbode: Well, there were a few. Locally the ones who were founders were Dr. Leo Eloesser, Dr. Harold Brunn, who did one of the early lung resections in the United States, Evarts Graham, and John Alexander. These are all men who were pioneers in thoracic surgery.

Hughes: You said locally--

Gerbode: Locally it was Leo Eloesser and Brunn. Those were two of the early founders in San Francisco.

The Bay Area Vascular Society

Hughes: I was wondering about the Bay Area Vascular Society.

Gerbode: They made me an honorary member a few years ago, which is nice to receive. They meet about once a month, usually in a hospital setting, and talk about any new ideas they have or new contributions. It's a very pleasant organization to belong to.

The International Surgical Society

Gerbode: To me the most important society outside of the American ones which I belong to is the International Surgical Society, or Societé Internationale de Chirurgie. I spent many years in that society. I first heard about it through Evarts Graham, who was the president of it at one point. He was professor of surgery at Washington University, St. Louis. He found that this society, which was dominated entirely by Belgians, was so confusing and difficult to understand that it was very frustrating to him. For example, keeping records of payments of dues [and memberships was] done in a curious way, and he couldn't really ever get good figures for them. Even though it was an international society, they had absolutely no democracy in electing their presidents. The same family of people became president by their own decision. "Well, I guess I'll be president for another four years. Then I don't think I want to be president after that." There wasn't any nominating committee or anything like that. It was just sort of handed around. It was just terribly irritating, particularly to Americans. We don't like that kind of thing very much.

[telephone interruption]

Hughes: You were talking about the International Surgical Society.

Gerbode: I was made president of the American chapter of the International Surgical Society and then got on the program committee of the International Society. So I went to Brussels twice a year to work on the program for the meeting which occurs every two years. I got to see the office and to know the people and began to work on the problem [of the society's organization].

The office [was] run by a woman who had been there, firmly established, for years. She really ran the whole thing in her own way. She kept track of who paid dues [by making] little dots in a book beside [members'] names. If they paid it would be a blue dot, and if they didn't pay it was a red dot, or something like that, which was a terribly curious way of doing it. The money I guess got deposited in a bank in Brussels. We never quite could see any balance sheet, although a Belgian accounting firm went over the books

Gerbode: and reported to us annually that things were all right. However, members in many countries never paid their dues, and they weren't thrown out. But the Americans paid their dues, and they had the biggest membership, and it looked to me as though the Americans were really holding the whole thing together in many respects. The Russians paid their dues regularly, though.

Hughes: Was the membership worldwide?

Gerbode: All over the world. Virtually, every country was represented and therefore it had a great inherent strength. I liked the idea. Through that society and going to the meetings, I got to know a great many people all over the world and made some very good friends. In any event, I finally got on the council of the society and then I began to work on how they elected the president, and finally put over the idea that the president should not always be a Belgian, should not always be more or less self-appointed, and above all not a member of the same family.

Hughes: Wasn't this rather sticky?

Gerbode: This was rather sticky. They didn't like me for suggesting this. But I had enough support from the Germans and some of the French and certainly the other Americans to change some of these things.

Hughes: You had gone around before the confrontation?

Gerbode: I'd talked to them at other meetings about it. Every year we'd have a meeting of the American chapter, and these things were discussed there, too. So finally we managed to get some good presidents elected outside of Belgium, and to take the secretaryship out of Brussels. The charter had said that the secretary's office should always be in Brussels. Well, finally after some deft manipulation I got the bylaws changed so that the secretary could be elsewhere. We finally prevailed upon a Swiss by the name of Martin Algower to be president. He volunteered to set up a modern office with computerized membership cards and all the rest of it and to have a private foundation he was connected with subsidize the society for three or four years to the tune of about seventy-five thousand dollars. Then with this, we were able to get the records out of Brussels, inadequate as they were, and modernize them and bring them up to date.

Hughes: How had the society existed previously if much of the membership didn't pay its fees?

Gerbode: It was mainly members in some countries who didn't pay.

Hughes: So there was money?

Gerbode: Oh, there was an adequate amount of money, because as time went on the Americans had so many members appointed in this country, that that in itself amounted to quite a bit of money. So now the secretaryship is in Basel, Switzerland under the direction of Martin Algower. It's modernized and is very active and very good. What will happen in the long run I don't know, but at least it's on firm footing for the time being.

Another thing which bothered some of us a great deal was the publication [of the papers from the meeting].

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Gerbode: [The papers] would come to you in a bound volume at great expense, and always so late that you more or less had forgotten about them. I finally got the [headquarters office] to tell me how much this was costing them; it amounted to about sixty thousand dollars. A good deal of the money that was being paid into the society went to subsidize this antediluvian type of publication. These things would arrive, you'd put them on the shelf and never read them, or they'd go to libraries, and nobody would ever read them in libraries either.

We finally got the society to consider having a good journal. Various organizations were canvassed, and the suggestion was made to them, "Would you like to publish a journal that would be the official journal of the society?" The papers would be selected for this journal not only from the meeting but from other contributions throughout the year. Finally Springer Verlag, the German [publishing] company, said that they would be willing to do it if we would subsidize them for a number of years. We got enough money together to subsidize the publication for two or three years. Springer Verlag itself lost money, and is still I think losing money. But we finally have the World Journal of Surgery, and it is very good. Only the best papers from the meeting get into it. They have to go through an editorial committee so a lot of the bad papers never are published, which is good. Then they have developed a very good way of presenting symposia on important aspects of surgery, not related to that meeting. They have a very good editorial board from all over the world. It's turned out to be a very fine journal.

Hughes: Is the criterion excellence or is there also an attempt to get a broad representation?

Gerbode: We try to get everybody to participate in it, but they don't take papers unless they're high quality, even though they are from a country that doesn't publish very much.

- Hughes: Why did the society grow up in Belgium?
- Gerbode: Belgium [is] a neutral country. The United Nations had a big office there, and the world trade organizations were all there, because it's supposed to be a neutral country and not politically very active.
- Hughes: So it didn't have anything to do with the quality of surgery?
- Gerbode: No.
[telephone interruption]
- Hughes: Dr. Gerbode, I know you've always been interested in training young people, and I know for a time you had many foreign scholars at the institute. Did your membership in the International Surgical Society help you find likely candidates?
- Gerbode: A little bit perhaps, but I guess the likely candidates came out of the fact that we had a very active unit going here in San Francisco. It was well recognized throughout the world. The countries who didn't have any heart surgery going [wanted] to send their young men somewhere in the States to have them trained so they could help their programs locally. The other places in the country, the Mayo Clinic and some places in New York, were active in those early days in open heart surgery. The other advantage I had, I guess, was the fact that I didn't have to have a big residency program going for Americans. That was because we didn't have an approved thoracic training program for Americans.
- Hughes: Was that because it was--?
- Gerbode: Because of the university not being here anymore.
- Hughes: And they didn't count the University of the Pacific?
- Gerbode: No.
- Hughes: It was too far.
- Gerbode: Yes. It wasn't important enough for them. So that was another reason why I've selected so many foreign people to train. But I also enjoyed training them very much, because they were the cream of the crop from all these countries.

But coming back to the International Surgical Society, the other important thing we had to work on was the fact that the bureau in Brussels always decided themselves where the next meeting would

Gerbode: be and who the president was going to be. We felt this was not being very democratic and we had to change that as well. We did this through the council, which is a group of representatives from various countries. The council finally had courage enough to say no, we're not going to let you decide where the meeting is going to be. We're going to decide. This was a little traumatic for the bureau, but we finally put it through. The Belgians are very strange people in many ways. They're stubborn, difficult to deal with. I guess psychologically they've been affected by being conquered so many times by the Germans.

At the meeting in Kyoto the bureau tried to push through its own president. I didn't think its selection was going to be very good at all. It had selected the person, I think, because it was going to get something back from the person it had nominated, in terms of membership, or paying off an old obligation in one way or another. I was president at the meeting in Kyoto. They nominated this fellow for presidency, and then I had a little group of people who were going to nominate some other people from the floor. I said, "The nominations are now open from the floor," which they had never heard of before. They just said, "We've decided the president will be so-and-so," and then everybody said yes. But I said, "We're going to vote on this." So there was another nomination from the floor. Then I said, "I think we ought to have some discussion of these candidates," which had never been heard of before either. So various people got up and talked about the virtue of the two candidates, and so forth and so on. Finally the candidate whose name had been submitted from the floor won quite easily. [The candidate who didn't win] had to have a major operation on his aorta performed about three or four months after the meeting, and he died afterwards. So he wouldn't have been president anyway. It was too bad. He was a nice man, but not a very brilliant person.

Hughes: Were you the first American president?

Gerbode: No.

Hughes: Is there any subdivision? Surgery is a big field.

Gerbode: No. There has been a conflict, because so many of the bright young people went into cardiac surgery, and the programs are a lot more exciting in cardiac surgery than they are in let's say gastrointestinal or colon surgery. Hardly anything ever comes out that's very new [in these fields]. So the vascular people got kind of snooty about it. We used to have the meetings [of the International Cardiovascular Society and the International Surgical Society] at the same time or

Gerbode: sequentially. The vascular people, which is the International Cardiovascular Society, for which I was president of the North American chapter at one time, decided this year not to have the meeting with the International Society of Surgery, and so they're meeting on September 18, [1983], I think it is, in Rio de Janeiro. But I have a feeling they'll come back again to the sequential meeting with the International Surgical Society, because although they now have demonstrated that they can be their own people and all that, I think actually it's better to bring all the surgeons together.

Now, two other societies meanwhile have asked to have joint meetings with the International Society. There's a gastrointestinal group and an endocrine group who are now going to meet with the International Society. Then there's another group mainly interested in education and research in centers in the world that's called the Federation Colleges. They always meet now with the International Surgical Society. That's a good idea, too, because they talk about training of surgeons and basic things like that.

I look forward to this meeting in Hamburg. I think it's going to be a very good meeting. It's a good place to have an international meeting. They have good facilities, good hotels.

Surgery in Various Countries: Comparisons

Hughes: When you get into the higher echelons of surgery, is there much technical difference, from nation to nation?

Gerbode: Yes, I think there is. Some of the countries in Eastern Europe are really quite poor in their technical ability, and that's mainly because their training methods are not very good and selection of the top people very often is done on a political basis rather than on skill. For example, in Yugoslavia there's one professor of surgery whose biggest contribution is his mouth. He's the most outspoken, loud-mouthed surgeon I know. He talks everybody down wherever he's been. But actually his presentations are terrible.

I'd say the Germans are very skilled. Some of the French are very skilled. I don't know very much about many of the centers in France, but certainly the Parisian surgeons are very good. I think most of the English surgeons are quite good, especially those in medical schools.

- Hughes: When you say quite good, do you mean in a technical sense?
- Gerbode: Yes, they are able technically and they understand how to take care of a sick patient.
- Hughes: Are most of these top people associated with a research institution as well?
- Gerbode: Research is not done on nearly as broad a basis in England and Ireland as it is in this country. The Germans are increasing their research capabilities a good deal by granting money from their federated treasury to medical schools and institutions. Also the Germans have recognized that the excellence that we have in America has really come from the great support of the National Institutes of Health and societies like the Heart Association and the Cancer Society. I think also the young people here in the United States who wanted to go on in academic careers found that if they published good things, their academic careers would be pushed forward. So they're all trying to make their way with contributions of that kind.
- Hughes: British governmental policy has not been favorable to medical research?
- Gerbode: They don't have as much money in their allocations. They have barely enough money to keep their medical institutions going. They found that a national health service cost them a lot more money than they ever expected, and that it isn't very good. Actually, currently the fastest growing insurance in England is private medical insurance. People have found that by paying for it they get better care and they can select their own doctors. They would rather go to a smaller hospital with their own doctor than to go to a big teaching hospital and not know who is going to take care of them. The backlog in the big teaching hospitals is enormous. It's unfortunate, but that's the way it is. It just isn't working out.
- Hughes: Is the United States really in the lead in most fields of surgery?
- Gerbode: Oh yes, I think so. Across the board, I think there's no question about it. There are places in the [world] where men and institutions have emerged in a very great way. For example, there are one or two very prominent surgeons in China who've done an enormous job in cancer of the esophagus. They've done very good work and they've published their work, and it's stood up very well as compared with other countries. For example, G.B. Ong, who is the professor of surgery in Hong Kong, has a remarkable record in major surgery.

Hughes: But these are individual exceptions.

Gerbode: Yes.

Hughes: Would you credit the leadership of the United States in surgery mainly to the tie-in with research?

Gerbode: I think that's one [reason]. I think the rewards given to young people who have made contributions are so worthy that they try to do something unusual, they try to make a contribution. The other thing is, we have residency training programs in our country which are not generally accepted elsewhere. For example, in Germany a man stays in training for years and years and years, which is good for him in a way. He becomes very skillful. But there aren't many trained in the system this way.

Hughes: So there's a sharp pyramid.

Gerbode: Yes.

The Pan-Pacific Surgical Association

Hughes: Is there anything particular to say about the Pan-Pacific Surgical Association?

Gerbode: The Pan-Pacific Surgical Association is a very good organization. I started going to their meetings because I was going to the [Hawaiian] Islands quite often anyway, and it was great fun to go down there to a meeting. When I went to the first meeting I was really quite surprised to find it was well attended by Japanese, Chinese, Australians, New Zealanders, and many from [other parts of] the United States. Even though they were not working in the Pacific, they liked the idea of going to the Hawaiian Islands for a meeting. [Some] of the presidents have come from the eastern part of the United States. That was done deliberately so that they would encourage memberships in the mainland. So there are a great many members all over the United States.

Hughes: Is there a journal?

Gerbode: They publish a journal although every paper is not published. The best papers are selected, [as in] some other organizations.

The Society for Vascular Surgery

Hughes: We've mentioned the Society for Vascular Surgery. You were president of that as well.

Gerbode: The Society for Vascular Surgery was started in this country when vascular surgery got to be a pretty recognized field.

Hughes: After the war.

Gerbode: After the war. I was very active and always went to the meetings and eventually they elected me president.

The International Cardiovascular Society

Gerbode: Harry Shumaker and I put together the International Cardiovascular, North American Chapter because some of the elder statesmen said, "You two fellows are busy in the field and know all the vascular surgeons. Why don't you put together the International Cardiovascular, North American Chapter?" So we just sat down and picked out the good people in the country and asked them if they would like to join. They all joined, so then they had a good chapter.

Hughes: Is there any problem with having so many surgical societies?

Gerbode: Oh, there is a problem. If I went to the meetings of every society I belong to, I'd be in meetings all the time. It's bad enough as it is going to maybe one out of three meetings. I haven't been to a meeting of some of the organizations for a long time. The Halsted Society, for example. Luckily, I'm a senior citizen now, so that I'm forgiven if I don't show up at a meeting.

Hughes: It must have been a problem when your career was so pressing, to find time for these meetings.

Gerbode: I'll tell you, it was hard. First of all, I tried to be with my family some of the time. But this work in developing heart surgery was very demanding, and to have a training program going, a research program going, and try to develop the field of cardiac surgery was very hard on family life. I think my wife was very brave to live through it. It was hard on her, I can tell you. I know quite a few families which really fell apart because the men had to work so hard. [One problem was] that you had to go back to

Gerbode: the hospital almost every night to check on the patients. Some men don't do it. But if you're conscientious you do. Or you're in touch on the telephone, which means that you're not sitting around enjoying life; you're sitting around waiting for the phone to ring.

Hughes: And I imagine there was a certain tension involved when the procedures were all new.

Gerbode: Yes. Also, relative to the societies, if you're in the leading edge of a new speciality, you're very anxious to make contributions before anybody else. So you're constantly trying to do something that will get on a program, and probably trying to do it before somebody else gets on the program. It's very competitive. It's good for the organization itself to be competitive this way. So you go to a lot of meetings and you try to present your material as often as you can.

Hughes: We talked earlier about free interchange of information, and yet I would think that an individual would have certain reservations, particularly if he was working on something that wasn't quite ready for publication. Would you really be quite so free with information at that stage?

Gerbode: I think you would certainly hide certain things that were really pretty fresh and new and not let them out of the bag too soon. But actually most people know what you're doing anyway. There's so much interchange, visiting around in laboratories and places, that the word gets around that you've got a new valve, a new way of doing something.

Some men in the biological field have developed a reputation for stealing ideas. I know one very famous man at the University of California who liked to visit other laboratories all the time, but some of the men in these other universities would lock everything up whenever he was going to come around, otherwise he'd take the idea home and work at it in his laboratory.

The American Heart Association

Hughes: You had quite a bit of money over the years coming from the American Heart Association, didn't you?

Gerbode: I was president of the San Francisco Chapter of the American Heart Association. But the best thing I did with the Heart Association outside of spending their money wisely, I thought, was to get

Gerbode: Mr. Bramson on as an established investigator when he wasn't an M.D. As I mentioned before, he was the first pure engineer in the country to become an established investigator and he was paid a small stipend from the AHA. Now it's quite accepted, and there are Ph.D.s and others who are not M.D.s who are supported by the Heart Association, and their research is supported by the Heart Association.

One of the biggest things I felt that we did in our unit was to bring people who were not doctors right to the bedside to help with clinical problems. [They were] engineers and Ph.D.s and physiologists. It's amazing, if you get a non-M.D. looking at a problem what you can learn and discover. Mr. Bramson didn't know anything about biology when I hired him to work with our research unit. He very quickly learned all the basics about blood and circulation. He did all the mathematics connected with it. He studied and learned about physiology and blood. He became a very successful biomedical engineer.

Hughes: Probably this interdisciplinary approach to medical problems is one of the key features of modern medicine, wouldn't you say?

Gerbode: Yes, and I'm very proud of our unit because we were among the very first to bring people who were not medical people to the bedside.

Hughes: That whole episode with IBM and computer monitoring is another example.

Gerbode: Absolutely. You see, IBM sent out three very top-grade Ph.D.s to work with us. They watched all the signals as they came into the computer, and pretty soon they could tell when things were not going well with a patient just by looking at the signals.

The California Academy of Medicine

Hughes: You were president of the California Academy of Medicine as well.

Gerbode: The California Academy of Medicine is an old California institution. Originally it was the licensing organization for the State of California before we had a State Board of Medical Examiners or whatever they call it now. It's kind of a prestigious organization. They have a meeting about once a month [with] a big dinner and a guest speaker, somebody well known in the world. The Family Club

Gerbode: is where they previously had the cocktail party and dinner, and then they'd roll down the hill to the St. Francis Hotel, where they'd have the lecture. By that time everybody was so spifficated that most of them wanted to go to sleep. Now they have the lecture first, and then the dinner.

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Gerbode: [The dress is] black tie.

Hughes: Do they publish California Medicine?

Gerbode: No. They don't publish anything.

Hughes: So that particular association is more social than--

Gerbode: Yes. It's social, a little bit prestigious, and old and venerable.

Hughes: There are other associations on this list. Do you want me to read them?

Gerbode: Well, being a member of some of these societies gets to be like the domino principle. If you're made a member of one particular organization, then it's almost sure that you're going to be asked to be a member of another. And you never know how this happens.

Honors*

Gerbode: I think probably the most gratifying thing to me in looking back at my career is the fact that I got some honorary degrees. These are things that aren't gained by political access to universities. As a medical student I would have thought perhaps that getting an academic degree in another famous university was going to be beyond me. So when I started getting some honorary degrees I was enormously pleased. My wife was enormously pleased, too, because a wife really shares in these things, you know. For example, the eulogy [for] the degree from the National University of Ireland was read in Latin by [Eamon] De Valera himself. It was a very impressive event in my life.

Hughes: Do you know in each case why you were awarded the degree?

*See the session recorded on 6/13/84, pp. 412-415, for further discussion of honors.

Master of Surgery (Honoris Causa), The National University of Ireland, 1961

Gerbode: I think the reason that I was awarded the degree in Ireland was the fact that I set up what you might call an international training center for cardiovascular surgery. In other words, I welcomed people from all over the world and whenever possible taught them something. I trained many people from other countries, in addition to doing pretty good research.

Hughes: Had the Irish been particularly well represented?

Gerbode: No, not very well represented.

Hughes: Are these honorary degrees awarded by a committee?

M.D. (Honoris Causa), Uppsala University, 1965

Gerbode: Yes.

I was really quite surprised at the honor from Uppsala University because that is probably one of the two or three most prestigious universities in [Europe]. When they read the reasons for giving me the degree, it was mainly about my experimental surgery on animals some years before. They dug this up and said [you were] among the first to do these things.

Hughes: Are the Swedish research oriented?

Gerbode: They are very research oriented, and they do good work.

Hughes: That might be some of the reason.

Gerbode: Yes, that's another reason. They do excellent work and they've made notable contributions, and still do, and in a country where medicine is probably more socialized than any other country outside of Russia. For example, a [Swedish] surgeon who does a case let's say on a Saudi Arabian prince can only collect five dollars for it. He's supposed to do it for nothing really. The man has to pay for his hospitalization, but [the surgeon] can't accept a fee. I imagine that some of these very wealthy people arrange somehow to compensate the surgeon.

Hughes: So the Swedish surgeon is on strict salary?

Gerbode: Oh yes, and he's limited in the amount of money he can collect from private patients. Many of them leave the country if they have a chance to go somewhere else. The same as the English.

Hughes: Within the country concerned, is the salary sufficient to be an incentive to enter that field?

Gerbode: I guess it's comparative. None of the salaries anywhere in Sweden are high, so everybody is reasonably poor. If you're a professor you can have a small house, maybe even a tiny house at the beach somewhere. Private property still exists, so that's an advantage.

Honorary Fellow of the Royal Colleges of Surgeons of England and Edinburgh, 1969 and 1975

Gerbode: The Royal College of Surgeons in England made me a member. That's an honor, as did the Royal College of Surgeons in Edinburgh, that's an honor, too. But I think that's given mainly on the work you've been doing, the publications you made and the people you've trained and that sort of thing. I guess England and Scotland were happy to honor me because I'd trained about twelve surgeons in England and I'd been to many meetings and I have lots of friends. Certainly that helps in getting through a committee. You don't propose yourself. Having friends anywhere in the world I guess is a help.

M.D. (Honoris Causa), University of Thessaloniki, 1964

Hughes: What about the honorary M.D. from the University of Thessaloniki?

Gerbode: That came largely because I had two or three very close friends high up in the university. I had helped to train a couple of Greek surgeons, [and] I'd been to Greece a number of times and given some lectures at the University of Thessaloniki. To get a degree there is a very ancient ritual, because you wear a long robe that looks like a monk's robe and has a picture of an angel on the side. The hat looks like a cardinal's hat.

The René Leriche Prize, International Society of Surgery, 1973

Hughes: What about the René Leriche Prize?

Gerbode: Every year the International Surgical Society makes an award to an individual who has made contributions in cardiac or vascular surgery. The selection is made by a committee. One year they gave it to me.

Hughes: On the basis of what aspect of your work?

Gerbode: I think all the publications in cardiac and vascular surgery.

Hughes: Who was René Leriche?

Gerbode: René Leriche was a famous French surgeon who did not grow up in Paris. This became a disadvantage for him later in life, because in order to become a professor or the head of a department in Paris you have to really grow up in the system in Paris. When some people wanted him to become chairman of the department in Paris, it was stopped, I think, on the basis that he came from Strasbourg or somewhere outside of Paris. But he wrote very good papers on vascular disease.

There is one syndrome called the Leriche Syndrome, and that is thrombotic and arteriosclerotic occlusion of the abdominal aorta. [It] occurs mainly in middle aged people, middle aged men more than women, although women can get it. The basis is mainly arteriosclerosis of the abdominal aorta. The syndrome is associated with weakness, tiredness and coldness of the legs and reduced sexual capacity because the blood supply to the genital organs is decreased as well as to the legs. So men cannot have a proper erection and can't sustain an erection. The nerves to the genital organs are affected, too, from ischemia.

[interruption]

Alexis Carrel

Hughes: Talking about Leriche made me think of Alexis Carrel, who had done some very early vascular work in France and then later at the Rockefeller Institute. Was there any association between them?

Gerbode: No.

Hughes: Was it just coincidence that those two pioneers were French?

Gerbode: I think Alexis Carrel really didn't originate the vascular surgery techniques that he applied at the Rockefeller Institute. I think he saw other French surgeons using them. But anyway, he transplanted organs and kept them alive with vascular suture. For example, he transplanted a heart into the neck of a dog and it stayed alive for a while. He demonstrated that you could sew arteries together and that they would heal. This work plus a number of other things such as tissue culture techniques is what gave him a Nobel Prize.

Now, the curious thing is, you see, that this was in [1912]. It really took one whole generation for this concept to be applied on a broad basis. This is generally true that it takes twenty years for an idea to become widely accepted and adopted. It was certainly true of the heart-lung machine that Jack Gibbon started working on before the war in Boston. It took twenty years for that to get on the road.

Hughes: Is it mainly changing people's points of view?

Gerbode: I don't really know what the reason is. As somebody said, the future belongs to the people who see things around them that can be utilized right away. The thing is we don't really accept them or use them, but they're all around us.

The British Order of St. John of Jerusalem, 1956; Knight, 1978

Hughes: I'm looking at the honors again. The British Order of St. John of Jerusalem.

Gerbode: This is the oldest order of chivalry in the British Empire and goes back to the Knights of Malta. The Knights of Malta were the ones who fought against the infidels in the Middle East. They were trying to get the Holy Grail out of the Middle East and they were also fighting against the Mohammedans. It was a big thing for a wealthy young man in England or Germany or France or Italy to become a knight and go and fight this war against the non-Christians. The Knights of Malta were from all these various countries. It was mainly a Catholic organization. Henry VIII stopped the Catholicism, including the English chapter of the Knights of Malta. There are Knights of Malta in France, Italy and Germany. Finally the British reestablished the Knights of Malta on a non-Catholic basis. It

Gerbode: was more or less put into the hands of the Church of England. So there is an association between the various countries that have the Knights of Malta, but it's a rather loose association.

They decided some many years ago to have an American chapter. They had ones in Canada and Australia, too. They first make you a brother officer, which is the lowest in the echelon, and then finally you get elevated to something else, and then if you're a very, very good boy or good girl you become a knight. The women become dames.

Hughes: Is it for any good work in any field of endeavor?

Gerbode: I think in any field of endeavor, poetry, business, diplomacy, medicine, science. Anyway, I was made a brother officer in New York about ten years ago. You see the big [emblem] [referring to a photograph] on the sleeve?

Hughes: Yes. That's impressive.

Gerbode: Four years ago they made me a knight here. They sent out the head of the order from England to go through the formalities with the sword and the robes. In northern California I guess there are three or four other knights.

They have an annual meeting in London which is quite an affair. You meet in the Old Priory Church and have a high Church of England ceremony. Then you have a typical English breakfast afterwards. Then you go to the Town Hall in London. There they discuss what the various chapters have done throughout the world. They maintain an ophthalmic hospital in Jerusalem, which is a very good one. Then they all go to St. Paul's Cathedral. You line up in the order of the degree of your appointment. The English and Scotch knights are in the front of the procession. The other knights are behind them, depending on the country they're from and whether they're knights of English descent or not.

They have silver and gold robes, and the gold robes with the golden insignia mean that your family came from England or Scotland. The silver ones mean that your family did not come from England or Scotland. I could get in on the gold thing if I really wanted to, because I had an English grandmother, but I don't think it's worth going through the nonsense.

At any rate, everybody lines up in St. Paul's Cathedral. The order runs the ambulance service in England. They're always out in mass quantities for parades and coronations, and they pick up all

Gerbode: the fainting people on the street, and they maintain law and order. They train people in ambulance services and first aid. They do a really good job. Many members are present at this annual meeting in London. Then the most exciting thing is seeing all the little children who are junior members and who are taking first aid. They have uniforms, like Girl Scouts, and they're all in the back of the church, their eyes fairly popping out of their heads to see all these berobed gentlemen with all these insignia. They love it.

Hughes: And you do, too. [laughter] Which of these many honors do you hold dearest?

Gerbode: I guess I like the English ones the best because I've spent so much time there and have so many friends there.

Service on Editorial Boards##

[Interview 9: September 19, 1983]

Hughes: Dr. Gerbode, you are on several editorial boards, and perhaps I should read them for the record. The Annals of Surgery, the Review of Surgery, the Annales de Chirurgie Thoracique et Cardio-vasculaire, the Journal of Cardiovascular Surgery, and Surgery in Italy. Can you tell me how those appointments came about?

Gerbode: I think the most important one on the list is the Annals of Surgery. I was appointed to the editorial board by John Gibbon, who was a friend of mine and also was the creator of the first heart-lung machine. Being on an editorial board means that you review and criticize manuscripts before they're published and vote in favor or not in favor of having them published. Sometimes they're reviewed and then sent back for revision. With regard to the Annals editorial board, I suppose on an average we reviewed about two or three manuscripts a week. Now the load is less because we have a larger board, and perhaps they're taking some pity on me and not sending me as many as they used to. But in any event, it's been very interesting, because you really have to know the field pretty well. Sometimes you have to look up the literature to confirm whether the new manuscript is really contributing anything [new]. Knowing the people in various academic centers is important, too, because if the author is a reliable person, it's very likely that what he's written is going to be reliable.

We have an annual meeting of the Annals of Surgery during the meeting of the American Surgical Association. Usually a luncheon is put on by the publishers, which is Lippincott and Company, and it's very well attended, and a nice event. I've always brought up the

Gerbode: rather mean subject of Lippincott Company not making a contribution to the American Surgical Association for a fellowship or some sort of reward, because I know they make a fair amount of money from that journal, and none of the editors are paid anything, nor do they want to be paid. But some of the other organizations, like the American Association for Thoracic Surgery, publishes in the Journal of Thoracic and Cardiovascular Surgery, which is owned by another company. They give the AATS a fairly large contribution every year, sometimes as much as fifty thousand dollars. I know that Lippincott could easily match that if they wanted to, but they never have. I guess I shouldn't bring this up any more at meetings, because it makes me rather unpopular with the publishers. I don't think any of the editors want any money, but they would like to have some contribution to education or fellowships or something like that.

Hughes: Do you remember when the Annals was founded?

Gerbode: The Annals of Surgery has been founded for probably a hundred years.

Hughes: Is an editor chosen on the basis of his prominence in the field?

Gerbode: I think he's chosen because people know he is a conscientious person and is knowledgeable about surgery in general and about his own specialty. But he's also known for being punctual and doing a good job in various contexts.

[interruption]

Gerbode: Some of the other boards I've been on don't require very much work. Periodically a manuscript will come from the chief editor for review. It's usually something which is slightly controversial, and then an editor, such as I've been, would be an arbiter between the various positions. It's been interesting to do these jobs, and it's nice to read material before it's in print, too.

Hughes: Does the editor send you papers that are roughly in your field?

Gerbode: Sometimes, but when you're chosen to be one of these editors, you're supposed to be knowledgeable about the whole field of surgery, so the bulk of material is general surgery. Some specialty work comes through.

Hughes: What is the exact procedure?

Gerbode: Usually the paper is sent to two or three sub-editors, and each one reads the paper, makes comments, and advises the main editor whether or not he thinks it should be published, and gives it a rating from

Gerbode: one to five. Sometimes you can suggest that something be published immediately, because it's so good and so pertinent. So you can write a priority publishing note on a manuscript, which means they'll probably turn it out in the next issue. Sometimes manuscripts get bounced around between editors, because they want to review and revise them, and sometimes a sub-editor will say he can't really decide whether to have it published or not, and he'll leave it up to the main editor to decide.

Hughes: How is consensus reached amongst the sub-editors?

Gerbode: The main editor will look over the criticisms and remarks of the sub-editors, and make up his own mind. It's curious how close the agreements usually are. We get the comments back from everything we've reviewed, and it's very common to see that all the sub-editors will say the same thing about the paper.

Hughes: Is there much difference in outlook amongst these various journals?

Gerbode: I think there's prestige connected with publishing in some of these journals. Annals of Surgery has a lot of prestige, because it's been so good and [is] so old, being founded in 1885. So if somebody who has something they want to publish, and have it be presented to the general surgical public in a very flattering way, he would try to get it published in Annals. It's very easy to publish in some journals, and very hard to publish in others.

Hughes: So Annals is--

Gerbode: It's one of the very best. The Journal of Surgery is very good, too. We have a new journal called the World Journal of Surgery, which some of us got started with the International Surgical Society.* That's turning out to be quite a good journal, too.

Hughes: You're not connected with the editing of that particular journal?

Gerbode: No, I'm not.

Hughes: Is there a story behind the appointments to the other journals that I mentioned?

Gerbode: I don't think so. Some of these appointments are made on a regional basis. In other words, they try to have editors in various parts of the country. I guess I've been appointed in some instances because I live in San Francisco when they wanted to have a West Coast editor or a northern California editor.

*See discussion on p. 209.

Affiliations with Medical Institutions in the Bay Area

Hughes: Hospital affiliations.

Gerbode: I've not tried to be on a lot of hospital staffs, because I never have liked operating in a number of different hospitals. I have really only operated in two private hospitals, Children's Hospital and the old Stanford Hospital, which is now Presbyterian. I have [also] operated quite a lot at the Oakland Naval Hospital and Letterman Army in San Francisco.

Hughes: Why don't you like to operate in other hospitals?

Gerbode: I don't like to operate on a patient and not be able to see the patient the same day or follow the patient closely. The big advantage in operating in the old Stanford Hospital was that I was there all day long, so if I operated upon somebody, I could go see them quickly and easily. If you have an office downtown and something happens with your patient in a hospital, then you have to get somebody else to look in quickly or hop in a car and try to get there yourself. I've never liked that very much.

Hughes: So you'd really rather follow a patient through all the way in your own hospital?

Children's Hospital, San Francisco

Gerbode: Yes. I did some work at Children's Hospital, because they wanted to start a heart program. This was particularly true when Dr. Holman retired from the chair and wanted to get out of Stanford Hospital and do some closed heart surgery at Children's Hospital. I helped him get started by getting instruments for them and more or less telling them what was required to do the work. I did a few cases over there, too. But my main affiliation always has been with the old Stanford Hospital.

Oak Knoll Naval Hospital, Oakland

Gerbode: I operated at the Oak Knoll Naval Hospital, particularly during the Korean War. They had a lot of casualties coming back, particularly among the Marines, and I went over there at least once a week and

- Gerbode: helped the chief surgeons operate on some of those patients. Some were vascular cases and some were chest cases. And I rather liked that, because I felt that I was needed and I could make a contribution.
- Hughes: Does the surgical staff in that case welcome you with open arms?
- Gerbode: Oh yes. They like to have a civilian consultant come in. I did the same thing later at Letterman Army Hospital. When they wanted to start a vascular and thoracic program, I was one of their consultants, and so I spent a lot of time with their chief surgeons, getting them started in these various procedures, helping them do them. The army appreciated this very much, and for that reason, and perhaps some other reasons, they gave me a Distinguished Civilian Service Award. They credited me with getting their thoracic surgery program started. The other person who helped a lot was Paul Samson from Oakland. The two of us really put together their thoracic and cardiovascular program.

The University of California, San Francisco

- Hughes: In 1965 you became an associate surgeon at UCSF. Could you say something about that appointment?
- Gerbode: When Stanford decided to move, which was 1959, we had a very vigorous open heart surgical team going, and were making pretty good contributions. There were several hospitals and groups in the Bay Area who thought maybe the old Stanford campus [in San Francisco] would be closed. So they offered me and my unit an opportunity to move. Several delegations from UC San Francisco came to see me about making me a professor there and giving me the opportunity to run their heart program.
- Hughes: Did they not have much of a heart program at that stage?
- Gerbode: They had one, which I won't mention too much about that, but they were not particularly satisfied with it. I don't know whether they were justified in their position or not. But that was why they came to see me.

I also had a delegation from Mt. Zion Hospital with the same idea in mind, and also from Children's Hospital. The Children's Hospital approach was rather funny, because before they asked me to become head of their open heart surgery program, the trustees had

Gerbode: decided that we would give our obstetrical service and pediatric service entirely to Children's Hospital, and they would send all their heart patients to us. This was a fair trade, because they didn't have any heart program that amounted to anything, although they tried later, rather unsuccessfully, to get one going. But a few days after the trustees had decided this, the chief of staff, whose name I won't mention, called on me at home, wanted to know if I would come and start a heart program at Children's Hospital, entirely ignoring the decision of the trustees.

Hughes: That's interesting.

Gerbode: Well, it is. It's kind of funny that they thought, well, it's nice for the trustees to make these decisions, but we don't necessarily have to follow their suggestions or decisions.

Hughes: Did you look twice at any of these?

Gerbode: No, I didn't. If I'd gone to UC, I would have gone into a hornet's nest. It's such a big campus, and there are so many forces that play up there, and I knew so many people personally, that I would have had a hard time cleaning house and getting anything set correctly, and I didn't want to do that.

Hughes: Did the various contingents that came to you from UC imply that there was considerable division within that department?

Gerbode: Yes. They weren't satisfied with the way it was going. I guess they wanted to have somebody come in who could make decisions and push it forward. I could have done it, but I would have made enemies, too.

The same thing happened, of course, at Stanford. They sent several delegations to get me to move to Palo Alto, either to be professor of surgery in the department or a chief of cardiovascular surgery, or even to be a dean.

Hughes: Do you care to say anything about some of the individuals in cardiovascular surgery at UC? I'm thinking of people like Paul Ebert and Benson Roe.

Gerbode: Paul Ebert has been very recent. He came from New York just a matter of a few years ago and has done an excellent job. He's a very nice man, and I like him as a friend and as a surgeon.

Gerbode: I think Benson Roe was the chief of that department or division before [Ebert], but he was getting close to retirement age. I suppose that's why they wished to have a younger person come in.

Hughes: Have you considered all along that that program was competitive with yours?

Gerbode: It was terribly competitive when Stanford was up here, when we were getting started. Without bragging at all, we were quite a bit ahead of their department, because we didn't have departmental jealousies or other factors to interfere with us. We just had our own show and good people, and nobody was trying to interfere with our work. It makes a big difference. We had a good research program going as well, which was well funded, and this helped, too, to get our unit established sooner than theirs.

Hughes: I'm hearing the theme throughout these interviews of how important it is to tie surgery in with research, and I was just wondering if there was an impact when the Institute of Medical Sciences was founded.

Gerbode: I think when we got the Institute of Medical Sciences going, and a heart research institute within it, and it had very ample funding from NIH, this made a big difference, because we could then train people in various aspects of open heart surgery and postoperative care. We had money to develop machines and various paraphernalia that you need to invent or buy to make it go properly. UC didn't have that.

Hughes: No, it didn't but when Julius Comroe came along and founded the Cardiovascular Research Institute, wasn't one of the motives for founding that institution to provide research that would be directly applied to heart problems?

Gerbode: I don't know what the people had in mind when they brought Julius out to San Francisco. He wasn't particularly involved with cardiovascular surgery or surgery of congenital heart disease or even acquired heart disease. He mainly was interested in pulmonary physiology, and he was the leader in that field. Some of our people went over and took courses under him in pulmonary physiology. But Julius did not have the slightest notion of how to train a man in any residency sense. He was not interested in that kind of approach.

Hughes: He had a more strict academic--?

Gerbode: He had a very strict basic research goal in mind, and he did it very well, and he had very good people working with him.

Hughes: So as far as you know, that wasn't a jumping off place for--

Gerbode: I don't think it helped the heart program, as far as I can see. Indirectly I think some of the people who went over there and took courses under him helped us in our postoperative care, because they had some very good basic concepts, which Julius was teaching, that helped us understand pulmonary problems in postoperative patients.

Hughes: Did the department of surgery at UC have a strong research program?

Gerbode: I don't know whether you could say it was very strong or not. They were doing research and had been for quite a while. But they weren't doing the kind of research that we were because they didn't have a big enough organization and funds to do it very effectively.

Hughes: Do you think some of that could be attributed to the policy of the regents?

Gerbode: No, I don't think so. These things go back to individuals and the chiefs of departments. The chiefs of the departments at that time were men who weren't very talented in doing research. I don't want to de-emphasize them or anything, but they were more or less clinically oriented. Some of the positions they took, for anyone wanting to push open heart surgery forward, [must] have been quite frustrating.

Hughes: UC did not have a strong tradition of medical research, certainly in comparison to Stanford. I believe it was well after World War II that medical research was emphasized, and some of that was because people holding positions there were in private practice. They were taking care of patients; there wasn't a place in their lives for the research lab. Whereas Stanford, from what you've said, had always honored the research tradition.

Gerbode: Dr. Holman, my chief, was very strongly oriented toward research, and he helped young people do work in the laboratory. He was not very good at raising money for them. He didn't seem to think that that was terribly essential. You can do a lot with a little bit of money, if you have a good laboratory. What he didn't do in fund raising for the lab, he did in actual work himself. Even in the last few years [of his life] he was doing some research in the animal laboratory.

Hughes: Have you recognized all along the importance of the fund raising aspect of research?

Gerbode: You can't do anything in medicine without money. The way you get money is by publishing good papers and having good people work with you. I recognized this as being an essential aspect from the very beginning. Every fellow that came to me had a research problem, and they knew when they came here they were going to have to do research. I didn't tell them what kind of research they were supposed to do. I said, "You have three months to make up your mind what you want to do, but I want you to have a research program during your fellowship, and I want you to do something that you like to do."

Hughes: You didn't try to be selective about what that research was?

Gerbode: I had only to say that it would have to fit in with what the department was doing, but I didn't tell anybody they had to do one thing or another. Some of them did research on certain aspects of the use of heart-lung machines. Some people studied anatomical [problems]. I would say in general the animal laboratory was the basis for most of the research these young men did.

Hughes: The umbrella was something to do with the cardiovascular system?

Gerbode: The umbrella was the cardiovascular system or lungs.

Hughes: Getting back to the appointment at UCSF, what did you actually do?

Gerbode: That's a good question. Well, I didn't do very much. The only thing I really did up there was sit on a couple of committees which were involved with decision-making about involvement with the government in various programs. I was on a couple of committees which met periodically to thrash out whether to join these programs or not, and I must say, it was a lot of wasted time. I went there because I felt that the old Stanford people should be counted in the decision-making. But actually the decisions that were made were not very effective, and it didn't really matter in the end.

Hughes: It seems unusual to have a person such as yourself, who must have been looked upon as a competitor, being included in policy decisions.

Gerbode: Yes, I suppose some people didn't like that. But on the other hand, I think they recognized that I'm pretty fair-minded, and I suppose they would assume that if anybody from the outside were going to come in there and help them make a decision, that they ought to get somebody who wasn't too prejudiced.

Hughes: I imagine the fact that you had been such a successful money-raiser for your own institution also was impressive, was it not?

Gerbode: I guess that counted to a certain extent.

[interruption]

Gerbode: I have one strong feeling about UC, which I've said to some regents and some of their higher staff for years. I've felt all along that UC is physically in the wrong part of town. The reason they're up there is because they got a little gift of land and the Hooper Laboratory, which are on the side of a hill, and they were so happy about getting it for nothing that they built everything else around it at great cost. It's terribly expensive to build on that ledge up there. Furthermore, I've said all along that it's the wrong place for sick people to have to go, because there's only one bus line. It's not in any stream of traffic anywhere. It's very difficult for people to get there, both staff and patients. I had several long talks with [John B. de C.M.] Saunders, who was then chancellor, about this subject. In fact, he came and talked to me about it at one point. I said I thought they ought not to abandon that whole center up there, but de-emphasize it and build a whole new center [in] Japantown. It was relatively cheap, because it was low-cost housing. There is ready access from various directions, and good transportation facilities.

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Gerbode: [Saunders] felt that the students at UC were not getting as good bedside teaching as they should be getting. I don't know why he felt that. He actually thought of starting a whole new campus somewhere else, which I felt, too, would be a good long term move. There were many parts of the Parnassus site which could be used for other medical aspects.

Hughes: He didn't have a location in mind?

Gerbode: He thought this Japan Center idea was a good one. But of course the politics involved with anything like that are really terrific.

Hughes: What would be the argument for staying at Parnassus?

Gerbode: Because they'd already put millions into the place. It's just like pouring good money after bad. The money comes from the state treasury so it's easier to get. If they had to survive on that edge up there on the basis of private support, they'd never make it. I think it's a very bad place geographically for a big medical center. They have to build vertically, and the parking's terrible.

Hughes: Did anybody listen to you?

Gerbode: They listened to me, but then they didn't do anything about it.

Hughes: Did you speak to the regents informally? You didn't actually appear before the board, did you?

Gerbode: No, just informally.

Hughes: You happened to know--?

Gerbode: I knew one regent who was very important, and I talked to him quite a bit at some length about this. He used to show me the budgets of the UC Medical School and ask me to comment on the budget requests, which I thought was probably not very [proper] to do. But I didn't have much to suggest about their budgets.

Hughes: Those seemed to be in line?

Gerbode: They were all right. The hospital and the medical school should be down where people could get to it, as they have it in Houston. They decided in Houston, wisely, that they would put all their big institutions on a campus. So their hospitals are fairly close to each other, and the medical school is close to the hospitals. Everything is flat so you can drive there easily and buses can get there easily. None of these things can happen up on Parnassus.

Hughes: There has been a longstanding controversy about whether the campus should be at Berkeley.

Gerbode: I know about that.

Hughes: Did you ever have any input into that?

Gerbode: Oh, I heard discussions about it. But the clinical men in San Francisco were too powerful to let that happen.

Hughes: They didn't want to give up their practices?

Gerbode: They just didn't want to move to Berkeley. They didn't want to be close to the campus and the campus activities. You see, as soon as you move over there, then you have the professors of anatomy and biochemistry and all the other basic sciences looking down your throat, and they didn't like that idea. They wanted to be independent of that. So what finally happened is that they moved the various basic science departments to San Francisco. They did just the reverse.

Hughes: Yes, and that caused a lot of trauma, too.

Gerbode: And that caused a lot of trauma, too. But actually the clinical men who were very powerful at that time were the ones who really swayed that.

Hughes: The rationale was that they didn't want to be too close to the basic scientists?

Gerbode: They didn't want to be under close scrutiny. That's why some of the people didn't move to Palo Alto, too, when Stanford moved. This proved to be true, because there are people that went to Stanford, who still are very unhappy about the whole move and what happened.

Hughes: Yet from a purely academic standpoint, I should think that a close association between basic research people and applied scientists, if you want to call them that, could be very fruitful.

Gerbode: It's always held to be very advisable. At Columbia in New York they put the physiologists and the biochemists right across the aisle from the chiefs of departments, thinking there would be cross-fertilization and free communication. They wouldn't even open the door to go across from one side of the building to the other.

Hughes: Why are people like that?

Gerbode: I don't know. I don't know even at Stanford now whether the clinical departments really spend much time with the physiologists or the biochemists. I think they have their own programs, which are quite separate from the clinical programs. I don't think they fertilize each other hardly at all.

Hughes: You mentioned when we were talking about the institute, that there was some problems of the same nature here, in that the hospital people are not very good about attending lectures and seminars given by the research people of the institute. So that seems to be a common characteristic.

Gerbode: It's a common characteristic. See, the people who finally emerge as the leaders in medical departments frequently are not research minded. In places where there are research departments, their institutions and their departments have gained tremendous stature. I'll give you one example. Duke University, where the professor of surgery is David Sabiston, has always had a very fine research program, in which his fellows and residents participate and publish papers. It's an outstanding department, and he's a very good clinical surgeon as well, so he didn't sacrifice anything by spending a lot of

Gerbode: time [on research]. In fact, his clinical program benefited enormously because of the research. But on our campus, the men in charge of clinical programs are completely without any background in research.

Hughes: Do you think that goes back to a fault in their medical education?

Gerbode: Well, I suppose you have to have the research bug in your craw somewhere along the line, and those who have too much of a research bug in their craw, sometimes are not considered as good clinically. So the rare combination of somebody who can do the research and has the desire to do it, and at the same time is a good clinician [is] the best, I think.

The California State Board of Health

Hughes: Another topic is the California State Board of Health.

Gerbode: I suppose I got that [appointment] because of the Crippled Children's Program. We were the first in northern California to be approved by the Crippled Children's Program to do heart surgery in children. I can't quite remember, but I think they gave me an appointment on the State Board of Health to cover that aspect of it.

Hughes: Does that mean that you had to have some state affiliation in order to receive funds from Crippled Children's?

Gerbode: No. I think [it was] because the state was paying for the work, and they had to approve my unit to do the work.

Hughes: So that was just a paper appointment?

Gerbode: Yes.

Visiting Professorships

Hughes: The rather large topic of your visiting professorships.

Gerbode: I found that very interesting, and I could talk about each one individually if you like.

Hughes: Why don't you do that.

St. Bartholomew's Hospital, London, 1949

Gerbode: My first real [foreign] exposure after the war was 1949, when I went to St. Bartholomew's Hospital.

Hughes: We have talked about that one in an earlier interview.

The Royal North Shore Hospital, Melbourne, 1953

Gerbode: Some of the other visiting professorships were in Australia.

Hughes: One was in 1953 at the Royal North Shore Hospital.

Gerbode: Yes, that came about because of Frank Rundle, who was then chief of surgery there, and he had worked with me in our experimental laboratory. He wanted to get research going in Australia on a full-time basis in these various institutions, so he invited me to come down there as a visiting professor. I gave lectures in Melbourne and some other places, and even one TV appearance suggesting that they ought to have full-time [academic] people there. In most of the medical schools in Australia at that time, the clinical positions were [held by] practicing physicians [who were] not very keen on research, in fact not very keen on modern teaching methods. But this has been vastly improved since then.

Hughes: Was that the influence of the British system?

Gerbode: I think quite a bit. They were copying the British consultant methods. But in any event, I went to the North Shore Hospital and gave lectures and made suggestions about their research program, helped Frank Rundle get a full-time clinical research unit started. He got it funded locally himself. He got some young people going, and they are now professors and running that clinical research unit. I had to do a certain number of operations. That was before open heart surgery had gotten started, so I did some closed heart surgery. Some of the patients I operated upon still correspond with me.

Hughes: Had Frank Rundle, because he had been in your lab, already introduced the techniques that you were using?

Gerbode: He was not a cardiac surgeon. He was mainly an idea man who put together concepts, and he finally became dean of the new medical school and put together a whole new medical school in Sydney. He

Hughes: was not very well liked by people, because he was rather blunt. But he got the job done. He was mainly a thyroid surgeon. That was his best operation.

Hughes: So you had a lot of work to do to introduce the new surgical techniques that you were then very much developing.

Gerbode: There were a certain number of closed heart techniques which we had been doing in San Francisco. It was relatively easy to demonstrate those. The people that were assisting me were good surgeons and nice people.

Hughes: And receptive?

Gerbode: They were very receptive. The chairman of the board of trustees was very kind to me and introduced me to people and listened to me. I think I may have made a contribution there.

Hughes: When you did something like this, was it a setback as far as your own research interests were concerned?

Gerbode: No, [the research] would keep on going, because there were young people [in San Francisco] working on the program. I was not gone for very long.

Hughes: You didn't stay a whole year?

Gerbode: No. I stayed almost a year in London. But that was before I had a big research program going involving a lot of different things. I didn't get that started until eight or nine years later.

The Prince Henry Hospital, Sydney, 1963

Gerbode: I went back to Australia [in 1963 to the Prince Henry Hospital]. At that time we had started our open heart surgery program, so I was invited down really to help them in open heart surgery. I took my chief nurse with me, Marilyn Blake, who is still the chief heart surgery nurse in the hospital. I had trained her first in our experimental laboratory. She and Nancy Nagareda came when we did our first dog surgery many years ago. They're both still there in the operating room. They're great. When operating with those girls, I didn't even need to ask for an instrument. It was always in my hand. They could look over and know what I was going to do next.

Hughes: Did you take your family?

Gerbode: I took my wife. They put us up at a very nice little cottage on the campus. The other interesting thing about it, they assigned a pastry cook to cook pastries and bread, so everyday these huge quantities of cookies and cakes and bread would arrive, none of which I eat very much. We were constantly giving all this stuff away to various people in the hospital.

Hughes: The cook was assigned just to you?

Gerbode: Yes. It actually was very interesting to be at the Prince Henry Hospital. At one point during that experience, they invited all the heart surgeons from New Zealand and Australia to come to the hospital for a session on the status of heart surgery. At one point I was doing a blue baby operation, tetralogy of Fallot, before all this illustrious group. After I'd finished the repair on this little girl, there was one last thing I had to do, and that was to tie off a previous Blalock at the left subclavian artery, an anastomosis which had been done previously at a blue baby operation. As I tied this artery, the tie cut it off completely from the aorta, which caused an enormous flooding of blood all over the place, at which point the very kindly and sympathetic surgeons walked out, thinking that this was the end. But I put my finger over this place where the artery had been torn loose, and asked the engineer who had invented the heart-lung machine we were using, a man by the name of [Vivian R.] Ebsary, who had become a millionaire after the war through his engineering work, if he could reduce the body temperature in this little girl. He said, "Yes, I can do that." So I said, "All right, you lower the body temperature down to about twenty degrees, and then I'll see if I can repair this thing." So he did, and in about twenty minutes or so he had the body temperature down to twenty degrees.

Hughes: Your finger was still over the hole?

Gerbode: Still over the hole.

We turned off the machine entirely, and then there was just a little dribble of blood coming out of the hole, because there wasn't any pressure in it, and I was able to see it and sew it. I got the other end and tied that. Then we warmed her up again and started the machine, and in another twenty minutes or a half hour, the temperature was normal, and everything was dry. So then all the visiting firemen came back into the operating room. They were rather amazed that we had gotten out of this terrible situation.

Gerbode: Anyway, that little girl became a very accomplished pianist. She knitted me a sweater sometime after the operation and sent it to me. I used to hear from her. I think she's probably married and has a dozen children at this point. She's a very sweet girl, with a lovely mother.

St. Thomas' Hospital, London, 1958

Hughes: Then you went back to London in 1958 to St. Thomas' [Hospital].

Gerbode: Yes. John Kinmouth, who was a professor of surgery there, asked me to be a visiting professor. So I went back, and I did a few simple operations there and helped them try to get their open heart program going. They were still in the laboratory working with the machines, not on humans. I helped them a little in getting their machinery together and getting organized. But they didn't have anybody who could really take it on. John Kinmouth thought that he might like to do it, but then he really didn't have the time, being chairman of the department, to really work at it very seriously.

Hughes: You mean the whole field of open heart surgery?

Gerbode: Yes. So he confined his activities to peripheral vascular surgery, and it wasn't until later that one of our trainees, Mark Bainbridge, was invited to go there. He then took hold of the program, and now has one of the finest open heart programs in all of England. Mark has trained people. He's done excellent research. He's very highly thought of by the profession at large. And I'm godfather to one of his sons.

Hughes: What sort of heart-lung machine was being used in 1958?

Gerbode: At that time they were using one which we had invented, the so-called Bramson disk oxygenator. But later on everybody pretty much switched to bubble oxygenators, because they were cheaper and easier to put together and run.

Hughes: If I remember correctly, there was a chap at the Hammersmith Hospital, whose name I've forgotten, working on a heart-lung machine?

Gerbode: Yes, Dennis Melrose. He invented a machine which was like a washing machine in a sense. It had big baffles which thrashed blood around, and it was rather traumatic to blood.

- Hughes: Melrose's machine was not being used at the Hammersmith?
- Gerbode: No. He introduced it to the continent, and it was used in East Europe by some units for a while. But when the bubble oxygenators came into being, they quickly switched to those.
- Hughes: How did it come to be that St. Thomas' unit picked up on your machine rather than Melrose's?
- Gerbode: Because we'd already demonstrated that ours was better.

The Free University of West Berlin, 1960

- Hughes: In 1960 you were guest professor at the Free University of West Berlin.
- Gerbode: Yes. Professor [Fritz] Linder was the chairman of the department. That was a very interesting experience. They took good care of me. They gave Mrs. Gerbode and me a nice apartment in town and transportation to get around. I took Miss Blake over with me again to help with the operations. We made a lot of suggestions about how to improve their sterile techniques.
- Hughes: Were theirs not very good?
- Gerbode: They were in an old hospital, and it was difficult in many ways. But I think they accepted some of the things we suggested. I operated quite a bit there. They gave me the worst possible cases to do.
- Hughes: Can you say something about the state of heart surgery in West Germany?
- Gerbode: They were just starting it. They had a fellow running the machine who, as soon as I saw him operating, I knew was not going to be any good at all. He was an American, who kind of grew up in that department in West Berlin. But he was a very opinionated person and not very smart. I very quickly told the professor that he shouldn't be in charge of that part of the work. He was really quite dangerous. So he was, I think, sent back to America. I don't know what happened to him, but I hope he didn't try to run a heart-lung machine when he came back.

Gerbode: I gave a number of lectures there in English. At that time most of the Germans were not very good at English. Now, of course, they all speak good English, because English is the second language in most European schools. So they had to translate some of my little talks. They had simultaneous translation. But it was a very interesting experience to be there and to go into East Berlin, as we did a few times, to the opera and concerts and to see how the Russians in the Unter den Linden, which is their famous street, had built up the front of the buildings to look very impressive. But if you took the road in back of the buildings, they were pretty cheesy looking.

The University of Heidelberg, 1964

Hughes: Then another trip to Germany in 1964, to the University of Heidelberg.

Gerbode: Yes. Professor Linder went to Heidelberg. It was a big decision on his part. I perhaps helped him make that decision as to whether he should stay in West Berlin--they were promising him a new hospital--or whether he should go to Heidelberg. I think Mrs. Linder wanted to stay in West Berlin. She rather liked it. But the challenge of being in Heidelberg, which of course is a famous old university, was a greater one, I felt, and I urged him to take it. I think he went there believing he could change the concept of the German professor, in the sense that the German professor was the only one who really had private patients. He could allocate some patients to somebody else in the department. The old German professor didn't allow anybody to rise up and be great under him. I think when Fritz went there he wanted to change that, and I think he did succeed. He retired from that chair just recently. I think he succeeded in having his assistants in various departments become prominent on their own without too much governance.

Hughes: What were his feelings about the importance of research?

Gerbode: He thought research was very important. He started some research there and got some of his young people to do research, but never on a very vast scale. Most of the contributions from that department were clinical contributions.

Hughes: Was that true of German surgery as a whole, that it was not closely allied with research?

Gerbode: It was a slow transition after the war, because the Germans really were the first country in Europe after the war to realize that research was terribly important. So they allocated a fair amount of money for research to various university centers, and helped young people get started. And this still is true. I think anyone who has a good research concept in Germany can get funded, and also contributions in research are rewarded in the academic ladder, which is very important. They're following the Americans in this respect, because, as we mentioned before, one of the big rewards for research is to promote the person academically, give him a better position in the structure.

The Karolinska Hospital, Stockholm, 1964

Hughes: In 1964, the same year, you were a lecturer and surgeon at the Karolinska Hospital in Stockholm.

Gerbode: Yes. They asked me to go there to be surgeon in residence in the most famous cardiac hospital in Sweden. I went there at the request of Professor Crafoord, who was one of the pioneers in cardiac surgery. I think he brought me there because he wanted to get my ideas about the treatment of tetralogy of Fallot. So I did some cases for him there.

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Gerbode: My good friend Viking Olov Björk was the assistant and was more or less in line to succeed Clarence Crafoord. He had to go back to become professor at Uppsala University first, which he did very successfully, and he always did great research. He always is doing some research and publishing.

Hughes: Crafoord, of course, had a long research tradition.

Gerbode: He had a long research background. He was one of the first to start experiments with an artificial heart-lung machine. They made a disk oxygenator, one of the very first, experimentally, and used it clinically some years after everybody else had gotten into the field. Even in 1949, when I went over there, they had a disk oxygenator they were experimenting with in dogs. They showed it to me in their lab. There were several other groups in Europe at the same time who were doing research on disk oxygenators. But anyway, the group in Stockholm was very kind to me and very hospitable. I gave a few talks, they put me up in a very nice accommodation, and gave me a very nice stipend to be there.

Gerbode: Going back to the Free University of West Berlin, when I went over there, I took a first-class ticket for me and my wife. They said, "We'll pay your transportation." So I submitted my bills for transportation to the bourse at the university, who is the treasurer of the university, and after I had been there a while, she said she wanted to talk to me about my expenses. So I went over to her office. She said, "I don't understand; we invited a professor of pediatrics over from Los Angeles around the same time, and his travel expenses are quite a bit less than yours." I said, "How did he travel?" She said, "I guess he traveled economy." I said, "The thing you have to remember is that surgeons always travel first-class." [laughter] She was so amused at that, she said, "Oh, that's fine."

Hughes: I'd like to hear a little bit about Crafoord as an individual.

Gerbode: Clarence Crafoord did the first coarctation in Europe and one of the first in the world at the same time that Bob Gross did one in Boston. He did other operations in the cardiovascular field, too, not open heart operations originally, but he did patent ductus procedures very early on, and did some closed mitral operations, too. But he was considered one of the great European pioneers, a world pioneer in cardiac surgery. He attended all the big meetings, always had something constructive and useful to say. I think he would probably consider me a friend.

Hughes: Did you ever operate with him?

Gerbode: Yes, when I went there as visiting surgeon at the Karolinska. He either scrubbed with me or was there in the operating room when I was operating.

Hughes: Do you have any comments to make on his surgical technique?

Gerbode: He was very meticulous as a surgeon. Extremely careful about detail. He had an operating nurse who worked with him called Sister Lisbet--that is Elizabeth--and she actually is still there in some capacity working with Viking Björk. She came here a number of years ago on a leave of absence and passed her nurses' examination in the States, so she could come back here sometime if she wanted to and practice nursing. But she has never come back.

Hughes: What was Crafoord like as an individual?

Gerbode: Well, typical Swedish personality. A little brusque and rather opinionated about some things. He was well liked by people.

Hughes: Did he allow the young people in his department to have room to move ahead?

Gerbode: He brought two great surgeons forward. One of them was Ake Senning, who went to Zurich as the professor of surgery and has done an outstanding job there. And the other one was Viking Björk. There were other [members of his team] who got lesser jobs in Sweden. He was one who sponsored young people, no question about it.

Hughes: He was responsible for putting cardiovascular surgery on the map in Sweden, was he not?

Gerbode: Oh yes, he certainly was.

Hughes: Was he a revered name all over Europe?

Gerbode: Yes, and in the world. He was always invited to speak or comment wherever he went to medical meetings. He's still living. You don't need to put this down anywhere, but he called me long distance about eight months ago and wanted me to quickly send my curriculum vitae to him. I don't know why. He wanted it by return mail for some reason. He wanted to propose me for something, I guess, which didn't materialize. [laughter]

Hughes: Another deanship!

Gerbode: No, I think he wanted to suggest that I be made a member of some organization, but apparently it didn't go through, because I haven't heard anything from him since.

Duke University, Durham, North Carolina, 1973

Hughes: We skip nine years, and then in 1973 you were guest professor of surgery at Duke. Was there a reason for the long interval?

Gerbode: I was busy keeping the unit going and training young people. They were building a new hospital [at PMC] during that time, too. There was a lot of work with the architects and planning that needed doing. We were working a lot on postoperative care and the monitoring of patients during that time, because we had the first real computerized monitoring unit in the world. It took a lot of work to get that mounted properly. Jack Osborn and IBM's Jim Beaumont were in charge of that and did a fantastically good job. We also

Gerbode: had another fellow by the name of Bob Eberhart, who was a Ph.D. who worked very hard in that field and helped our program a good deal. He is a biomedical engineer and is now a professor in Texas.

Hughes: Was the computer program off the ground when you were at the Karolinska?

Gerbode: No.

Hughes: What was the reason for the invitation from Duke?

Gerbode: I guess Dave Sabiston had always had people he thought of value come there, because he had a very fine training program, and I guess he liked to have his young men [talk to] people who had done something that he considered valuable in the country. So I spent a lot of time with his residents, just talking about philosophy of surgery and why things were done and who did them, and what was important. I don't think I operated when I was there. I think I just talked and collaborated on some of the operations they were doing.

The University of Alberta at Edmonton, 1974

Hughes: The University of Alberta at Edmonton.

Gerbode: John Callaghan was one of the first fellows I had in training, before we really got our open heart surgery program going. We'd done a lot of experimental work together before we had heart-lung machines. We did some things which now sound rather childish, but we worked very hard in the laboratory and did some cases in the early '50s.

Hughes: Which kind?

Gerbode: Open heart cases. Which were not very successful, I might say. He went up to Edmonton, became chief of cardiac surgery, and finally developed a very fine program. He's now retired, too. Then in 1974 I went to Edmonton as his visiting professor. I didn't operate. I just lectured and observed his cases and talked to the residents. It was a very nice experience. They have a very fine medical school there.

Hughes: Are the Canadians more akin to the American system of training than to the British?

Gerbode: Oh yes, absolutely.

Hughes: We talked about your contributions to these various institutions when you were a guest; do you think you came away with anything from these experiences?

Gerbode: You always gain something in one of these assignments. Attitudes, objectives make an impression on you. I don't think I learned too much from them about the technical aspects. But I learned some things not to do.

Hughes: From seeing it demonstrated?

Gerbode: Yes. In some institutions.

Hughes: Do you have anything more to say about your guest professorships?

Gerbode: No, I think we've covered that subject pretty well.

VII COMMENTS ON MEDICAL/SURGICAL TOPICS

[Interview 10: September 27, 1983]##

More on Research in the Surgical Laboratory of the Old Stanford Medical School

Gerbode: One of the great assets of the old Stanford Medical School on Clay and Webster Streets was the surgical lab, which had been developed by Dr. Holman and Dr. Reichert. We usually had fifteen or twenty animals for experimental surgery and research. I was granted the privilege of having a small room in the laboratory during my assistant residency, and later I spent virtually a whole year doing surgical research in the old laboratory. It was a dirty place, filled with cockroaches and ticks and whatnot. It was virtually impossible to eliminate this hoard of invaders because of the age of the building. They had gone under the rugs and in the walls and, although they had exterminators there on a regular basis, all they could do was keep down the population to a certain extent.

However, the spirit in the laboratory was great, and a great many of my fellows, and of course Dr. Holman and Dr. Reichert, were constantly doing research on animals. We were never really bothered by the antivivisectionists, although a couple of times they tried to send spies up to see if they could find something to complain about. But they were spotted and ushered out of the place quite quickly.

In any event, the first experimental work I did was with Dr. Reichert in studying a rare inflammatory disease of the bowel. This work was published sometime later. Dr. Reichert taught me the necessity for accuracy and the value of good observations. After the war, the first thing I did was try to find a little place in the lab to work. The little room which I had lined with plywood

Gerbode: was occupied by a dermatologist. I quickly escorted him out of the place, since he was not there legally, and I needed to have a place myself. Furthermore, he wasn't doing any research.

So I set up shop again and started doing animal work, the other reason being that I had no patients. The clinical work had long since vanished with having been away for three and a half years. In fact, those of us who'd been away at war were invited to go to the outpatient clinic and help with the minor surgery and with the students. Eventually we were put on the consulting staff in the hospital, so that we could work with residents. But this took a while.

Experimentally-induced Cyanosis

Gerbode: Meanwhile I started doing experiments on the heart and made some dogs cyanotic, which was the second time this had been done historically, and published a few papers on this work.

Hughes: How did you do that?

Gerbode: We transferred the inferior vena cava from the right to the left side. It's kind of a tricky operation, and there weren't many survivors, but the few that did survive were very cyanotic and developed all the signs of chronic cyanosis.

Hughes: You were interested in the cyanosis rather than the transplantation of the vessels?

Gerbode: There were certain congenital anomalies which could be corrected if you could move the major vessels from one side of the heart to the other. This proved to be true later, when there were several operations to correct cyanosis in children which were based upon moving the major vessels from one side of the heart to the other. This little work which I did after the war was cited rather extensively by the Swedes when they gave me an honorary degree. I never thought they would dig that up as an important contribution.

The Heart-Lung Machine

Gerbode: This work went on, and soon afterwards it became apparent that a heart-lung machine would be the thing we should work on, so that we began to assemble the gear necessary to do work with the use of a heart-lung machine. My good friend Jack Gibbon in Philadelphia, who is the father of the heart-lung machine, gave me our first pump, which he took off his shelf in his experimental laboratory. This was a roller pump. Later on, after developing a machine which worked experimentally, we used that pump on quite a few clinical cases.

We had a visitor, a very important faculty member, chief of surgery, University of California, during this early stage. He was curious to see what we were doing about this machine. He shook his head rather dubiously about the whole effort. Subsequently another member of the University of California faculty came over and said that he didn't think that this was going to be nearly as good as using deep hypothermia, because of the fact that we used so much blood. Well, we have used a great deal of blood in this work, but not as much as we did originally, and blood is not the factor anyway.

Hughes: What was the problem with using so much blood?

Gerbode: Filling the heart-lung machine with the blood to prime it, and replacing the blood lost during the operation and postoperatively. However, we were not deterred by this. At this time I got Mr. Bramson to come with us, because I felt that George Clowes [pronounced clues] had shown that a membrane oxygenator was a satisfactory type of oxygenator, and I wanted Mr. Bramson to work with us to develop [it].

Hughes: Where was Clowes working?

Gerbode: He was working at that time at Cleveland. Incidentally, he's a great sailor and a good friend of mine.

In any event, Bram started to work with us to develop an oxygenator, and eventually, after a couple of years, he developed a disk type of oxygenator which I used in about three hundred cases. It proved to be difficult, however, for various reasons, and wasn't the ideal solution to the problem.

Did I say something about this before?

Hughes: You did, but I have a question. You realized quite soon that the disk oxygenator was not the optimal machine, but I believe you said that until the membrane oxygenator was ready, that you were prepared to use--

Gerbode: We had to use something, because the patients were there and needing operations, so we had to use whatever we could get.

Hughes: How many years did that go on, do you think?

Gerbode: About three or four years, I guess.

Norman Shumway: Cold Arrest of the Heart and Heart Transplantation

Gerbode: At the same time we were working on the heart-lung machine, Norm Shumway came into the laboratory. He had been in Minneapolis and had moved to California, believing that he might find a place somewhere. Dr. Holman gave him a spot in the laboratory to work. He started doing animal experimentation, and worked mainly on two things, cold arrest of the heart for open heart surgery, which is a technique which was used extensively and then subsequently was used in combination with cold cardioplegia by injecting potassium solutions into the base of the aorta to stop the heart. Norm did not believe this was as good as it has turned out to be. He thought that he could do just as well with bathing the heart in ice slush. But most people now use ice slush and cold arrest of the heart by injecting cold solutions containing potassium into the base of the aorta and profusing the heart through the coronaries.

The other thing that Norm started working on was cardiac transplantation. He had Richard Lower with him. Richard Lower now is a professor of surgery on the East Coast and a very good one.

Hughes: Now, was heart transplantation in the wind by this time?

Gerbode: No, I'm not aware of it being a big item in any of the other laboratories.

Hughes: This is the early fifties?

Gerbode: Late fifties. So watching Norm, I could see that it was technically feasible to transplant the dog's heart, but the survival rate was extremely low, because the heart was always rejected. So I told

Gerbode: Norm it was a great idea and a great thing to do, but I really thought that it wouldn't work until the rejection phenomenon was controlled one way or the other. This proved to be only partially true. It's been shown repeatedly by surgeons that if they demonstrate the feasibility technically of doing a procedure, then other people come in to show that they can back this up. For example, when Dr. Blalock did the first blue baby operation, he showed that you could operate on blue babies and make them better, and a whole host of cardiologists arose out of almost nowhere, and got interested in the diagnosis of cyanotic heart disease in children. It became a specialty overnight because of that.

The same thing is true of Jack Gibbon. When he demonstrated the feasibility of using the heart-lung machine, there was a great flurry of activity everywhere to produce another type of heart-lung machine that was simpler than the one he had devised.

Hughes: Isn't it true that there was quite a bit of transplantation going on before many inroads had been made in the understanding of rejection?

Gerbode: Yes. The thing that they tried to do, and still do, is tissue typing. In other words, the closer you get to matching the patient's tissue, the better the result is. This has been proven particularly in kidney transplants. But this wasn't the final answer.

Hughes: Was tissue typing well developed when transplantation first began?

Gerbode: No, it wasn't, but as soon as kidney transplants became feasible, then tissue typing became another speciality which arose from nowhere, you might say. Men developed laboratories to study this and apply the techniques to human organ transplantation.

Hughes: There was a drug related component, too.

Gerbode: The drugs came later. Of course, a great deal of research was done to find drugs that would control the immune reaction. So now we have several drugs which are being used. No drug, however is without its bad effects. You can't even take an aspirin without losing something. However, the pluses are much greater than the minuses.

I must say that I was rather pessimistic about the outlook for cardiac transplantation. But Norm was extremely persistent and worked terribly hard, and finally, as everyone knows, did some cardiac transplantations at Stanford after the medical school moved.

Gerbode: The interesting story about Christiaan Barnard, who did the first heart transplant, is that he was visiting Lower's clinic on the East Coast and saw Lower doing cardiac transplantation in animals. He had actually gone there to study kidney transplantation, but when he saw Lower do the cardiac transplant in the animal, he said, "I'm going to try that when I get home." So he went back to South Africa and practiced on a few dogs, all of which I think, did not survive, but he finally did a cardiac transplant, the first in the world, very successfully. But the only reason he did it was that he had watched Lower do it and used the technique which Lower and Shumway had developed.

This was extremely embarrassing to the research effort in the United States, and very quickly after Barnard did that cardiac transplantation successfully, a great deal of money was poured into research in this country.

Hughes: Was that one-upmanship?

Gerbode: Yes. It's like Australia winning the America Cup [in sailing]. Now there's going to be feverish activity to develop a boat to bring it back again. [laughter] Millions more dollars will be spent doing it.

Hughes: But Barnard had some contact with Stanford as well, didn't he?

Gerbode: Well, he did later on, but the first exposure was with Lower. Norm had not done any clinical cases up till that point. As soon as Barnard did one--in fact, he did another one shortly afterwards--then there was such excitement in the world that it made it a lot easier for Shumway to try it on humans, which he then did. And he began to be more successful than anybody.

Hughes: And Lower did the same?

Gerbode: Lower has done the same. Now cardiac transplantation is done in many centers in the world.

Hughes: Were they using any immunosuppressant drugs?

Gerbode: Not in the very beginning. One of our most vocal and widely publicized surgeons in the South said to me once, "There's no use trying to type these hearts or anything like that. Just transplant the heart. That's the only thing to do." Well, all of his patients died, every single one. He's the same person who said, "You don't need to protect the heart. Just clamp the aorta and do the operation."

Gerbode: Let the heart quiet down. You've just got to be fast." But then later on he described what is called the "stone heart," [which] is simply a heart that's been made dead from ischemia, in other words, rigor mortis of the heart. But he didn't recognize it as such.

Hughes: Sounds like an unusual technique.

Gerbode: Well, he's got a tremendous ego and he thinks he can say and do anything. Actually his approach has been very successful with doctors and [patients], because his clinic is flooded with patients all the time.

Hughes: Because of the bravado?

Gerbode: Yes. And he's a good surgeon.

Hughes: But I should think the mortality rate would put people off.

Gerbode: It's not bad.

Hughes: Now.

Gerbode: Now [that] he's adopted everybody else's technique.

Dieners

Gerbode: There was a fellow by the name of John Kratch, a German, who ran that surgical laboratory [at the Institutes of Medical Sciences] for years and years. He was just an absolute slave to the people who were doing the research there. He could set up almost any experiment for you. Later on he trained another Jewish German refugee by the name of Ludwig, and Ludwig carried on when John got too old. Ludwig was equally good. Ludwig then trained Madelaine Petillo, who is a fantastic French girl, and Don Toy, who is Chinese. Those two carried the laboratory spirit on until the early '70s with our new lab.

Hughes: Is it just chance that all these people are foreign?

Gerbode: It's hard to find people to do this kind of work. We have Americans now doing experimental surgery in all these labs.

Hughes: But in most cases these people merely set up the operation. They didn't actually participate, did they?

Gerbode: In some cases [in other laboratories] they would conduct the experiment after it had been established. We didn't do it that way. We did all of our own experiments, but they would set up the animal and get the equipment ready and prepare blood if it were necessary.

Hughes: When the diener did the experimental work, would that be noted in the paper?

Gerbode: Sometimes, sometimes not. It just depends on the person. We always used summer students in the laboratory, and some of them have gone on to have quite distinguished careers. A professor of surgery at Davis was one of our summer students. Actually Lower was a summer student, too, way back. We had another summer student with a degree in biomedical engineering from Stanford; he went to medical school at Cornell, and by the time he got established there he could do better research than the members of the regular department, so the professor gave him a lab.

The Artificial Heart*

Hughes: Would you comment on the artificial heart?

Gerbode: The National Institutes of Health decided that there was going to be a great need for the artificial heart in the future, so they funded [seven or eight] centers to develop the artificial heart, either a left heart or a whole heart. The biggest funding went to Kolff in Salt Lake. A lot of the money was given to him because he'd done such a good job with developing artificial kidneys.

Don Hill, who was then one of my assistants, got one of the grants to develop a left heart bypass which was [a device] to take over the work of the left heart when it was failing. He worked in the lab here in San Francisco with a company called Thorotek, and got to the point where they were doing pretty well with experimental animals. Then Thorotek, being a private company in which Dr. Hill

*See the session recorded on 4/23/84, pp. 341-342.

Gerbode: was a major investor, wanted to do more testing privately and to use our laboratories. Well, quite a few of us didn't think [it] was a proper use of the laboratory for a private company to come in and use the lab for their own economic benefit. So they finally set up their own shop in Berkeley, and they now have a rather big lab over there where they do testing of various devices. I believe they still have a government contract to work on the left heart bypass.

Hughes: How would a left heart bypass be used?

Gerbode: It has to have the same arrangement that the artificial heart has at the present time. It's a pump activated by air or fluid, which squeezes a small chamber containing blood, like a small heart. You squeeze it from the outside and make it pump that way, and that synchronized with the electrocardiogram. But then it requires a tube coming out of the chest, which is the problem with the total heart as well, as was demonstrated by the man in Salt Lake [Barney Clark who received an artificial heart in 1983]. So the left heart bypass is conceived mainly to take over a failing left ventricle as a temporary adjunct, until that left heart recovers. It hasn't been used clinically very much. There are a few places that have tried it.

Hughes: It's used in conjunction with the human heart.

Gerbode: Yes, it's attached to the heart, and functions like a left heart.

Hughes: In developing these devices, there seem to be two schools of thought, one school being the anatomical school, where the aim is to make the mechanical device as close to nature as possible, and the other school, which tries to make an efficient device, regardless of whether it mimics nature or not. In developing these artificial hearts, which way has it gone?

Gerbode: The artificial heart is a combination of artificial valves, which usually are mechanical valves, although some use pig valves. The rest of the device is pure mechanics and electricity.

Hughes: So it looks nothing like the human heart.

Gerbode: It is like the human heart in that it is designed to pump the same amount of blood as the human heart would. It has to, to be a replacement.

Hughes: Does that mean that each artificial heart has to be tailor-made to the individual recipient?

- Gerbode: No. We know pretty well the spectrum of volume which the heart needs to pump for an adult. If you put a heart in within that sort of volume load or output, it'll work all right.
- Hughes: What do you think are the chances of developing an artificial heart that really will sustain life for many years?
- Gerbode: I think it will eventually come, but the main problem is how to keep it running without having a tube come out the chest wall. Of course they're trying to use nuclear energy to do this, but the heat exchange involved with this is something that hasn't been solved yet.

Targeted vs. Basic Research*

- Hughes: You mentioned that NIH made a decision at some point to fund the artificial heart. How does NIH decide that now is the time to support some new procedure?
- Gerbode: They bring up various questions like this periodically. They usually have a panel of experts come to Washington; they sit around and discuss it, and they say, what is the most important thing we should be spending our money on in the country? [NIH] usually listen to the panel. Some of the conclusions are presented to Congress. One of the best ways to get a certain kind of research started is to have a congressman or a president get one of these diseases. In the Kennedy family there was a child born with a mental disease, so when Kennedy was president there was a great deal more money put into research in mental health. When Eisenhower got a stroke, the same thing happened. They had to study arteriosclerosis more, so money was put into arteriosclerosis. And this happened when Lyndon Johnson got a coronary. No objection to that. You have to have some reason for doing something.
- Hughes: Some people object, though, to this extremely targeted research, I think on the principle that sometimes a very goal oriented type of funding isn't very successful.
- Gerbode: I think both have to be done. I think targeted research is necessary. I think pure research, which doesn't have a target but is involved with basic problems of biology, will periodically produce perhaps even

*See the session recorded on 4/23/84, pp. 342-344.

Gerbode: greater things. But it takes a long time for it to rise to the surface. You take the whole business of antibiotics. After [Sir Alexander] Fleming discovered penicillin, there was enormous targeted research in antibiotics. Now we have dozens of antibiotics, all targeted research, but mainly done by drug companies, because there's so much money involved.

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Gerbode: Some big company or individual will profit by the research eventually. Eventually the public has to profit. Nobody will profit unless some good is being done. If somebody knows how to dig a better hole to find oil, he should be compensated for it. There always is an argument going on in higher circles about so-called basic research versus targeted research, but I think there's a great place for both.

Our research at the present time in my institute is mainly concerned with immunology. We're targeting on the rejection phenomenon and on how to juggle the body's physiological reactions so that we can control the rejection phenomenon better.

Hughes: And you chose that to target because of its importance?

Gerbode: I chose it because there is a great deal of interest in immunology so there's money available to do the research, and I think it's one of the big frontiers. We also have the laboratories and the people who can do it.

Hughes: Good reasons.

Gerbode: There's no use our spending our present major effort on developing the heart-lung machine. There are things which we can use the heart-lung machine for in research which will add to our knowledge about other things. This is being done in various places in the world.

Legal and Ethical Aspects of Medicine*

The Legal Aspect

Gerbode: Right now this country is litigiously minded, because we've got so many hungry lawyers who get vast sums of money for winning a case, that you have to explain every serious operation to the

Gerbode: patient and tell [him] this might happen, that might happen, and document the explanation. For example, here in San Francisco recently one of the heart surgeons was sued for over a million dollars and lost the suit because he didn't tell the patient that there might be a certain complication. The complication occurred, and he was sued. You can't, obviously, tell [patients] every possible complication; otherwise nobody would want to have an operation. But you have to more or less cover the major ones.

The whole question of the medical-legal aspects of the practice of medicine is a mess at the present time. No good surgeon can practice without being sued.

Hughes: How recent a phenomenon is this?

Gerbode: It's been developing for twenty years. The main thing is that contingency fee which lawyers get. They'll say, "Sure, we'll sue for a million dollars, and my fee is 40 percent of whatever we get, and you have to pay the expenses of everything as we go along." One of our famous lawyers here in San Francisco has his wall decorated with facsimile copies of the checks he's received. Instead of hanging up trophies shot in Africa or something, he has framed copies of checks he's received for medical malpractice.

Hughes: How has this all affected innovative surgery?

Gerbode: It makes medicine much more expensive, because you have to do so many tests to be sure somebody won't sue you because you haven't done a test. You take more xrays; you do more laboratory investigations. You have to be extremely careful if you're doing an operation that you don't do something that is even the slightest bit out of common practice. It's all right if it works, but if it doesn't work you're in trouble.

The Ethical Aspect

Hughes: I'm interested in the development of the various ethical procedures that now limit medical practice in virtually all fields. I was wondering if you could remember when things began to tighten up. Was it right after the war?

Gerbode: Yes, soon after the war, I think. There's been a crescendo development.

Hughes: Were the Nuremberg trials something that the medical profession really took note of and said, we've got to adopt some of these regulations into our own practice?

Gerbode: Well, we had to be more careful. That certainly is true.

Hughes: But at that point [1946] it was really up to the individual. The government hadn't stepped in.

Gerbode: That's right. This was up to the individual and the courts.

Hughes: Prior to that it had been very much up to the individual physician how much or how little he informed the patient, is that not true?

Gerbode: Right. In many instances they didn't inform [patients] very much of anything, and in Europe they still don't. In England, for example, the contingency fee for lawyers is against the law, and it's against the law in Canada, too. Therefore malpractice insurance is very low. So [if] the patient needs to have a stomach operation, he believes the doctor is going to do a good job, because he's in a good hospital and he's got a good name, but the doctor doesn't tell him everything that might happen.

Hughes: In the prewar days were patient consent forms required?

Gerbode: Not generally.

Hughes: The whole structure of peer review and the labyrinthian contortions that the government now requires a physician to go through is a relatively recent development, is it not--the late '60s?

Gerbode: It developed in the '50s, too.

Hughes: Do you remember what the provocation was?

Gerbode: I think the provocation came because the lawyers found they could influence the juries to make favorable verdicts, and they worked very hard on it because they were making so much money from it.

Malpractice Suits*

Hughes: Have you ever been involved in a malpractice suit?

*See the session recorded on 7/17/84, pp. 445-455, for an extensive discussion of malpractice and related issues, including the celebrated Salgo case.

Gerbode: Oh sure. I've never lost one, but I've been sued three times. A lot of people sue thinking that maybe you'll get scared and not want publicity and try to settle, just to avoid the difficulty of going to court. But if people want to sue me, they're in for a tough battle. [laughter] Two [suits] were dropped. Actually, they were really just nonsense suits to try to get me to settle.

One suit, the Salgo case, we lost in the first round, a suit in which my involvement was simply to write a request for a procedure to be done. I didn't do the procedure. But during the procedure a bad result came about. The doctrine of res ipse loquator applied. In other words, the fact speaks for itself. It was a very fundamental suit, and it's a famous case. It was printed word for word in the Journal of the American Medical Association. It involved a question of residency training and writing orders and having residents do things by order. The appellate court threw the case out. They said it was nonsense.

Hughes: Was the suit against you?

Gerbode: Against me and Stanford University, the xray department, and several of the men who were working as residents at the time.

Hughes: Who supposedly had not carried out their--

Gerbode: They tried to find that [the residents] had done the test erroneously, but they did not do the test erroneously. It's just that the patient was so badly off that he had a bad result.

The Legal Aspect (Continued)

Hughes: I don't think patients in general are well-served by having such a lopsided system that seems to be so heavily in favor of the legal people.

Gerbode: It's really bad. It interferes with everything you do everyday. You have to be so careful that you probably sometimes don't deliver the first-class medicine the patient should have.

Hughes: It's not just the medical profession that's affected either; look at the hassle that the drug industry has to go through and the consequent cost of their products.

Gerbode: The whole product business is in a state of chaos because the lawyers found they could make pots of money, too, by suing people making instruments and devices.

Hughes: How can the pendulum be forced back?

Gerbode: I think if they just struck out the contingency fee, that would stop 90 percent of it. But you know the reason they can't do it? Because all the judges and people involved are lawyers, too.

Medical Ethics Committees

Hughes: A quick question about medical ethics. Did you ever have any role, either on a national level or in the hospital here, in defining bioethical procedures?

Gerbode: No, I didn't. I wasn't even on the committees.

Hughes: Was that just chance?

Gerbode: I suppose so. Most of these things were determined on a national level, and then you'd more or less follow the established protocols in your local hospital.

Hughes: What is the procedure at Presbyterian?

Gerbode: We advocate informed consent. In other words, we advocate that the medical or surgical doctor should explain to the patient the nature of his illness and what kind of treatment is planned or rendered, with the possibilities of complications.

Hughes: So you don't have to make a presentation to a committee when you're starting off on a new procedure?

Gerbode: Yes, you do. We have a committee to whom you have to submit any new device or radical new procedure. It is called the committee on human experimentation [and is] composed of doctors, research people, and trustees. It shouldn't be called that because it sounds bad.

Hughes: They're all in-house people?

Gerbode: In-house people, but one or two outsiders. Every hospital has one of these committees now.

Hughes: All of those committees are following the NIH guidelines?

Gerbode: More or less. The NIH guidelines influence their decisions.

Hughes: But the way you just phrased it, it made me think that there is a bit of leeway in interpretation. From hospital to hospital there might be slight variations?

Gerbode: Yes, some hospitals are extremely strict, and others are lenient. It depends on their committee. However, it gives the doctor a very good basis for trying or doing something, if the committee has approved it.

Hughes: What is the reputation of Presbyterian on that scale?

Gerbode: They're very reasonable about it. We have a lot of research going, so that the problems do come up fairly frequently, and they have to be fairly knowledgeable and intelligent about it.

Hughes: You mentioned the surgeon from the South who will remain nameless and his rather unusual ideas. How did he get away with that in light of human use committees?

Gerbode: I once had a patient of his in whom one of his valves failed. I had to operate upon this patient in the middle of the night and put another valve in. I called [the surgeon] up and told him about it. I said, "You'd better be prepared, because this fellow I think may want to sue you." He said, "Well, he'll just have to stand in line."

Hughes: Well, that's a different attitude!

Research vs. Patient Benefit

Hughes: From talking to you all these sessions, I know that research is very dear to your heart, and I believe that taking care of your patients is as well. At times those two aspects are in conflict. I mean, the research oriented person is trying to break through to new information. The physician is looking after his patients to the best of his ability. Have you ever had problems in reconciling those two?

Gerbode: No, I don't think so. If you're on a frontier, as we were in the very beginning, you simply would sit down with the family and discuss the whole thing. Here are the possibilities. You can do this or that or the other thing, or do nothing. There are very good statistics on virtually every disease at the present time, so that you can say the life expectancy under certain circumstances with this disease is this. And it might be this, if we try to do something. I never thought I was really experimenting on patients. I was always applying something which I thought was ready to be applied to human beings, because it might be better than what was available.

Hughes: Did you ever operate with the idea of providing a technique which would benefit patients in general but perhaps not the specific patient that you were operating upon?

Gerbode: Well, I suppose so. I'd have difficulty finding the exact operation where this might apply. The whole question of developing our monitoring system, using the computer, that was new when we started it, and we obviously were testing and experimenting on patients every minute. But there wasn't any risk involved. We were simply measuring something. We found out which things we could measure the best, and which would give us the best information for a patient or his disease.

Hughes: In those early days with the monitoring system, were you backing up the computer monitoring with the old methods of doing the testing to check the computer methods out?

Gerbode: Yes, we did that. But you know, there were so many exciting things about it, to be able to sit there or have the nurse sit there and read off these data on the patients and make a decision. Previously they had to go through a chart full of papers and scribbled notes to make the decision. The nurse would put lab reports which were stuck on little bits of paper in the chart somewhere, and you'd have to go through the chart to find them. After we developed this [computer monitoring] technique, the laboratory put them right in the patient's computer record, so the nurse pushed a button and there it all was right in front of her. Furthermore, at the end of everyday there was a printout of all that data, which was then put in the patient's chart.

Hughes: Does every hospital use computerized monitoring now?

Gerbode: Oh no. It's expensive, and it's more applicable to hospitals that are doing rather complicated work.

The Doctor-Patient Relationship

- Hughes: Patient relationships. You spoke of having to keep a certain distance from patients, although you didn't put it quite that way. I was wondering what type of relationship you sought to establish?
- Gerbode: I always tried to seek a relationship in which the patient's family or the patient, or both, would understand what I was trying to do.
- Hughes: As simple as that.
- Gerbode: Yes. I would always try to tell them that other doctors would be helping, so that they wouldn't see somebody working on the patient and not understand why he was there.
- Hughes: Did you ever find it difficult not to become personally involved? I'm thinking particularly of the early surgery on children.
- Gerbode: No. The children's parents were virtually all very receptive to explanation and the desire to do what was right for the child to make the child better. I think that certainly you have to develop an attitude in which patients [and] the relatives trust you. I think mostly they thought I was always honest, not given to falsehoods.

Patient Referral

- Hughes: You spoke of having problems in the early days concerning patient referral, and that your practice had been pretty much taken over by the people that didn't go off to war. But after that, when you began to make your name in surgery, was it by virtue of your name that you received most of your patient referrals?
- Gerbode: No, I think we got a lot of patients because we demonstrated that we could treat them successfully. One reason that I could treat them so successfully at that time and was ahead of a great many people was because I'd had so many years in the experimental laboratory, where I'd been trying out techniques repeatedly on animals. People who are against animal experimentation just don't know what's going on in the world.

Medical Uncertainty

Hughes: Medicine, and of course I include in that surgery, is by scientific standards a very uncertain field. There are so many aspects to medicine that can't be properly measured. In the case of surgery, one often doesn't know exactly what one is going to find when the initial incision is made. How did you cope with this uncertainty?

Gerbode: I guess it's a matter of your training. Surgery is an art as well as a science. You can apply your knowledge in basic training to any situation when it is presented to you, and you try to solve the problem based on your knowledge and your ability. Oh, there are always surprises. But you cope with the surprises with the training and the equipment and the knowledge you have. And if it's very unusual, you publish it so that other people will be aware that this [problem] might occur.

Hughes: A book on organ transplantation by an historian of medicine and a sociologist of medicine describes transplant surgeons as having "the courage to fail."* The point is that in order to push a field ahead, you have to be willing to have some setbacks. Would you characterize yourself in that way?

Gerbode: I think yes, because the whole field of open heart surgery was very tenuous in the beginning. The first time you looked inside a living heart was quite different from looking at it in the autopsy room or in a pickled state in the laboratory. So you had to learn all these things, and [there were] many surprises. You had to cope with these surprises based on your ability and your knowledge.

Hughes: Were the surprises functional as well as anatomical?

Gerbode: Oh yes. Many times you'd operate on a heart and not know for sure what exactly you were going to find.

New Diagnostic Techniques in Cardiology

Hughes: I was wondering when radioactive imaging came into relatively common use and what kind of impact it made on diagnosis?

*Renée C. Fox and Judith P. Swazey, The Courage to Fail: A Social View of Organ Transplants and Dialysis, Chicago: University of Chicago Press, 2nd ed., 1978.

- Gerbode: It's just really being applied now. It's relatively new, and it certainly is another tool to show how various parts of the heart function. It's very useful in determining how much damage has occurred from a myocardial infarction, a so-called heart attack. You can also use imaging to determine how well the heart is contracting and performing. There are a whole host of tests that are coming up which are going to revolutionize [diagnosis]. Nuclear magnetic resonance, for example, is going to make certain diagnoses much more accurate.
- Hughes: Because you can visualize exactly what's going on.
- Gerbode: Particularly inside the skull. You can find out all kinds of things about the brain with NMR that you can't find out so well with other techniques, and you don't have to inject anything.
- Hughes: So there's no risk.
- Gerbode: No risk at all.
- Hughes: But with radioisotope imaging--
- Gerbode: There is a little risk, but it's not very much. You have to inject something.
- Hughes: Is it technetium that's mainly used?
- Gerbode: Technetium is one.
- Hughes: Now, those techniques would be handled by a cardiologist?
- Gerbode: Yes, that's all cardiology. The surgeons don't get involved with this, except they can ask for a test [to] be done.
- Hughes: Would you be required to read the test?
- Gerbode: Not necessarily. But a good surgeon will read the test, because [he] can decide better whether [he] can cope with it surgically if [he's] seen how the organ is performing.
- Hughes: As you may know, the Anger scintillation camera was developed at U.C. Berkeley by Hal Anger. Did you ever use one or have any contact with one?
- Gerbode: They have used them in cardiology here. I didn't have any particular use for them myself.

Teaching

Hughes: Has teaching been an important part of your career?

Gerbode: I like to teach. When I was full-time faculty in the medical school, I really enjoyed teaching. I enjoyed lecturing. I enjoyed bedside teaching, the Oslerian method of teaching. I guess I've done my share of it. But I think the best thing I did in teaching was to train these young surgeons to do heart surgery. As I mentioned before, I had eighty-six fellows in my program over the years, and sixty-three of them currently are very active in heart surgery in their countries [of origin] or in this country.

Hughes: That's quite a record. What would you say is your most important contribution to surgery?

Gerbode: I think training these young men.

VIII PHILANTHROPY, FAMILY AND RECREATION

[Interview 11: October 3, 1983]##

The Wallace Alexander Gerbode Foundation

Gerbode: My oldest son, Wallace Alexander, was a sophomore at Stanford when he was killed in an automobile accident near Stanford. This was a very sad and shocking event in our lives. In thinking about it afterwards, we thought that we might establish a foundation in his name. This then would give us an opportunity to do things in the community and at the same time honor him. So we established the foundation on that basis. The foundation was made to benefit projects in the Bay Area and in Hawaii. So ever since then we've made contributions to the Nature Conservancy, civil rights, minorities, music and drama organizations; never to fellowships or scholarships, and very little for bricks and mortar. The idea was to start programs in the community which couldn't be started or funded initially from civic funds, to get them going, and if they had survival strength, then the community would pick them up. We've started a great many things in the Bay Area and in Hawaii which have been taken up by the communities or by other larger agencies. I could furnish you with a long list of them, but you could get them from the [foundation] office if you'd like.

We made a modest contribution to the foundation to start it, and since then we've added money to it and invested the money, so that what was rather modest in the beginning now has become a fairly important foundation in San Francisco.

Hughes: When you say "we," you mean your wife and you.

Gerbode: Yes, and various members of the family. Actually my wife and I made the major contributions to it. The children haven't really made contributions to it to any large extent. We have a foundation board, upon which one of my sons and one of my daughters sit, and we discuss requests for funds on a quarterly basis.

We have an office which is run by a full-time administrator [Thomas C. Layton] and a secretary. Whenever you start giving away money, of course, you have numerous requests for the money, and so this requires someone to sort these things out. Many of the requests are not in our field of interest, and therefore they're disqualified on that basis.

Hughes: In reading the 1982 annual report, the list of interests of the foundation fell into the categories of art, education, environment, and urban affairs.

Gerbode: Yes, that's pretty much it.

Hughes: Why those fields particularly?

Gerbode: Because those were the things that we were interested in as citizens in the community. I suppose it's just an extension of what we were interested in. Having the foundation gave us an opportunity to do it on a different level.

Hughes: I recognized all of the names on the board of directors [Frank L.A. Gerbode, Frank Albert Gerbode, Maryanna Gerbode Shaw], except for Charles [M.] Stockholm.

Gerbode: Charles Stockholm is a vice president of Crocker Bank, an old friend. I've known him ever since he was a small boy. His father built our house on Divisadero Street. His father was a very successful contractor, and his grandfather was, too. In fact, his grandfather built many of the houses in Pacific Heights.

Hughes: And you asked him to join the board because of his--

Gerbode: Well, because he's a businessman and a banker. There is money involved and businesses involved, so he can get a lot of information for us through his bank that we couldn't get as individuals.

Hughes: Can you give me an idea of what the review procedure is for an application?

Gerbode: The applications are sent to the office, and they're reviewed by the office staff. If they fall in our sphere of interest, then they are considered at a board meeting, which occurs three or four times a year. An agenda is made up; all the materials sent in to recommend the grant are included in the agenda but are reviewed by the board well in advance of the meeting.

Hughes: Is it the responsibility of the person or the organization applying to supply all the necessary information?

Gerbode: Yes.

Hughes: Is there sufficient information in the application itself to make a decision?

Gerbode: If there isn't enough [information], we'll ask for it. For example, sometimes they don't send a budget; they don't say how they want to spend their money, so then we request a budget and a description of how they're going to spend their money. The grants are for one year, sometimes two or three years, depending on what is involved in the program.

We also occasionally will make a grant which is actually a loan to get something going. People can't borrow money to get things started, so once in a while we'll grant an agency or an organization enough money to get them going, hoping that they will be able to generate enough finance to pay us back. This happens once in a while. Frequently they can't repay the grant.

Hughes: Would the application be made for a loan?

Gerbode: They don't call it a loan, but they'll say they hope to retain enough earnings to repay part of this money or something like that. So it is really a loan.

Hughes: How do you make the choice amongst the applications?

Gerbode: We have a certain amount of money we can spend. We have a budget for the year. We look over every application critically, both as to the objective of the application and the budget that they've submitted. Occasionally we will give them what they request, but more often we'll say that we can't give you all you request; we'll give you a certain amount. If we gave what everybody wanted, there wouldn't be enough money to go around. So we'll give them 50 or 20 percent or 100 percent, depending on the merits of the application.

Gerbode: The other thing that happens very often is that they apply to several other foundations at the same time, and if they are all granted what is requested, then they have more money than they need. So it's up to our administration to find out from other foundations how much they intend to give to a particular venture.

Hughes: Is there considerable cooperation among foundations?

Gerbode: Yes. The foundation directors know each other very well, and they're very knowledgeable about things in the community that require private funding, and they discuss [them]. We encourage this. [The foundation directors] belong to several organizations where they meet and discuss voluntary efforts like this.

In the Hawaiian Islands we've played a different role occasionally, because the Hawaiian agencies are not as aggressive in looking up things to do with their money. In the past they were apt to give the money according to their legal requirements. In other words, you're supposed to give 5 percent annually of the value of your portfolio or your assets, and very often they [would] pick out the ordinary things, like Boy Scouts and time-honored things, just to satisfy the requirements. We've tried in the Islands to pick out [organizations] which require help, and by giving [them] money, we've encouraged the Hawaiian foundations to help, too, and they've done it. This is true not only on Oahu, but it's true on Maui and Kauai. Somebody on the outside has to make a little contribution to cause attention and popularity.

Hughes: Do you remember what some of the first awards were in the early days?

Gerbode: I think probably some of the first awards were Planned Parenthood and things like the Nature Conservancy. We were very active in the various agencies that are trying to stop development of areas that might be better [used by] the public at large.

Hughes: In San Francisco specifically?

Gerbode: Well, Marin County. For example there's a big valley over there which was going to be developed into a whole bunch of condominiums by an oil company. The Nature Conservancy and the people of Marin County were against this. They wanted it to be a public park. So the Nature Conservancy got together a number of people and what happened was that we bought this piece of land from the oil company at the same price they had paid for it and then gave it to [the] Nature Conservancy, who then gave it to the government. It's now a public park.

- Hughes: This is the piece at the Marin headlands, called the Gerbode Preserve?
- Gerbode: Yes.
- Hughes: The Nature Conservancy seems to be a particular love of yours, at least if dollars speak--
- Gerbode: It goes way back to when they first began to do this sort of thing. We were among the first to get interested in the techniques of converting private land to public use on a fair and equitable basis. The people working in this area are very fine people. They have the best interests of the public at large at heart, and I think they've done a very good job.
- Hughes: Would you say that the foundation has changed emphasis since it was founded?
- Gerbode: It's broadened its field quite a good deal. We've gotten into supporting various activities at Stanford and the University of California. For example, in the law school at Stanford there are several projects which couldn't be funded out of university funds, but could be funded privately, and we've helped them do that. Those are projects which involve activities in the community by students or professors.
- Hughes: Is this broadening the result of having more money to spend, or is it a change in philosophy?
- Gerbode: No. Usually what happens is that an organization like this is in everybody's focus, so everybody that wants money for any project will try to get it from a foundation. And some of the things that are requested are really worth supporting. That's how it comes about.
- Hughes: So the change in emphasis really is external--the fact that you have a broader range of applications rather than being due to an intrinsic change in the board itself.
- Gerbode: Yes. There are more applications all the time. Particularly now since so many government projects have been cut back and there's less money available for new projects on a city, state, or federal level, so that there is much more demand on private foundations.
- Hughes: Mr. Layton made what I thought was a very interesting comment. He said something to the effect that he believed the foundation was more liberal in outlook than the board of directors itself.

Gerbode: You mean to say that what he's trying to do is more liberal than what--

Hughes: No, he wasn't referring to himself. He was trying to say that the foundation itself takes on a character that is somewhat independent of each individual member of the board of directors, that there is a foundation identity which is above and beyond that of the individuals making up the board.

Gerbode: That may be true. It may be wishful thinking on his part, too. Actually, every grant is discussed at some length by all the board and voted on.

Hughes: I can see that you would perhaps be induced to move in certain directions by the very nature of the types of grants that organizations request.

Gerbode: Oh, there's no question that applications make things visible that we wouldn't otherwise see. We obviously can't be aware of every organization that is starting something. For example, I never heard of the Pickle Family Circus before they put in an application. When we got the application and began to look into it, it turned out to be quite a good thing to support. We probably were largely responsible for getting it started. I don't know whether that could be considered a liberal thing, but we certainly made it more visible.

Hughes: I would think that the coloration would become most obvious in the category of urban affairs.

Gerbode: Well, there are several instances where the people on Kauai wanted to do something or stop something, but they couldn't do it very well because they were not very knowledgeable about how to go about it. For example, right now there's a very embarrassing situation for a group of developers who decided that they could put up a hotel and a large collection of condominiums on a certain acreage near Lihue without getting all the proper permits. They thought because they had so much money and had bought the land that they could just go ahead and do it. Well, the people didn't like this on Kauai. So they formed a citizens' group to object to it, and it was actually brought to the courts. One court ruled that their development was legitimate, and another court ruled that it was not legitimate. The citizens were doing this without very much legal help, so we gave them enough money so that they could at least discuss it on a proper intellectual and legal basis. We're not trying to influence their decision--

Hughes: No, but to give them the tools.

Gerbode: Give them the tools to make an intelligent decision. So actually this whole project is stopped. There's a half-built hotel and some condominiums that were finished and sold and some people living in them; quite a few others are half-built. It's a mess. But the fact remains that they should not have gone ahead without getting the proper building permits and permission. They thought it was such a sleepy little island they could get away without going through all the formalities. Well, the people finally woke up.

We try not to get involved in politics, because that's a very difficult thing. But some of the things border on politics, because a lot of things that happen in a community are based on political activity.

Hughes: Would the politics of an issue keep you away from it?

Gerbode: Not necessarily. I think the issue itself is what we would consider. Whether it was involved with politics would be of secondary consideration. But sometimes organizations ask for money when we feel they could do it themselves. For example, the legal profession in the Bay Area has occasionally asked for substantial funds to start things like a legal aid society or pay for lawyers to defend people who don't have money. We've helped some of these things, but actually it's my belief that the lawyers don't give enough money to charitable events. They're very parsimonious when it comes to contributions. It seems to me that they ought to be doing more of it themselves, rather than going out for other organizations. I don't know of any doctors that have gone around passing the hat for various things they do like that.

Hughes: Once you award a grant, how much leeway does the organization receiving the grant have in the way the money is spent?

Gerbode: They're supposed to follow the outline which they've submitted for the grant. I think that our executive director would watch these developments, and if they are obviously doing something entirely different, he'd say something about it.

Hughes: How does he watch?

Gerbode: We call up and drop in on them once in a while. Not like a big brother looking over their shoulder, but more because we're interested in what their project is supposed to be doing.

Hughes: It's an informal follow-up?

Gerbode: It's an informal follow-up.

Hughes: Do you ever solicit applications?

Gerbode: I wouldn't say that we never solicit applications. Occasionally we will see something that needs a little boost and we'll suggest that we might review an application. That's been done particularly in the Hawaiian Islands, not so much locally in San Francisco.

Hughes: I know there are geographical limits to the foundation.

Gerbode: We're constantly being asked to give money for national things. For example, we've had quite a few requests on a national level for money to legalize abortions, but we try to avoid getting involved in national things, because there are too many of them and it's very hard to monitor them. If we ship money off to New York, we would never see it again. We can do a much better job by supporting things in the Bay Area and in Hawaii, because we are familiar with the cities and what else is going on.

Hughes: Does the fact that you were asked on a national level to support abortion mean that the foundation has quite a name for its work with Planned Parenthood?

Gerbode: They know that we have supported Planned Parenthood from the very beginning. Mrs. Gerbode was on the first board of Planned Parenthood in San Francisco, when they had a little place out in the Sunset District and it was very unpopular to even be associated with such a "bad" thing. But we've always been in favor of the right of women to have a child or not to have a child.

Hughes: Was that when the foundation was first founded?

Gerbode: Oh, even before the foundation we made contributions to Planned Parenthood. Obviously we're not a Catholic family. But I know some Catholics who are very much in favor of Planned Parenthood.

Hughes: They're the sensible ones.

Gerbode: I think they'll probably go to heaven anyway! Maybe even quicker!

Hughes: Can you give me a rough estimate of how many applications you receive in a year?

Gerbode: You'd better ask Tom Layton. Every meeting we have, which is quarterly, we'll review perhaps twenty new applications, but we will also have turned down twenty or thirty automatically.

- Hughes: The rejection is simply on the basis of the interests of the foundation?
- Gerbode: No, rejection is sometimes based on the fact that we know another agency is going to take care of them.
- Hughes: I didn't phrase that question very well. I was meaning, before the application even gets to the board of directors, the staff would reject some applications?
- Gerbode: Oh yes. We reject perhaps twenty three or four times a year; maybe fifty or sixty are rejected by the staff. We always have a list of the rejections that are made by the staff, and occasionally we'll ask for a review of one of those rejected applications, if we think that maybe it should be given further consideration by the board. It doesn't happen very often.
- Hughes: Do you ever require an organization to match funds?
- Gerbode: Yes, that's quite common.
- Hughes: Have you always done that?
- Gerbode: It happens automatically. When the people submit an application, they say, we have ten thousand dollars; we need twenty. That's matching funds.
- Hughes: I know Tom Layton is director, and I spoke to a woman assistant. Is there anybody else on the staff?
- Gerbode: No, that's all. We have people come in and do clerical work occasionally. But [the foundation] is really run by Tom Layton and the secretary.
- Hughes: In 1969 Congress passed the Tax Reform Act, which established tighter regulations on all nonprofit organizations. Did that cause any particular change?
- Gerbode: Not really. The only thing it affected is the Island properties we have at Diamond Head. Before that 1969 tax law was put through we could occasionally go down and use those houses ourselves, but that law pretty much forbids personal use by the board of any foundation property. We can go down there for the purposes of looking over the property but we can't go there and entertain.
- Hughes: Tell me a bit more about that property.

Gerbode: There are two houses on the Diamond Head property. The first house was built by my mother- and father-in-law, Mary and Wallace Alexander. He was president of Alexander and Baldwin. They spent about half the time there and half in Piedmont.* They bought the land from Jay Gould of New York, a rather famous man, and they built a house which was designed by a cousin, Will Dickey. He's the architect who designed the Claremont Hotel. The Claremont Hotel in Berkeley is an entirely different structure. He is credited in the Hawaiian Islands with incorporating Oriental style in the construction of the roofs and the general appearance of the houses and buildings. So they are rather unique. They're well known. They've been illustrated quite often in various architectural magazines. The house was built out of coral and lava rock, so the walls are very nice looking and obviously very permanent.

There was some adjoining property owned by a man by the name of Mr. Atherton Richards, and my mother- and father-in-law bought the land from him a few years after my wife and I were married. Then we built a house which complemented the one that they had on this other piece of property right next door. Now the lawns and the acreage and everything are contiguous.

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Gerbode: We rented our house a good deal of the time, because obviously we couldn't use it fully. I was busy being a doctor, or being trained to be a doctor. One of the renters left a cigarette burning in the bedroom while he was looking over his income tax papers. He had failed to submit income tax returns for a couple of years, although he was a wealthy man. I think he was trying to sort out the papers so that he'd have answers for the IRS, and he either left a cigarette near them or something like that happened. So the house virtually burned down. But we had it fully insured, so we rebuilt it pretty much the way it was before.

Hughes: When was this?

Gerbode: Middle or late sixties. When my mother- and father-in-law and Mrs. Gerbode died, we put both houses into our family foundation. Since then we've rented the houses through the family foundation.

Hughes: The grants by the foundation for 1982 range from under a thousand dollars to the one hundred thousand dollars that was awarded to the Nature Conservancy. Would you say that this is a fairly typical range?

*The preceding two sentences were moved from the session on 7/20/83.

Gerbode: I'd say the average grant is from one to thirty thousand dollars. There aren't very many one thousand dollar grants, though.

Hughes: Obviously the foundation's policy is to fund a number of organizations in a modest way rather than to give large sums to a very few organizations.

Gerbode: I think that's true. Our general policy is to get things started, as I mentioned to you before, which we think would have enough value to be carried by the community, by other organizations. Pickle Family Circus, for example, carries itself now. There are several dance groups, too, that we started--they are mostly connected with various countries--and they are on their own now, too. There's a Holocaust memorial being developed now [by the Palace of the Legion of Honor] to remind people of the number of Jews that were killed during the war. We've supported that because we think it's a good thing to have people see what it was all about. Many people don't think any Jews were killed at all, or there weren't any concentration camps. A lot of Germans think that, too.

Hughes: You certainly know better than that.

Gerbode: Yes.

Hughes: What would you say is the image of the Gerbode Foundation?

Gerbode: I think probably the image is one of an organization that is interested in community affairs in the Bay Area.

Hughes: There wouldn't be a political coloration? I'm thinking on the scale of conservative to liberal.

Gerbode: I think we're right in the middle somewhere. For example, we supported the building of the [Louise M. Davies] symphony hall. You might consider that conservative, yet it takes care of a lot of liberal people, too.

Hughes: Well, things have changed. In the old days it was unusual to fund nature-related activities.

Gerbode: That's true. I think that people are generally more conscious of preserving green areas. We'd been very interested in this in San Francisco long before the foundation was founded, in being sure that where there was a possibility of making a park, that we could help get the park made. This is a form of nature conservancy, preserving green areas in the community.

Hughes: In the annual report, religious activities are specified as an area which are not funded. Was this a conscious exclusion?

Gerbode: I don't know how to answer that question. We have not been very interested in religious activities in the community. I don't know whether that was conscious or unconscious.

Hughes: So it's just a lack of interest, not fear of being accused of supporting one religion against the other.

Religion

Gerbode: Not really. [My wife's] family, way back in New England, were Congregationalists. It's a very simple form of a Protestant religion. Their churches and their programs are simple. The Hawaiian mission children's church, the Kuaihau Church, was built by missionaries, and their programs are very simple and very humane. That's the sort of religion, I think, that they practiced. My mother- and father-in-law went every Sunday in Piedmont to a very small Protestant church, and they supported that church's activities. My wife and I would go occasionally, but not very much.

Hughes: And that was a Congregationalist church?

Gerbode: I guess they called it a joint Protestant church, encompassing various Protestant religions.

Hughes: What about your side of the family?

Gerbode: My father was a Catholic, but my mother wasn't and I wasn't either. When I took a look at the Catholic religion, I decided I couldn't really be a Catholic without being dishonest.

Hughes: What were the grounds--?

Gerbode: Well, if you follow the rules of being a Catholic, the rules are so strict that I'd be going to confession twice a week.

Hughes: Or maybe more often.

Gerbode: Or maybe more often. I don't really believe that when St. Peter said, "Upon this rock I founded my church," he meant only the Catholic church. That's the basis for the Catholic church saying that there's only one church. But I have a lot of doubts about various forms of religion anyway.

Hughes: Was this a disappointment to your father when you didn't follow--?

Gerbode: No, he didn't care.

Hughes: He wasn't a strong Catholic influence?

Gerbode: No.

Hughes: Does that date back to the German background?

Gerbode: Saxon. I think his family were quite strong Catholics, and they wanted him to be a priest.

Hughes: That would be interesting in a mining town.

Gerbode: But if he had been a priest, then I wouldn't be here!

Martha Alexander Gerbode

Hughes: Shall we talk about your wife? I know that she was active in the foundation, but I would really like to go further back and hear a little bit about her upbringing.

Gerbode: She was an only child. She was the daughter of Wallace and Mary Alexander. She was born in Piedmont and raised there. She went to private school there, and then subsequently went to Mt. Vernon Seminary in Washington, which was sort of like a junior college for girls. Then she went to Stanford after that and graduated from Stanford.*

I think that you could characterize my wife as being a liberal. She was more liberal than conservative. Although she was a Republican, she very frequently voted for candidates who weren't Republicans. She had always been interested in the underdog. She was very apt to take an unpopular stance if she felt that it was justified.

Hughes: Did her family background warrant this orientation?

Gerbode: Her mother and father were very conservative people. On the other hand, they did support community [activities] on a broad basis.

Hughes: Even liberal community activities?

*This paragraph was moved from the interview on 7/20/83.

Gerbode: Once in a while, but not so much. She was much more liberal than they. She would periodically rise up and do something unusual. For example, when Lamar Hunt was talking about taking over Alcatraz and making it into a gambling resort, she took a very strong stand against it and publicly denounced the whole idea, and even told the mayor that she'd be willing to raise money to buy it for San Francisco. The mayor thought this was quite funny in a way. He said, "Well, I wouldn't mind if she bought it. If she wants to buy it, that's fine with me." Something like that. But actually the community did react against Hunt's offer.

Hughes: What were her grounds for disapproval?

Gerbode: She thought it'd be much better as a national park, which is what it turned out to be. I think people go over there by the thousands to look at the jails and see how we took care of the criminals and where Al Capone was interred. That's been a jail, you know, long before modern times. It was a jail in the 1800s.

Hughes: Under the Spanish.

Gerbode: Yes.

She also took up Planned Parenthood, as I mentioned to you before, when it was unpopular, and actually was under the rug. Anyone who discussed Planned Parenthood was considered to be a bit wild.

Hughes: How did she come to be that way?

Gerbode: [laughs] I don't know. I suppose maybe she was compensating for the fact that she was financially secure, maybe a little conscious of this and not wanting to show it too much.

Hughes: Do you think Stanford had any influence?

Gerbode: I don't really think so. She was a good student at Stanford, but she didn't join any liberal causes down there.

Hughes: When did her real community involvement start?

Gerbode: I guess [after] we were married and began to live in San Francisco. Then she began to look around and find things to do as a wife and as a citizen, and she found that many of the so-called liberal causes were more interesting than just giving money to the Boy Scouts and the YMCA.

Hughes: You said that her parents had given money to community efforts in the past; did that make it almost certain that she would become involved with charity work?

Gerbode: I don't know. I think probably it certainly put the basis of giving into her behavior.

Hughes: I don't know enough about the founding families of Hawaii* to know whether philanthropy is--

Gerbode: Philanthropy has always been a characteristic of them. But I think in the last twenty or thirty years, philanthropy has in general been much more inclined to give to the museums, cultural [activities] like that, and to some of the schools, rather than to reach out and get programs going. That's where we've tried to do a little stimulating.

Hughes: I know there are a tremendous number of foundations in San Francisco; do you think it could be characterized as a city that is very strongly supported by private foundations?

Gerbode: There are some very wealthy families in San Francisco that have always been interested in philanthropy. The Jewish families, the Haas and the Stern families, have always been very active in philanthropy. I use those two names, but there are many branches of the family which have been very interested in good deeds in the community for a long, long time.

Hughes: So you think that set the ball rolling, so to speak.

Gerbode: It's helped enormously to do that. I'm sure that the same thing is true in other big cities. In Los Angeles, for example, there are a group of people who have been in family foundations for a long time and have done a lot of good--the Chandler family, for example, the publishing family in Los Angeles, has done a tremendous amount of good in the community through its foundations and personal giving.

Hughes: Can you tell me a little more about your wife's day-to-day activities?

Gerbode: She was on quite a few boards in the community. She was on the board of Planned Parenthood, [the] YWCA, and several other organizations. She was very interested in the original San Francisco

*The Alexanders are one of the white missionary families who came to the Hawaiian Islands to convert the natives to Christianity.

Gerbode: Planning and Urban Redevelopment Board, which had to do with planning in the community as a whole. I think she was on the board of Nature Conservancy. So she spent a lot of time in meetings with these organizations. Obviously if she was going to a meeting, she would have an influence on the decision making. She enjoyed doing that very much.

Hughes: Over the years I would think she would have come to be known as an expert in certain areas.

Gerbode: I don't know about being an expert. I think she was certainly known for her stance in all these organizations.

Hughes: Because of this reputation, were there many demands for her participation?

Gerbode: Oh yes. Demands for money, too.

It's curious, in all these years we never got much involved with any religious activity in the community. You'd think that churches would be after us a good deal. Well, there was one church in our neighborhood, an Episcopal church. We thought it would be nice to join the church and get involved with some of their programs. So we went to church a few Sundays, and began to get interested, and the next thing we knew, we were approached to give a vast sum of money to the church to rebuild it and to do a lot of other things. So we told them that isn't why we were there. We were there because we felt a little religion might do us good. But we didn't want to get the religion by giving them a lot of money.

Hughes: Did they lay off?

Gerbode: They laid off, and then they weren't interested in us after that.

Hughes: I understand that your wife was a major force in saving Diamond Head. Was that beyond the purview of the foundation?

Gerbode: Yes. This was entirely on the basis of being a citizen. We had the Diamond Head properties. There was a Chinese businessman who had made pots of money during the war, and he wanted to buy up the property along Diamond Head toward Kahala and build a lot of high-rise buildings and condominiums. Financially it would have been tremendous for him if he had gotten away with it, and there were certain people in the community who were in favor of it. The argument always is, well, if you put these things up, you'll get that much more back in taxes.

- Gerbode: But [Martha] and another elderly woman by the name of Mrs. [Alice Spaulding] Bowen, who lived on Diamond Head Road, or nearby, fought this thing out. One thing that Martha did was to buy the Fagan property, which is a big piece of land down the road, rather than let the Chinese fellow get it. This was like playing monopoly. If you get certain pieces in a certain area, then you can stop a development. By buying this piece of property, she stopped a lot of the thought of converting all that land into highrises and condominiums. [The two women] organized a campaign which all the other people who had property along Diamond Head got interested in. They realized that their views were going to be cut off and that their neighborhood would change entirely. Even the transportation down that little road would have been impossible with a lot of big buildings. It's just a small, two-way road. To make it a super-highway would be very, very difficult. It could be done, but not without losing an awful lot of good land to do it.
- Hughes: We've talked about your wife from the standpoint of her community activities. Can you give me a better idea of what she was like as an individual?
- Gerbode: She was a very compassionate individual. She felt very strongly about right and wrong, and she would take strong stands on issues. In general, she was suspicious of successful business people and backers.
- ##
- Gerbode: Some of the people she'd gone to school with in childhood thought that she was much too liberal. So socially we didn't see those people very often.
- Hughes: Did she ever run into other problems because of her liberal stands?
- Gerbode: No, I don't think so. I think in the community she was not very impressed with being a society person, and in our home we never pursued very much of a social life in that sense. We had our friends in the community who were important people, but were not essentially society people.
- Hughes: How did your viewpoint coincide with hers?
- Gerbode: I was always too busy in my profession to worry too much about it one way or the other. When you're working ten, twelve, fourteen hours a day putting something together, you're not very concerned about things like that.

Hughes: I was thinking more in the political sense of her liberal causes. Do you think you in general went along with her viewpoints?

Gerbode: Yes, I would go along with most of them, but sometimes I wouldn't go along with them at all.

Hughes: And you said so.

Gerbode: Sure.

Hughes: And she went right on.

Gerbode: Usually.

Hughes: We will at a later date have Maryanna speak for herself,* but I was wondering if you could say something about her role in the foundation.

Gerbode: First of all, she's a very intelligent young woman, and she is very much like her mother. She is given to thinking liberally about things. She also has a very strong will, as her mother did, too. She's been very interested in the foundation, in its activities, and she reviews all the applications very carefully and writes an independent opinion about them.

Hughes: The other board members do not do this?

Gerbode: Yes, they do it. They all review the programs. But I think she's perhaps a little more serious about it than the rest of us. She has more time also to look into some of the things that are suggested.

Hughes: So she would do more than just read the application.

Gerbode: She might even go take a look or call up somebody or have Tom Layton do it. She'll say, "Tom, why don't you investigate this part of it. I'd like to know a little bit more about it."

Hughes: Do you think that her opinion influences your eventual decision?

Gerbode: If her reasons are valid, then she influences me.

Hughes: I'm glad you listen to a woman. [laughter] I understand, again from talking to Tom Layton, that he and Maryanna spend quite a bit of time together working on foundation business.

*The transcript of an interview recorded on November 4, 1983 with Maryanna Gerbode Shaw is on deposit in The Bancroft Library.

Gerbode: He's very apt to call her more often than me. He'll call me about certain aspects of foundation activities, but on certain decision-making things, he'll call her and get an opinion. We actually have kind of a working rule that he and one other foundation board member can make an independent decision before a board meeting for grants of a small amount of money. On those small ones he's more apt to call her than to call me.

Hughes: Did she work very closely with your wife?

Gerbode: No.

Hughes: Do you think that Maryanna has taken over your wife's role in the community?

Gerbode: I think she has with regard to the foundation. With regard to other activities in the community, she's been more interested in the business aspects of the family. She's on the board of the company that's been associated with the family. And she goes to Hawaii once a month to board meetings. She follows [what is] happening quite carefully. I think she wants to be, and has become, a knowledgeable businesswoman.

Hughes: What is the family company?

Gerbode: Alexander and Baldwin. It was founded by her great-grandfather and some other members of the family.

Hughes: Is that still very much oriented towards the Islands?

Gerbode: Yes, it's mainly an Island company.

Hughes: Was your wife not particularly interested in the company?

Gerbode: Not as intimately as Maryanna.

Hughes: What, again, is Maryanna's background as a college major?

Gerbode: She went to Stanford and graduated in anthropology. She went to Hamlin School first for two years, and then we sent her to Milton Academy in Milton, Vermont, for the last two years. She was the first girl ever accepted from the West [at] Milton. It was really quite a thing for them to accept somebody from way out in the wilds in San Francisco.

Hughes: I'm sure she did well for the reputation of the West.

Gerbode: She did well enough to get into Stanford.

Hughes: The other children are not particularly interested in the foundation?

Gerbode: My oldest son [Frank Albert Gerbode] is, but he will get interested just before the meeting. He'll read all the material, and then he gives an opinion about it. The others haven't been asked to get into the foundation activities. I think they're interested in the activities, but they have their own interests. [John] Philip, my youngest son, is in Vermont, so it's very difficult for him to do anything locally. My youngest daughter, Penelope Ann, is busy taking care of her own family. She is interested in the Nature Conservancy and the Oceanic Foundation. She has her own activities along these lines.

Hughes: Would you say that the board of directors pretty much sees eye to eye when it comes to a decision about whether to award a grant or not?

Gerbode: We disagree once in a while, but I think that [if there is dissension], even on the part of one board member, we're apt not to approve the grant. Although sometimes several of us will be in favor of [an application], and one will cast a dissenting vote. Of course the [majority] vote carries.

Hughes: Can you make any generalization about what the usual reason for a rejection would be?

Gerbode: There are various reasons. One very good reason is that they're already sufficiently funded or that they have enough possibility of being funded without our help. Sometimes the request is for something which is not exactly in our sphere of interest.

Family Life*

Hughes: Was it difficult with two very busy people to keep the home fires burning, so to speak?

Gerbode: I think it was a little hard on the children in some respects. We didn't spend as much time with them as we should have, although we always had our vacations together. But the chances of having me come home and read to the children were pretty slim. However, I

*More information on family life is contained in the interview with Maryanna Gerbode Shaw.

Gerbode: don't think the children suffered very much from it. Maybe Philip, the youngest son, might have felt a little bit left out because of our activities.

Hughes: Because you were busier--?

Gerbode: Yes, busier than perhaps he thought we should be. But he's forgiven us now, and he's very much of a family man at the present time. We usually took the children to the Hawaiian Islands and spent a month or six weeks with them [during summer vacation]. That was always very good from the family point of view.

[While the children were growing up], we had a black lady by the name of Eloise Washington who was one of the most sterling characters I've ever known. She managed the whole household by herself, with occasional cleaning people. Mrs. Gerbode never went shopping and never ordered anything. Eloise did everything, made up the menus and ordered the food and watched the children.

Hughes: Was she there for most of their growing up?

Gerbode: Yes, she was. She was with us for thirty-five years.

We've had a series of people since then, and none of them were really very significant as far as the family is concerned. A very fine Chinese woman, Lau Chun, takes care of me now. She's excellent. She's a good cook. She can't read English, and she can hardly speak English, but I manage with a kind of pidgin English to convey my wishes. The nice thing about a Chinese woman like that is that she doesn't have anything else to do.

Hughes: Maybe it's the time to say something about your love of flowers. I know you have a greenhouse. How old is this love?

Gerbode: I think I've always been interested in a garden of some kind. My problem is that I don't spend as much time in it as I should. I'm very apt to get things going and they'll do very well. Then I'll switch to some other part of gardening and the first one suffers from neglect.

Right now I'm in a position of having to convert a summer garden to a winter garden. I was working on this in my mind's eye over the weekend. I like planting vegetables.

The Chit Chat Club

Hughes: Shall we talk a bit about the Chit Chat Club?

Gerbode: I guess I got interested in the Chit Chat Club because of a professor of anthropology at Stanford by the name of Harold Fisher. He was a Ph.D. He was a very good friend of mine, and also even before that of my wife. She met him in her classes at Stanford, and he became a kind of a family friend. He was a member of the Chit Chat Club. Incidentally, it's over a hundred years old. It may be the oldest men's club in California. If it isn't the oldest, it's pretty close to being the oldest. So he invited me to go to some meetings, and then finally they asked me to become a member, which I then did.

Hughes: Is that by election?

Gerbode: They look you over for a couple of times, and then send a little note around, "Dr. So-and-So has been proposed for membership. Do you agree or disagree?" It's done very informally.

Hughes: Is there any attention paid to what your career is?

Gerbode: Not really. The membership has been rather heavily weighted toward lawyers and judges, with some professors, throughout the years since I've been a member, which is I guess about twenty years now.

Hughes: It was founded in 1874. Do you know what the original purpose of the club was?

Gerbode: I think just to get together and talk. That's why they call it Chit Chat. It was [modelled after] a similar club in London. In fact, Samuel Jonson belonged to a little club like that. They used to meet in a restaurant in the City of London. The restaurant's still there, incidentally.

The Bohemian Club started the same way. It started as a small club that met once a week in an apartment in what is now the financial district. They were writers and doctors and engineers. There were just a handful of them. But they started getting interested in music and the arts. They went on and became what is presently now a very large club, while the Chit Chat Club has always been small. It's always been maybe fifteen or twenty members. We never wanted to be big. We wanted to sit around one dining table conveniently, and we wanted to have it small so that everybody at a meeting could have something to say.

Hughes: What is the format of a meeting?

Gerbode: The format has been the same forever. We meet for cocktails at six o'clock, and for many years this was at the University Club. Now we meet in a special room at the [Grace] Cathedral. We meet around a big table and have a cocktail or two, and then precisely at six thirty we go down to the dining room [and] sit around a U-shaped table. There is a permanent secretary and a speaker at every meeting. The chairman of the meeting is the speaker of the previous meeting. We sit around this table, and we have a dinner, usually selected by the secretary, with good wines, which usually takes about forty minutes. And then there's the speaker. The subject that he's going to talk about is announced by letter a couple of weeks before the meeting, so that you have a general idea of what he's going to talk about. But the trick of the matter is that they usually couch the name of the talk in euphemistic terms so you can't be quite sure, so that some smart aleck won't arrive and know more about the subject than the speaker. Usually there is one smart aleck who knows more about it anyway.

Hughes: But it's not the intention for the members to do a lot of research before the meeting.

Gerbode: No, it isn't. If one of the members guesses what it's about and he's interested in that subject, he's apt to do a little reading on it.

Hughes: That implies that there is a time for question and answers.

Gerbode: Yes. Usually [the talk is] read from a manuscript, and it usually takes about half an hour.

Hughes: That's a fairly formal presentation?

Gerbode: Yes, it is. Then the chairman, who is the previous speaker, will ask people around the table to comment on the talk.

Hughes: Does the Chit Chat Club do any publishing?

Gerbode: All the talks are turned over to the Stanford Library.

Hughes: Why Stanford?

Gerbode: I suppose because way back several members were Stanford faculty.

Hughes: The topics of the talks are left entirely up to the speaker?

Gerbode: Entirely up to the person. He tries not to speak about something that's been discussed previously.

Hughes: These are scholarly presentations?

Gerbode: Yes. They're not humorous.

Hughes: Just to give an idea of the sort of talks that occur, I wrote down the titles of the six of yours that I found. The first was "The Crisis at the University of California." That was given in January, 1965, right in the middle of the Free Speech Movement.

Gerbode: I had given talks before that.

Hughes: You don't have copies.

Gerbode: There's a very good one on the French Impressionist painters, and I don't know what happened to that manuscript.

Hughes: Nineteen sixty-five was the first one. Then they came rather fast and furious. You gave another in 1967 called "Animals and Man," which was about research on the social relationships of animals. Then "Medical Manpower in Our Changing Times," which was in May, 1970, about the shortage of doctors in this country and some possible solutions. "Traveling Behind the Iron Curtain" in 1972. "The Barking Dog" in 1973. And then "In Pursuit of Aphrodite," which didn't have a date on it.

Gerbode: I've forgotten the date.

Hughes: How did you choose these topics?

Gerbode: [laughs] I don't know. I'm constantly thinking what I'm going to have to do the next time. It's like painting that picture for the Christmas card.* It's on my mind all the time.

Hughes: Is it done on a rotation basis?

Gerbode: Yes.

Hughes: How long do you expect to spend on the preparation of a Chit Chat talk?

Gerbode: Oh, I have to spend a lot of time, because I'm not very smart.

*After he took up painting, Dr. Gerbode each year sent a reproduction of one of his paintings as a Christmas card.

Hughes: Oh, come! [laughter]

I was very impressed with the bibliography for the Sir Francis Drake paper, which went on for pages. Did you really look at all that?

Gerbode: Yes, I did. I really researched him. I really think that people don't realize what an important person he was in the formation of the British empire.

Hughes: Do you have any opinion on the famous Drake plate which resides in The Bancroft Library at Berkeley?

Gerbode: I remember when it was found, and [that] Mr. Alan Chickering, the lawyer, was excited about it. He's the one that got it into the Bancroft Library and made a big thing about it. I have no idea about whether it's really authentic or not. If it's not authentic, somebody did a powerfully good job in faking it.

Hughes: What about notable members of the Chit Chat Club?

Gerbode: Joel Hildebrand was one of the famous ones. He was a long-time and very interesting member. He finally had to give up because of old age; he couldn't get back and forth across the bay. Professor Robinson of Stanford, a famous historian, was a long-time member. He finally gave up. A very famous astronomer--I can't remember his name just now--was a member for a long time. One of the judges is Ben Duniway, who is quite a liberal superior court judge, also a trustee of Stanford University. He's been a member for a long, long time. There's a Judge Searles, who's a well-known judge currently. There was Langley Porter, a pediatrician, for whom the Langley Porter [Institute] is named. He was a real giant in the community. One of the good things about him was that he liked me.

Hughes: Was that unusual?

Gerbode: Well, he took a personal interest in me, which, as a young man, was very flattering. I don't know why. I never asked him. He invited me to his house to meet other friends of his.

Hughes: Did he have any particular interest in the field of cardiovascular surgery?

Gerbode: No.

Hughes: Did that friendship have any bearing on your subsequent career?

Gerbode: No, I don't think so. It was something I was flattered to have.

Hughes: What was he like as an individual?

Gerbode: He was a big man. He was vigorous in his attitudes and his approaches to life. He always made good decisions. He was highly respected as a physician and had an enormous practice. He managed a lot of things at the same time. For that reason he was a man of considerable stature.

Hughes: You mean much more than medicine?

Gerbode: Yes. He was very interested in the community, which is unusual for a very busy practitioner. A similar man was Chauncy Leake, who was active in Chit Chat.

A very well-known anthropologist by the name of Harold Fisher, who was a very prominent professor from Stanford, [was also a member]. Currently there are three judges and three lawyers. One cleric, Dean Julian Bartlett, who is the dean emeritus of Grace Cathedral, is a member. He comes to the meetings quite regularly.

Hughes: What are the numbers involved?

Gerbode: There are usually about twelve to fifteen members present. I think the total membership is about twenty.

Hughes: Does the group tend to be fairly critical?

Gerbode: They can be very critical. If they know something about the field and the man has made some erroneous statements, they'll point [them] out to him.

Hughes: So the question and answer period can be quite lively.

Gerbode: Yes. It's more of a discussion period.

[Interview 12: October 23, 1983]##

Hughes: Shall we talk about your children.

The Home on Divisadero Street

Gerbode: Yes. After I'd been in Germany for a year just before the war with Professor Borst in Munich, we came back and I had an appointment as an assistant resident on the surgical service at Stanford in

Gerbode: San Francisco. We had children coming and we decided since we were going to have a modestly large family, we'd better get a house to accommodate them. So we looked at lots of property and houses and decided the best thing to do would be to get some property and build a house somewhere near the good schools, which is Pacific Heights in San Francisco. We actually had our eyes on Grant School, which was a good public school with a long history on Pacific Avenue.

Meanwhile we had rented a house on Green Street. We finally found this lot on the corner of Divisadero and Broadway. The real estate people wanted an outrageous amount of money for it. The contractor, Mr. Sophus Stockholm, was a good friend of mine and also a very good friend of the Pope family who owned the property. So he went to the Pope family directly and said, "Look, there's this young doctor who would like to build a house on that corner. How much would you really take for it straight from him?" So they gave us an extremely good price on the lot. It was a hundred feet each way, on the corner, with a nice wall around it, which we decided to keep.

We also had a very good friend by the name of Bill Wurster who was a famous architect in San Francisco. We liked his sort of modern style of building. It wasn't modernistic. It was modern Georgian style. So among all of us, we designed this house. When the plans were complete, we discovered that it was going to cost me about five dollars and sixty-five cents a square foot. I went to Bill and I said, "Bill, I can't afford this." He said, "Frank, it's all relative. Go borrow the money." [laughter] He's never said a truer thing in his life. I couldn't build that house for eighty dollars a square foot now.

So we borrowed the money and went ahead with building it. It was finished within a year. Sophus Stockholm, a very good friend, did a meticulous job in building it. I had a few arguments with Bill Wurster about certain parts of it, because he was a very determined, somewhat stubborn man. But I won all the arguments. I had other arguments with him later about a house for my sister and a house in Sugar Bowl. But I finally won all the arguments.

So the house was finished. It was a big house for an assistant resident in surgery to own.

Hughes: What year was the house built?

Gerbode: It was 1938.

Hughes: How could you have been sure that you'd stay in San Francisco?

Gerbode: I just decided I'd be here. I made that decision about four or five times later.

It [is] a lovely house. We didn't have enough furniture to complete it. Meanwhile, my father, who was a contractor, had hurt his back badly in a fall from a scaffold and couldn't be a contractor any longer. But he could work maybe two or three hours a day. So he bought a lot of tools and equipment and started making furniture at home just for fun.

Hughes: They were in Piedmont?

Gerbode: Yes. They had a little house over there, and he had a shop in the basement. So he decided to make us some furniture. He made the dining room table and some beds for the children and a few other odds and ends. It took him a long time to do it, because he could only work a couple of hours a day. He was about seventy-eight or eighty years of age. So it gave him something to do and he enjoyed it.

Hughes: Had he ever done anything like that before?

Gerbode: He was trained in fine cabinetwork and construction, because that's what he did when he was a contractor. He would not only build a house, but he designed all the cabinetwork inside as well.

So we got some furniture from him, and we bought some. We had some pieces which we'd inherited through the family, and put together a reasonably well furnished house.

The house is on a corner lot on Divisadero and Broadway, and the lot falls off rather steeply down Broadway. That means that if you build the house level with Divisadero Street, the back of the house goes down about sixteen or more feet. So that meant that by doing a little excavating in the front, we could have a full basement which would be built on rock. Part of it turned out to be a playroom for the children. I was very interested in doing photography as a hobby at that time, so I made a photograph developing room. I did a lot of developing pictures and printing down there. The children's playroom and the photography room became an apartment during the war. Donovan and the Secret Service took it over for the Navy. [Bob Haynie and Herbert Little] were down there during the war as our guests, designing programs which would frustrate the Japanese on the air.

Hughes: How did that connection come about?

Gerbode: I guess they wanted to have a place in a neighborhood where they wouldn't be obvious. It was easier to bury themselves in somebody's house than it was downtown in an apartment or an office. So I think they remained anonymous there during the war.

It proved to be a very fine house to raise children. The block is flat in front, so the children could play on the broad sidewalk. I had figured this all out in advance as well. We made a play-yard for them in the back where they could have a jungle gym and a few things like that.

Children

Wallace Alexander Gerbode

Gerbode: We initially put all the children into Grant School, but the oldest son, Alec, never had any homework. I asked Alec, "Why don't you have any homework?" He said, "I do it all in just a few minutes at school, and then the teacher assigns me little chores to do around the classroom like cleaning the erasers and running errands." So I went around and found the homeroom teacher at the school and said, "I have a son here who is in your class by the name of Alec Gerbode. I was just wondering how you think he's getting along." She said, "Now which one is he?"

So I said [to myself], that means that she doesn't really know the students in the class. So we pulled him out and put him in a new little private school on McAllister Street called Town School, which was just being started. There weren't many children in it, but the instruction was quite good. Then he stayed when Town School moved to a new location on Jackson Street. We helped them a bit financially to get moved over there, helping to buy the property from some nuns.

Then instead of sending Maryanna to Grant School, we put her in the Hamlin School, and subsequently Penny and Maryanna's daughter, Sarah, went there, too. Philip and Sarge went to Town School. It was all in the neighborhood, [so] they could walk to school, which is a great thing.

Susan Gerbode

Gerbode: We lost a daughter, Susan. Just when I was getting ready to go overseas during the war, Susan was born, and she died a couple of days after birth. We don't know why. I've always felt that maybe she had too much medication or somebody didn't pay attention to her. She may have aspirated some mucus.

Hughes: Did she seem healthy when she was born?

Gerbode: Yes, she seemed quite healthy. The pediatrician thought she was perfectly all right. That was pretty hard for my wife, to lose a little girl and then have me leave shortly thereafter in the army.

Hughes: Do you want to say something about what the children are doing now?

Wallace Alexander Gerbode (Continued)

Gerbode: Alec, the oldest boy, went to Exeter. My good friend Paul Bissinger, who lived on the corner of Divisadero and Pacific, had a son, Paul, Jr., and Alec and Paul, Jr. were very good friends. The two families decided to send our boys East to school. The both got into Exeter. Alec did very well at Exeter. In addition to having a good academic record, he was on the swimming team and set some new records in the school in swimming. He was a tall, very handsome young man. He looked very much like Maryanna's oldest son, who's also named Alec.

In any event, Alec then went to Stanford. When he got there he got into some advanced classes because of what Exeter provided. He went through his first year quite easily. Then after the summer vacation he went back to Stanford as a sophomore and was at an evening party, and driving home there was a head-on collision and he was killed.

Maryanna Gerbode Shaw

Gerbode: Maryanna had gone to Hamlin School for two years in high school and then decided that she'd like to get out of Hamlin, since she'd been there all through grammar school and high school. So we looked around and decided that we'd send her East too. The most difficult

Gerbode: school to get into in the East for a girl was Milton Academy in Milton, Mass. They'd never taken anybody from California. I guess it was too far away from New England. But in any event, we took her back there and she was interviewed. The school here wrote very good recommendations, so they accepted her in the junior high school class, the first time it ever happened. She felt very alone there for a while, because the Eastern girls stick together. Many of them had known each other forever, and they are inclined to be a little bit impressed by their Eastern connections and so forth, But she is a very friendly person, and she soon made her way with the staff and with the teachers and managed a few friends among these Eastern girls. She knows more about it than I. I'm only telling you what I gather in speaking with her about it. Eventually she decided she would go to Stanford. She applied and got into Stanford as a freshman. When she was there she wondered what to take and decided that anthropology might be a good thing.

We also were very good friends with Fee Keesing, who is a professor of anthropology at Stanford. She liked him and liked what he was doing. He was an expert on Polynesia, and that, I guess, intrigued her a little, too, because of her [Hawaiian] Island connections. So she went through Stanford and finally graduated in anthropology.

During her senior year she met Joe Shaw, who was a premedical student, and they were married. Then he went through medical school at Stanford, and then went East for training, went through a full residency in orthopedic surgery. They had three children.

Hughes: The children must be close in age.

Gerbode: Yes, they are a couple of years apart and fortunately got along very well together, and she gets along very well with them. We had bought this old house on Pacific near Steiner, the oldest house in Pacific Heights, built in 1852. They were about to demolish it and put up some townhouses on the lot. So we heard about it and bought it, and finally had it classified as an historic building. We rebuilt it, modernized the inside of it. For example, there was a dirt basement, and we wanted to cover it over with cement, so we had to dig it out and level it underneath the house.

[telephone interruption]

Gerbode: As we started redoing the house we found the old gas light shades, which are made out of very pretty old glass. We saved most of those and were able to put those into a fixture in each room, which was then electrified. That worked out very well. And in the basement, in addition to finding some other things, we found some broken pieces

Gerbode: of marble. We put them all together, and it turned out to be a marble fireplace which somebody had taken out and broken up and stuck in the basement. So we put all these pieces together and made a very handsome fireplace in the living room, which was probably exactly the way it was in the old days.

In any event, we had a lot of fun with that house. Then we gave it to Maryanna when she moved out from the East, when she was married to Joe Shaw. She has lived there ever since. In fact, she's redone it a couple of times since then herself, but retained all the fine personality of a really beautiful Victorian-type house.

Hughes: Is it decorated in that fashion as well?

Gerbode: Well, it's modern and Victorian.

Hughes: Do you want to say more about Maryanna? You've spoken about her work with the [Gerbode] Foundation.

Gerbode: Maryanna, in the process of raising these children, got involved with various things in San Francisco, very much like her mother.

In more recent years she's gone on the board of Alexander and Baldwin, which is a firm with which the family has had something to do for over a hundred years. She's the first woman to be on that board in a hundred and fifty years of its existence, and she's doing a very good job there.

In addition to that she's gone on the board of the University of the Pacific as a trustee, which she likes very much as well.

Hughes: How do these things occur?

Gerbode: These things occur because somebody spots you and they have a place and they want you to fill in that spot.

Hughes: So she had shown herself already to be a capable young woman.

Gerbode: That's right. And people like her.

Frank Albert Gerbode III

Gerbode: My son Sarge, who is Frank Gerbode III, was admitted after Town School to both Andover and Exeter and went back to the East Coast to see which one he wanted to go to. Exeter has a very proud

Gerbode: headmaster who thinks that Exeter is the end of the world in preparatory schools and believes that anyone who's been admitted to Exeter has been admitted to heaven, more or less. [laughter] So Sarge first went to Andover and looked it over, and then he went to Exeter and looked it over, and then he went to see the headmaster. The headmaster said, "Aren't you happy that you were finally selected like your brother to go to Exeter?" He said, "Well, I came here to tell you that I've decided to go to Andover." [laughter] I think the headmaster fell through the floor. But anyway, at least he had the courage and the decency to go tell the headmaster what his decision was. So he went to Andover and did very well.

He also got into Stanford and got advanced standing in several courses, English I think, for one. He went through Stanford and graduated. He's always been interested in philosophy, so he said, "I'd like to go to England and try to get a Ph.D. in philosophy." So he was admitted to Cambridge, which is unusual as well, and was about two-thirds of the way through the year when he wrote me a letter saying that he'd decided that he didn't want to get a Ph.D. in philosophy, that he thought he'd get an M.D. degree, because he thought he could do more with an M.D. degree, which is certainly true. So he finished his year at Cambridge, came back, and then had to take some premedical subjects, which he did at the University of California and Stanford. Then he applied to several medical schools. He got into all of them, including Harvard. Some of my friends at Harvard were delighted that he was admitted, and they thought of course he'd go there. But again, he wrote and told them he didn't want to go to Harvard and decided to go to Yale, because Yale didn't have any examinations. You took the national board examinations, rather than taking course examinations.

Hughes: All the way through?

Gerbode: Pretty much all the way through. So he graduated from Yale Medical School. Then he took a full residency in psychiatry, both at Yale and at Stanford. He now practices a form of psychiatry. He's a very intelligent young man, almost middle-aged now, I guess, isn't he? He was married to the daughter of a professor at Stanford, Rodney Beard. Julie is extremely bright, Phi Beta Kappa at Stanford. They were married when he went to England. I was not terribly happy with that marriage, because I thought the two of them were too much alike. I guess they decided that, too, because eventually they got divorced. He had two sons, Collin and Ian, by Julie, and they're now teenagers. Then about three years ago he met a girl from South Africa by the name of Gail. They were married in my house, and they have a daughter, Sharon. Gail is a very charming young lady, and the daughter is very charming, too.

Hughes: Do they live down the peninsula?

Gerbode: They have a beautiful country style house in Woodside.

The Adoption

Gerbode: Then [there is] Penny, the youngest daughter, the adopted daughter, and her brother, Philip, who's adopted as well.

After Alec was killed in that accident, Mrs. Gerbode was shaken very badly, as I was, too. We decided that it might be better for everybody concerned if we adopted some children. At that point we could afford to do it. So we heard about two English children who were abandoned by their mother and father and were living with their grandmother. We investigated the situation. They seemed like nice children.

Hughes: How old were they?

Gerbode: They were three and four, more or less. So we went through the rather complicated process of adopting them. We had to go to England to get some papers signed by the father. I think the mother had disappeared. The father didn't want the children, so that turned out very well. It was a little difficult to bring the children up to standards academically, because they had not been trained very much. We found out that there was a very famous nanny around by the name of Miss Elsie Jeeves. Jeevie, as we called her, said that she would come and live with us and help to raise the children, so she did. Jeevie had raised four or five well-known children in Pacific Heights previously. She's a well-known character. At that point she was about seventy years old, but very strong. She used to take long walks like a Scotch mistress. She was very good, very strict with the children. They learned to respect her, which is very important, even though she was really hard on them.

Hughes: Was there quite a period of adjustment?

Gerbode: It was very hard on Mrs. Gerbode. They were completely undisciplined and had really never learned good study habits or anything. It was really difficult to get them brought around. But Jeevie helped a lot. The Town School took Philip, and Hamlin's took Penny.

John Philip Gerbode

Gerbode: After Philip finished Town School, we sent him to Cambridge School in Weston, Mass. He did reasonably well academically there, enough to get into Middlebury College in Vermont. He got to know some sons of prominent Eastern families who were filled with their own way of solving the problems of the world, one of which was to buy some farmland and put underprivileged people and ex-convicts on it, and have them learn how to do farming and become good citizens through work and having responsibilities. But unfortunately this proved to be a complete failure, because they didn't do what they were supposed to do. [Problems arose] in various ways. I don't know in which ways. But at least the idea didn't turn out very well. Philip meanwhile got to like the seasons and Vermont and decided he wanted to stay there. He had not graduated from Middlebury.

Hughes: Had he worked with this organization?

Gerbode: Yes. Two or three had enough money to do this. Meanwhile, he had been to art school in San Francisco and also Boston, but he was apparently not getting along well enough to be satisfied with it.

Meanwhile we'd given him some money and he bought a small farm with a small barn and a few cows and decided to learn how to be a dairy farmer. He did all this himself. He milked the cows with one other boy and arranged the contracts with the people who bought the milk. When I visited him, he smelled like a cow. He had two piles of clothes, one that had been through the washing machine; the other which hadn't. He'd take off the dirty ones, put them on the floor, and take some from the other stack and put them on. But I guess this was his way of getting into the act seriously.

When my wife died, we'd had some money put aside for all the children. So this was divided up evenly among the four children. Philip then got enough money to spread out a bit, and he decided

Gerbode: he'd go into it more seriously, and began to buy property in Vermont. He finally built a big, very modern barn and a house and sold some property, bought some more property and some thoroughbred cows. Now he has nearly two thousand acres of Vermont land, and he milks about two hundred and thirty cows a day, all done very scientifically.

Hughes: Is he still doing it himself?

Gerbode: He runs it, but he has good people to work for him now. He really loves it.

Hughes: How many head?

Gerbode: Well, he has about two hundred thirty milking cows, and he must have another fifty or sixty out in the pasture. He has a sale every once in a while if he gets too many cows. Since they're all registered and thoroughbred, he can advertise them nationally. He has good records on all of them, so he can say that in this line of cows the production has been so-and-so. He once had a national sale and got quite a bit of money back [from] a brochure sent out to breeders everywhere.

I don't know whether we should record this, but he's always had someone living with him, but he never wanted to get married. Now he has a very nice young lady living with him, and they have a baby, and that makes it a little more serious.* I have nine grandchildren now.

I've always gotten along very well with Philip. He's gregarious, very open and cheerful. Sometimes he doesn't tell me things that I think he should. For example, he decided to go into stockcar racing. He had enough money left over from his farm to buy a couple of racing cars and to race them on weekends. Usually he [races] for some company or other combine. Of course he knew that this would upset me, so he didn't tell me about it until he'd just about decided to give it up. But now he has built another racer and will do ten races this winter.

Property on Kauai**

Gerbode: About twenty-five years ago we began to worry, since we had so many roots in the Hawaiian Islands, that we should have some land for the grandchildren. We were afraid that the Diamond Head properties

*Philip was married in Vermont on December 1, 1984, less than a week before his father died.

**This section was moved from the interview on 6/20/83.

Gerbode: would eventually become something else. We can't get there any more, because in a family foundation, the family can't use the property. About twenty-five years ago, my wife and I started buying property on Kauai. We have a farm over there now, which I've maintained. I'm gradually buying the whole little valley. I own almost all of it already.

Hughes: What do you farm?

Gerbode: I put cattle on it, and citrus fruit, too. It's not a money-making thing, but it eventually will break even. Then it will be something that the grandchildren will have.

Hughes: Does somebody maintain it?

Gerbode: Yes, I have a caretaker.

Hughes: How much time do you spend there?

Gerbode: I go over about every two months. I like it very much.

Hughes: Is it an old house?

Gerbode: No. We first built a prefab house, an extremely simple one, having made a good site for it, overlooking a bay. Then as time went on, I wanted to make it a bit bigger. The kitchen was like a little closet. Since I always ended up doing the cooking, I wanted to have a bigger kitchen, but my wife didn't want to have anything too pretentious. So I waited until a year and a half after she died, and then I enlarged the house, built a bigger living room, and made a decent kitchen. Since then, we've built another bedroom. This last year, I rebuilt the whole house again, because it was filled with dry rot. I was afraid it was going to start falling down. So now it's brand new but the same [design] as it was.

Hobbies

Hughes: Shall we talk about hobbies?

Gerbode: Yes. I have enough hobbies to keep me going, and periodically there's competition between hobbies and work. In the past work has always won out.

Hughes: How long have the hobbies been in your life?

Tennis

Gerbode: Tennis was a hobby; I liked tennis a lot when I was in college. But I was working so hard, I really didn't have time to play it the way I wanted to play it. I took some lessons from a very good pro and played in some minor tournaments. [It] became a pastime more than anything else, until about six years ago when I hurt my arm on my boat, so I couldn't play tennis anymore. The biceps muscle is all bunched up. I tore it loose.

Carpentry

Gerbode: I've always liked working in a shop, repairing furniture or making things once in a while.

Hughes: Do you have a shop?

Gerbode: Yes, there are a whole bunch of unfinished projects there. I'm inclined to try to repair things.

Photography

Hughes: You mentioned photography.

Gerbode: I did photography very seriously. When I was in Germany I bought a Leica camera and took some lessons from a very fine photographer and had a little darkroom in that house which we rented in Germany, and did a lot of developing myself. Then when we built the house in San Francisco, I had a darkroom where I could continue it. I did hundreds and hundreds of pictures. Where they all are now, I don't know.

Hughes: Did you ever enter competitions?

Gerbode: No, but I won a prize once without knowing I was going to win it. We were skiing in Sun Valley, Idaho. One of the things to do there is to climb up to the top of the tallest mountain nearby. It took all day to climb up there with skins. We went into a little cabin with a wood stove and enough food to last for a couple of days. The eggs froze in the cabin that night, it was so cold up there.

Gerbode: Anyway, there was a ski instructor by the name of Florian who was our guide to get us up there. Florian the next day after we got there did some jumping. He was doing turn-overs in the air and a lot of other acrobatics. So I took a lot of pictures of him doing it. We finally skied down from the top of this mountain after a couple of days, and I took the film into the photography shop in Sun Valley, and the man who ran it said, "Why don't you enter the photography contest? These pictures are good enough." I said, "Fine, you make some prints and put them in it." We left a couple of days later, and then I got a letter from the man saying, "You have won the first prize in the photography contest." So I wrote back and said, "What did I win?" He said, "You won a dancing lesson with Arthur Murray." [laughter]

Hughes: You have given up photography. Why is that?

Gerbode: Well, I've never stopped taking pictures, but I gave up developing them.

Painting

Gerbode: After I'd gotten into open-heart surgery--it was then about 1953-- I got to know Hector Escabosa quite well. He was then manager of I. Magnin's. He and I got along very well. Our wives were very compatible, and he for some reason liked me, although my work was certainly as far removed from his as you could imagine. He'd been trained as an artist and had started with the Magnin Company in Seattle as a window decorator. Then finally he went all the way up the ladder and became the manager of I. Magnin. He was a very lovable, very nice, warm-hearted person and a good painter. So he kept telling me when I'd see him here and there, "Frank, have you thought about taking up painting?" I said, "Well, I've thought about it." He said, "I think you could paint." So this went on for a year or so. Finally he called me up one day and he said, "Frank, what are you doing for lunch today?" I said, "Nothing." He said, "All right, I'm going to meet you at Jack's Restaurant. We're going to have lunch. Then we're going to buy you some paints."

So we had a martini lunch and a nice time and walked up to Flax's, which was about four blocks away, and bought a bunch of paints and canvases, and that Sunday we went to his lovely apartment on Jackson Street--it's a penthouse apartment, a beautiful place to paint--and started painting.

Hughes: He had a real studio?

Gerbode: He had a place where you could sleep and cook, but it was a real studio with a beautiful view of the bay. The first thing I painted was some dying anthuriums. The painting is now in Hawaii. It's not a bad painting.

So we painted together about once a week. Our wives would come over and give us cocktails once in a while, and then we'd have a meal together. I didn't really take myself seriously. I just was having a good time.

The four of us once went to Hawaii together on a vacation--this was when we first bought the farm on Kauai--and did some paintings of the farm as it was then. He did some, and I did some. We were invited to go to Jack Waterhouse's farm at Kipukai for a few days. So we took our paints and stayed at Jack's place for about three or four days. He had a Japanese cook who cooked all our meals. She would come in and say, "Supper ready; you come now?" We would say, "Well, just a minute," and sometimes we would be an hour later, we were so engrossed in what we were doing. I did twelve paintings down there, some of which I discarded or gave away, but there are two or three that I kept from that vacation.

Hughes: Were they mostly oils?

Gerbode: They were all oils then. More recently I switched to acrylics.

We were both members of the Bohemian Club, so I began to put a painting into the spring exhibit of the Bohemian Club and also into the so-called Ice House Show up at the Grove. Then I guess about twelve years ago I decided to do a Christmas card every year. I haven't done this year's yet, and here it is almost November.

I've enjoyed the painting, although I don't take myself seriously. My philosophy is that a painter should paint what gives him pleasure, and if you get to want what somebody else wants, then you're worried about that and are not so happy.

Sailing

Gerbode: I've gotten a few other hobbies since then. So about twelve years ago I decided.... I'd been looking at that bay out there all my life and had hardly been on it. I decided that wasn't right. If I was living by this bay and I liked the water, then I should get a boat. So I did some research on it. One day I was in New York during

Gerbode: the New York Boat Show, so I went over to the Boat Show, which is one of the biggest in the country. I saw a boat which seemed to fit what I wanted. So I put a deposit on it and I asked a friend who goes by the name of Commodore Warwick Tompkins, who is one of the most famous sailors around the bay, if when he was in the East he'd look at it and see if it would be suitable for San Francisco. He did, so then I bought it, and he got it rigged for me. I decided the best way to learn how to sail it would be to race it and go on as crew. Commodore Tompkins got a very good crew together. I took the most menial job on the boat each time, but at least I learned how to sail it.

Hughes: You didn't know any of these people beforehand?

Gerbode: I knew Tompkins slightly, but the others not at all.

Hughes: Was he part of the crew?

Gerbode: He was the captain.

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Gerbode: He's got a tremendous ego. If you do something slightly wrong, he'll just blast you openly on the boat. I finally told him, "I can't sail with you anymore, Commodore, because you give me an inferiority complex," which is what he always tried to do. Even experienced sailors would [get] this treatment. We won a lot of prizes. I've got a few things at home. This was the boat, that one in the middle there. [points to photograph] It's a thirty-three-foot sloop.

Hughes: It's a beauty.

Gerbode: It was a very solid boat, not a very powerful racing boat, but with a good crew and good sails and knowledge of how to sail in the bay, we managed to win quite a few races. But it was always a chore. You get the team lined up, and then one member might call up and say, "My wife's got a backache, I can't come." Then you don't have somebody for a key position for the race, and you have to try to find somebody else. It takes time, and it's always a worry. I always had to bring the food down for the whole crew and arrange to have everything fixed that got broken during the race and get the boat cleaned up. So I finally gave up racing. I also decided that I wanted to get a larger boat.

[telephone interruption]

Gerbode: I talked to my friends here and in the East who were serious sailors, and they said one of the best commercially made boats is the Swan line. They're made in Finland. So I began to get

Gerbode: literature on it and discovered that the boat I would want is a forty-one-foot boat, and I finally order one. I sold my Luders to Tom Plant, and I bought the new Swan, a forty-one. It came out on the top of a Finnish freighter, and it was very dirty and had been improperly mounted on the deck so the company had to spend a lot of money to get it cleaned up. It was over there in dry dock for over a month, while they cleaned it all up and fixed all the little things that were damaged on the trip.

I sailed that Swan forty-one for about five years. Everybody who's got a boat wants one smaller or bigger. I was staying with Tom Plant up in the San Juan Islands, where he has a beautiful house. We were there one night having dinner, and along came a Swan about the same size as mine and anchored right in front of the house. So we got in a little power boat and went out to find out who owned this Swan. It proved to be a dentist here in town. He invited us aboard. He'd sailed all the way up there with his wife and newborn baby and I think one other crewman. It was quite apparent that this boat, which was forty-four feet long, was much more capacious and much more suitable for long cruising than my forty-one. So I thought, well, maybe I'll get one like that. So when I came back I talked to the Swan people here, and they said, "Well, we have a forty-four in Annapolis. We brought it over to have it shown at the Annapolis boat show, and we were thinking of bringing it out here to show at the boat show in Newport. We'll give you a very good price if you'll let us show it down south during the fall boat show." I said, "That's fine." The boat was at the Newport boat show as the queen of the show. They got it all dolled up. People had to sign in advance to go see it.

It's a bigger boat so it takes more physical labor to sail it. But we've had a lot of fun on it. I can sail it with one other good sailor. But I usually like to have two people with me in case there's an accident of some kind, because you at least have two people left to do everything. It's very strong and beautifully built. I've got four people who have been on the boat a lot. So I usually get one or two of them to come along, because they know what to do. I don't really have to do much myself, except steer it.

A Brush with McCarthyism

Hughes: Would you care to tell the story of your wife and the problem with the Communist affiliation?

Gerbode: My father-in-law was a founder, with Ray Lyman Wilbur, of the Japan Society, which later became the Institute of Pacific Relations. He was very active with Wilbur, in improving our connections with Japan. There were a great many Japanese coming into the country at that time, and he felt that Japan was close to us. [He was also interested in Japan] because of [his connections with] the Hawaiian Islands, where there were a great many Japanese coming over as laborers. So Mr. Alexander was very keen on keeping good relations with Japan.

The Institute of Pacific Relations got to be a little bigger than just a small, local organization. They opened an office in New York, mainly for fund raising. They put the office in charge of a man, Mr. Carter, who later became very friendly with the Russians. I guess through him the FBI began to think that maybe it was a Communist front organization.

Hughes: When was this?

Gerbode: This must have been '38, '39, somewhere in there. My wife and I didn't have much to do with it. We gave a small contribution. Once in a while we'd go to something that was organized for the Japanese, usually in association with diplomats who were sent over. Mr. Alexander made contributions every year because he was a founder.

Then we began to [hear] that it was being considered kind of a Communist front organization because of this fellow in New York. Once you get your name down in the FBI with anything like this, you've had it. Some of the people connected with the organization and some of the neighbors were at a party in Pacific Heights. Somehow the FBI spotted that party as being where the people in the red cell, so to speak, were going to be together. They catalogued everybody that went into that place.

Hughes: Unbeknownst to you at the time.

Gerbode: I was away overseas in the war. They got my wife's name, and also that her father was a founder of the Institute of Pacific Relations, a principal backer and therefore suspect. Meanwhile she had been sponsoring liberal causes in town. Nothing Communistic, but liberal causes, such things as the Planned Parenthood organization.

Hughes: [laughs] A well-known red front organization.

Gerbode: Right. She would take public stands on the liberal side once in a while. This was considered not very good by the FBI at that point, because McCarthyism had started. Then anyone who'd had any connection with anything that was even slightly liberal was investigated.

Gerbode: When I got out of the war I was asked to become a consultant for the Veterans' Administration Hospital [in San Francisco]. All of a sudden the appointment was held up and I was investigated by the FBI. The appointment was not granted because of these [associations with the Institute of Pacific Relations]. So I had to hire legal counsel. I got Dick Guggenheim, a friend, and Paul Bissinger, my neighbor, and Joe Moore, my friend, all good solid Republicans and about as straight as you could imagine, to testify. We had to have a hearing downtown in front of the FBI and the Veterans' people. It was a very sordid business. The sad part to me was that I thought I had a good war record. I'd been overseas and gotten six battle stars and a unit citation and a promotion. I thought that was pretty good, enough to warrant being a consultant for the Veterans'. When you sit down in front of these FBI fellows, they look at you as though you were a criminal. They can't tell you anything. They can't sympathize with you. They just stare at you and ask more questions. It really is the most disgusting, disheartening thing that you can possibly imagine.

Finally that appointment went through, and then I was asked to become a consultant to--I've forgotten which position it was in Washington. It might have been as a member of the National Research Council. That was held up for a long time. Finally the Assistant Secretary for Medical Affairs, Frank Berry, who had been our surgical consultant in Europe, came to my rescue. He was my friend in Washington. Once when I was visiting him in New York at another committee meeting, I said, "Well, what's happened to that position they asked me to [take]?" He said, "The same old business concerning the IPR."

Hughes: So even though you got the Veterans' Administration appointment--

Gerbode: They had to go through the whole damn thing again.

Hughes: --it was not taken off your record.

Gerbode: Nothing is erased from your record. It is impossible to get your record out of the FBI. I could say you're a Communist, tell an FBI person and cook up some fictitious [story]. It'll go into your record, and it'll stay there forever.

So I guess Frank Berry [told] them that I was a good, law-abiding citizen, he'd been with me all during the war, I had a good track record, and everything was absolutely clean. I guess he got it straightened out in Washington, because later on I've been on four or five other commissions back there, and that stuff has never come to the surface again. But I'll tell you, it's a very sickening

Gerbode: thing. I never told my wife during all these investigations why the FBI was investigating me. She knew something was going on, that I was going down there, but I never told her a thing about the party she went to.

Hughes: Because it would upset her.

Gerbode: I didn't think she had done anything wrong, and so why bother her with it.

IX TRIPS

[Interview 13: April 12, 1984]##

Russia

Hughes: Would you tell me how your trips to Russia came about?

Gerbode: The first trip I made was to a joint meeting of the International Cardiovascular and International Surgical Associations in Moscow. It was a scientific meeting with quite a few participants from other countries in addition to Russia. The Russians actually put on a very good meeting. They had everything well organized and they had large meeting halls. The equipment they had to record and to hear the various talks was beautifully operated.

I would say that the Russians did not produce very much that was original or new. Most of their papers were statistical, and some of them were even not very good statistically. However, I think the people who went rather felt that it was a worthwhile meeting. This lasted about five days altogether. We had a very good understanding for Russian medicine and Russian surgery as a consequence of that meeting.

Later on President Nixon went to Russia where he was asked to work on a collaborative program with the Russians in science. This was a time when he was doing very well with the Russians, and they agreed to have a collaborative program, more or less across the board, in science. So when he came back they set up committees in various categories. For example, they had a committee on arteriosclerosis, and one on emergency surgery. Another was on congenital heart disease. They had people in this country and in Russia assigned to these various committees, and they were supposed to have joint meetings, have scientific presentations, and discuss the problems relative to these various categories.

Gerbode: I was appointed chairman of the committee on the surgical aspects of congenital heart disease. There was a committee in Russia under a Professor Boris Burokovsky of the Bukalev Institute in Moscow, which is the biggest institute relative to heart surgery in Russia. I appointed a committee in this country of about five or six members, and Burokovsky appointed a similar committee in Russia which was supposed to work up scientific data for presentations.

Our committee then went to Moscow and met with Burokovsky at the Bukalev Institute and discussed what the themes should be in congenital heart disease. In other words, we didn't think that we should encompass all the various aspects of congenital heart disease because that would be too much, so we chose a couple of themes which might be identified as subjects that could be discussed bilaterally between the two countries. We set up a time for the first meeting. This was set for a year and a half or so after this initial more or less business meeting.

Everything was documented carefully by Russian secretaries, and in due time this was all approved with the official sanction of the government. Then we decided on a date. We then went back to Moscow and had a joint meeting in one of their big halls, and the presentations were more or less on the subject matter which we had chosen to be important. There were an equal number of papers from the Americans and from the Russians. These papers were all presented in an abbreviated book form, and this was distributed in due time to all the members of the committees.

Hughes: Did you find that the congenital problems were similar in Russia and the United States?

Gerbode: I really think the congenital problems are almost the same worldwide.

Hughes: So it was really obvious which ones needed attention?

Gerbode: Yes, and the terminology connected with each one was pretty well known between the countries. I think you'll find the same incidence of congenital heart disease in most countries. Some countries, perhaps Alaska, among the Eskimos, might have more than some of the other countries, but I'm not even sure of that.

The subject matter was quite pertinent and worthy of discussion. and I think the presentations were generally quite good. However, I think the American presentations were, if I may say so, much more advanced and new than the Russians'. The Russians, I thought generally speaking, were playing catch up, if you can use that term.

Gerbode: Obviously they were behind in technology in developing methods of treating congenital heart disease and therefore their results were not quite as good.

However, the participants got along fairly well. The social programs arranged by the Russians for the Americans were quite good. They took us to a number of dinners and luncheons and that sort of thing. Lots of drink. Lots of vodka. And lots of toasts.

Hughes: When you say that they are behind in medical technology, does that imply that they're not keeping up with the world literature?

Gerbode: Well, they, for example, had to make their own heart-lung machine, which was not very good, being a copy of an American heart-lung machine. Their respirators were mostly not Russian respirators; they were copies of Western respirators. One was made in East Germany. Some were made locally in Russia, but were not very satisfactory. Their intensive care unit, where the seriously ill patients were taken care of, was about ten years behind our level of competence. They had decided some years before we went there that monitoring of patients requiring intensive care was important, so they had bought a very big console from Italy to monitor various parameters in these sick people, but they could never make it work. It was sitting there like a white elephant in their intensive care unit, which means that then they were obliged to measure very simple things with rather out-of-date methods.

Hughes: Why do they put up with inferior technology?

Gerbode: I don't think their industries were advanced enough to do it. For example, just the matter of tubing. They didn't have enough tubing to use disposable plastic tubing for every case. So then they used rubber tubing, which they then cleaned and sterilized and reused, which is a very primitive way of doing it, because you can't really clean rubber tubing once you use it and people get febrile reactions and other things from it. There's one thing in its favor and that is it's cheap if you use it over and over again, but cheap at the expense of the patient.

They had made a ball valve, for example, which was a copy of our Starr-Edwards ball valve, not very satisfactory.

Hughes: What is to prevent them from buying a heart-lung machine, for example, from the West?

Gerbode: Well, they started doing that; they finally bought a monitoring system from Hewlett-Packard. It was a long time being delivered, and they kept writing letters to me and telephoning to see if I

Gerbode: could get the delivery time speeded up a bit. Hewlett-Packard kept telling me that it was being made for them by an Eastern factory of Hewlett-Packard. Eventually they got it, and I think it's working all right.

Hughes: But that is an option for the Russians.

Gerbode: It was an option, yes, but it wasn't in the very beginning. In the very beginning I think they rather felt they could do all these things themselves, but then they couldn't. The same thing is happening with the Chinese. The Chinese don't have the money, which is one big difference, but they know what they should have and they try to make it. They've done a fair job of copying Western devices.

Hughes: Are you saying that the Russians do have the money?

Gerbode: Oh, they certainly have enough to put a person into space. That's millions of dollars.

Hughes: But it's a question of whether the government would allow that kind of money to be used for [medicine].

Gerbode: It's a matter of priority, sure. I'm sure if they felt that medicine and medical devices were a high priority they could do a lot better than they're doing.

Hughes: How much do they rely on developments in the rest of the world?

Gerbode: I would say that the answer to that is how much original work comes out of Russia--very little. I think the best thing they ever did in recent times was to develop stapling machines to make intestinal anastomoses. It didn't take very long for American companies to meet that challenge and produce their own instruments, which are quite good, maybe even better than the Russians, I don't know. But that was one thing the Russians did originally which was innovative and quite good.

Hughes: Can you explain why there is so little innovation in a country the size of Russia?

Gerbode: Oh, I think it's just a matter of the emphasis being placed on the people that have ability. If you follow people's real ability, you can make things for space, or automobiles, or whatever. Priority is established from above.

Hughes: You said that you got an understanding for Russian medicine and surgery. Was that because you were actually taken around to different hospitals?

Gerbode: Yes. They had meetings and presentations in hospitals, and they produced their best figures and their best case reports. They tried very hard to put their best foot forward. One of the principal problems of the Russians is they never admit that they're not first-class in any category. If they did, they'd probably have their heads cut off as individuals. If you ask them if they've ever done a certain thing, they'll say, "Oh yes, we've done that. We did it years ago," or "We've done that a thousand times." They cannot say they never did it. And it isn't that they don't want to as individuals; it's because they don't dare say what is really true, which means that present Russians cannot be intellectually honest. That's the biggest deficiency I think our people have found with them, that they are not intellectually honest. And they can't afford to be as individuals. It's sad.

The Chinese, on the other hand, are mainly very intellectually honest. If they haven't done it, they'll tell you, or if they've done it twice, they'll tell you. They try very hard to make their own instruments when they can't buy them. And they'll apologize for having tried and not having done a very great job, but they made their best effort.

Hughes: Did you get a feeling about how successful the Russian medical system is in caring for an average patient?

Gerbode: It's pretty hard to find out about that, because you don't have any real figures on it. From what I could gather, they're doing very well with emergency services. Their ambulance services in the big cities I think are quite good from what I could gather, and getting people quickly to the right hospital with emergency ailments.

Hughes: Is their system of training and qualification similar to ours?

Gerbode: Much, I think, depends on whether somebody under whom you're working likes you and whether you're a good member of the party.

Hughes: So politics does play a--

Gerbode: Politics is terribly important. Nobody coming up this ladder will ever say anything bad about anything in the system, even their own unit. They can't afford to. So self-criticism in the sense that we know it in this country or in England, let's say, just can't exist, and it can't exist because it's not practical.

- Hughes: I know in China there's a subcategory, if you can call it that, of the barefoot physician; is there anything comparable in Russia?
- Gerbode: No, I don't think so. They sort of categorize the female doctors in this category. But I saw some very good female doctors when I was there. One of the best heart surgeons they have is a female.
- Hughes: Are women more highly represented in the system than they are in this country?
- Gerbode: It's very hard to find a female surgeon at all in this country. But they do accept them there, because it's a matter of work, and if they can do the work, they let them do it.
- Hughes: Why were you appointed chairman of the committee on congenital anomalies?
- Gerbode: I don't know. You never know where these things originate. Maybe it was because I had done so many open heart cases early on in congenital heart disease. I've written a certain number of papers.
- Hughes: What was the national umbrella under which this committee fell?
- Gerbode: It was something like National Cooperative Effort or Association with Russia in Scientific Matters.
- Hughes: It was an entity unto itself.
- Gerbode: Yes, it had a budget established by Congress and run by a committee in Washington.
- Hughes: It met only one time?
- Gerbode: No. I was going to say that the next meeting was held in Washington at NIH. We again prepared papers. We selected some more Americans who hadn't been to Russia before but who had important things to describe or talk about, and they presented their papers, and the Russians tried to do the same. But actually, by the second meeting it was quite apparent that they were having difficulty finding really good things to talk about, whereas we had some pretty good stellar performers to talk about their work. Anyway, it was very amicable, and we had nice luncheons and dinners in Washington for about three days and decided that the next meeting again would be in Russia.

Gerbode: So we all went back again. At that point I decided that I would rather not be chairman of the committee any longer, because I had other things to do, and I felt that I'd made my major accomplishment by getting it going. So I turned the chairmanship over to Henry Bahnson, who is professor of surgery at the University of Pittsburgh.

Hughes: Was that your decision to pick him?

Gerbode: Yes, they accepted my recommendation and Henry was made chairman of the committee. I participated in the committee for one year after that.

Hughes: What responsibilities does the chairman have?

Gerbode: The chairman has to get people to present their best work from this country and to get them to go to Russia or present the material in Washington.

Hughes: [The chairman] actually chooses the individuals?

Gerbode: Yes, I think I originally picked out ten people. Then the second time around we used some of the old ones and some new ones, and then Bahnson had to pick the ones for the next go-around.

Hughes: Where was the money coming from for these trips?

Gerbode: It all came out of an allocation from Congress, a budget developed for the effort. We have a budget like that with the Chinese at the present time, too.

Hughes: But nothing with Russia anymore?

Gerbode: I think the committee is still operating, but I'm not sure when the next meeting is going to be.

Hughes: So it is an ongoing thing.

Gerbode: To a certain extent it's ongoing. When you talk to the chairmen of other committees, the overall result has been that the Russians probably got a lot of information from us, and we got practically nothing from them. It wasn't that they were holding anything back; it was just because they didn't have too much to offer that was really first-class. The people involved are very likable.

Burokovsky is a very likable, stout man. His daughter was in terrible trouble from a simple operation. I think it was something like an ovariectomy. The anesthetic was not very good so she had

Gerbode: cardiac arrest, and then she got pulmonary complications of resuscitation. There were several long distance calls, of which I got one: "Should we do this or do that for her?" Finally we settled on sending a young fellow from Boston to go over and help out the situation. I'm merely saying that this is an example of their realizing at high level that something special was needed, but they were not able to do it locally.

Hughes: Do they read the world literature?

Gerbode: Yes, they have all the literature. There's no question about that.

Hughes: Does the average physician speak or read English?

Gerbode: No. Most of the people in the big centers speak and read enough English to get by. But it doesn't go very far in depth.

Hughes: But enough so that they can read the English literature?

Gerbode: Yes. There were a few of the Russians whom we met who were fairly outspoken about the system. I don't wish to mention their names because somebody may read about them and they might get in trouble.

Hughes: What sort of things were they saying?

Gerbode: They were having trouble getting proper equipment, proper things for their patients. One of the professors had a daughter, and she got to like an English correspondent. I don't know if anything was present more than like, but they got to the point of wanting to correspond, and all of a sudden the letters were terminated by the postal service.

Hughes: Would you say that the Russian physician has a similar position in society that the American does?

Gerbode: No, I wouldn't think so. I think the people in society who are in the driver's seat are the members of the Communist party who have official appointments. Burokovsky, who was the professor of the biggest heart unit in all of Russia, lived in a small apartment with two bedrooms, very meagre furnishings, a rickety old elevator.

Hughes: Was he on a salary?

Gerbode: Oh sure.

Hughes: There is nothing approaching private medicine?

Gerbode: Oh no, nothing at all. I suppose somebody who's a farmer or something like that might bring in a goose or something and give it to the professor. [laughs]

I've been on the list to help with Russian committees in medicine who come to San Francisco, because I've been identified with these committees I've been on. They very often call me when one of these delegations comes here, and I give them a cocktail party or supper or something.

I'll tell you something that probably shouldn't be in the record, but one of the last delegations which came through last year was a group of specialists, and the chief of pathology for all of Moscow was in the delegation. The delegation otherwise was led by a professor of surgery in Moscow who's a terribly nice fellow, very polite, has good manners, and gets along very well with the Americans. I like him very much. Anyway, the group came here. I had some hors d'oeuvres and a buffet supper lined up for them. The hor d'oeuvres vanished in about two seconds. Then I noticed that the professor of pathology, head of all the pathologists in Moscow, had disappeared, and I looked around and I couldn't see him. So I finally came to the library, and he was sitting on a stool in front of the fireplace, smoking and blowing the smoke up the chimney because somebody told him I didn't like people to smoke in my house. [laughter] And he did the same thing after the buffet supper was finished.

Well, there's another great difference between the Chinese and the Russians. The Chinese are born with good manners. They know what to say and what to do and how to act naturally. The Russians never do. You have a feeling that everything they do and say is more or less drilled into them, and you're never quite sure what they really think or believe. The Chinese are just the opposite. What they say is usually quite honest and very straightforward.

Hughes: Do you think this is anything to do with the political situation?

Gerbode: I think they're born that way. I don't know how you get that developed into a gene. There's a big difference in dealing with people.

Hughes: It sounds as though you couldn't have a very intimate conversation with a Russian.

Gerbode: Oh, never. Particularly if they don't have good manners and they're not intellectually honest, then you can't ever have a really decent conversation, because sooner or later you make a remark about something over which there's a slight controversy, and then they will always

Gerbode: avoid any personal statement about it, and they'll say only what is generally accepted. Otherwise you deal entirely with platitudes--the weather, the country, simple things that everybody will accept as being reasonable discussions. You don't discuss sex or crime or alcoholism or robberies.

Hughes: Or politics.

Gerbode: Or politics above all. Oh, they're interested in our country. They ask you questions about our country, but they would never have an opinion themselves.

China

Hughes: Tell me the circumstances of the two visits to China.

Gerbode: Professor Y. K. Wu is a charming man whom I met before the revolution when I was a resident in surgery at Stanford. He liked me. He came over from the Rockefeller Institute in Peking to have a tour of the country and to work with Evarts Graham in St. Louis for a while. Afterwards he went back to Peking and became the first trained thoracic surgeon in all of China, did the first big operations, and became a leader in the field as chief of, I guess, thoracic surgery at Peking Union Medical College. Then the Chinese revolution came along, and since he was an intellectual and since they terminated all teaching in China, he was shipped off to the country to be an ordinary dirt farmer. He had a little house in Peking--I think he had two children and his wife--the government simply took half of it away and gave it to somebody else. So his family had to share the house with an unknown family, while he was off being a farmer in the country. Luckily, he wasn't killed. A lot of the intellectuals were killed by the Chinese at that time.

In any event, after the revolution was over, he was reinstated.

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Gerbode: It's not the old Peking Union Medical College; they never restored that to what it was before, because that was completely American in conception and financing by the Rockefeller family and the Rockefeller Foundation.

Hughes: Was that pride that they didn't reinstate it?

- Gerbode: I suppose so. In any event, it's now called the Capital Hospital and has its own budget from the Chinese government. Y. K. Wu began to develop his former friendships in this country and got enough money to travel around and meet some of the people he had known when he was in the old teaching university there, and began to develop a program of cardiac surgery, as well as pulmonary surgery. He arranged to have some of his young people sent around to clinics here and there in this country for training, to be brought back and then put into good hospitals in China. His program is still going, but unfortunately now our government has stopped us from giving any foreign doctors any clinical responsibility, and there's virtually no money from them either.
- Hughes: Who was responsible for instituting that policy?
- Gerbode: That's a policy of the United States government.
- Hughes: Dating from when?
- Gerbode: About three years ago [1981]. So this terminated all the foreign fellowships. I had all my foreign fellowships terminated then, too.
- Hughes: Was that fear of competition?
- Gerbode: I think mainly it was because so many people came from underprivileged third world countries and wouldn't go home. South America is a prime example where hundreds of men came up here after they finished their medical school, went into training programs, and then just didn't want to go home anymore.
- Hughes: Did the AMA have a role in this?
- Gerbode: The AMA took a position, I think, of believing that the programs should be curtailed. So anyway, it was very difficult to have the Chinese come over here, and it's still difficult, except if they come over and simply are observers. If somebody can pay for them, they can come if the chief will let them come, and they'll observe. For example, last year six Chinese from a whole team in Peking were sent over and they observed for a year at the Pacific Medical Center. But that's very difficult, too, because if you can't really let them do things or be responsible for patient care, all they can do is watch and guess what's right. But it's not the full way to train anybody.
- Hughes: Obviously this policy hurts the rest of the world; but doesn't it also have repercussions for this country?

Gerbode: Well, it does certainly--the world has been saturated with graduates of our training programs. Now there are so few of them here. Many of them, I think, are going to England, where it's become difficult too, or Germany, where it's also very difficult. It's now much harder for a foreign graduate to get into any kind of a training program outside of his own country.

Hughes: What would a young Chinese with ambitions in surgery do?

Gerbode: About the only thing he can do is get a traveling fellowship, either from somebody in this country or through our China committee. There is a committee set up in Washington with federal funds, a cooperative committee very much similar to the Russian one, where people are selected to come if they have a place to go back to and if the Chinese will pay for part of their experience in this country and if somebody will accept them. But when they get here, all they can do is observe, go to rounds and watch operations.

Hughes: Would their preference in general be to come to this country, rather than Britain, for example?

Gerbode: Yes, I think so. We're still the predominant country, although there are quite a few going to England and some to Germany and Scandinavia, too.

Hughes: Did you get any impression of how much influence traditional Chinese medicine still has on everyday practice?

Gerbode: Well, that's a very curious thing, if you're talking about acupuncture and herb medicine.

Hughes: Yes.

Gerbode: All the villages have a traditional Chinese medicine department, and it looks like some of the stores we have downtown in Chinatown with all these herbs and bottles around. A traditional Chinese doctor will write out a prescription of herbs for a given patient. They mix it up just like we mix up a prescription in our drugstore, and the patient drops by to take it.

Now, why do they retain these things, particularly acupuncture? You go into the hospital and they have a section devoted to taking care of patients with acupuncture. Which operations do they do under acupuncture? Once in a while they can get a patient psychologically prepared to, let us say, have an atrial septal defect or something relatively simply done with acupuncture, but that patient has been verbally trained to accept acupuncture, and also he's

Gerbode: under a fair amount of intravenous medication, like morphine or demerol. So it is well known among cardiac surgeons, for example, that you can do lots of operations with intravenous demerol and oxygen. In fact, I wrote a paper on it once. I did about two hundred cases that way.

Hughes: With the patient ostensibly conscious?

Gerbode: Well, he's half conscious, but he can't feel anything because the intravenous demerol knocks out his pain centers.

Hughes: And do the Chinese use demerol?

Gerbode: You never know how much, but they do use intravenous medication. So if you ask one of the higher authorities in any one of these big clinics, they'll say, "Well, about the only time we use acupuncture these days is for head and neck surgery." For some reason it works a little better to use it for operation above the clavicle. I don't know for sure what the reasons for that are, but that's what is true. Also, the other thing that's true is they always had an anesthesiologist on standby.

Now, the other reason for maintaining traditional Chinese medicine is that the Chinese politicians believe that it's still very good treatment, and probably some of it is.

Hughes: It's probably politically expedient, too.

Gerbode: That's the whole point. They don't dare say that Western medicine is better. So in every one of these big centers they have a section on traditional Chinese medicine supported by a federal budget, and also they send people to this country as missionaries of traditional Chinese medicine who are trying to convince the outer world that it's still good. I've had some come to me in my house. I had one of them give a lecture here once. Not very convincing, but at least on record when he went back home he could say he gave lectures on it here, there and elsewhere.

I'm probably talking it down a little bit more than I should, but the Western-trained people who've been here and in England, Germany, and Scandinavia, don't use it except maybe occasionally for political reasons. Now, in the country I guess it's a way of giving [patients] what almost amounts to a placebo, by giving them some herbs to make them be sure that they're being taken care of-- until the point that they have a tumor, then obviously they'll take care of it another way.

Hughes: Is there a formal system of education for the traditional medicine?

Gerbode: I think so. They have courses.

Hughes: But it's not a four-year medical school.

Gerbode: No, I think it's mainly courses within their normal curriculum.

Hughes: There were two trips to China?

Gerbode: The first trip was organized by Y. K. Wu. He had one American, one Frenchman, one Swiss, one Englishman, and one Romanian. Y. K. had enough political power to say, "I would like to have these people come over and talk on various aspects of medicine." He asked me to talk on a certain part of cardiac surgery, and he asked the other ones to discuss something that they'd been particularly interested in. Our main meeting was in a relatively small town, Hanchan, and this was the first meeting of the Chinese Medical Association in fifteen years.

Hughes: Why was that?

Gerbode: Well, because of the revolution. They asked me to give the opening introduction, the good words, which I managed to put together properly. But to look at the mass of about two thousand physicians, all in the same gray coats, in this big hall, was really something, and to know that this was the first time they'd had a formal meeting in fifteen years. They housed them in various buildings all around the town and fed them in big halls.

We put on a program of emergency surgery, cardiac surgery, and coronary surgery.

Hughes: Did you have the feeling that you were telling them things that they hadn't heard before?

Gerbode: Yes. I'm sure they hadn't been able to read the literature on all these subjects.

Hughes: What about their ties to Russian medicine?

Gerbode: That had terminated abruptly a year before, although in some of the hotels they still had, for example, "restaurant" listed in English, and then before that on the same strip was "restaurant" written in Russian, so you knew that they had been around most places. But by the time we got there no one hardly even mentioned the word Russian.

Gerbode: They took very good care of us. We stayed in an old hotel which had been built by the French many years before. It was quite old-fashioned. We had hot water. They brought us tea to the room in the morning. We had rather standard meals in a big hall. Coffee was very difficult to get in any quantity or quality.

For the first meeting to Russia, for example, my English friend, whose name I won't mention, said, "Frank, you know, the Russians have finally learned how to make coffee out of grounds." Which is a typical English remark. In Russia they'd serve you an egg or a piece of bread or toast or something, and then after you'd finished all of that they'd bring in this terrible coffee.

Hughes: Do you care to say anything more about the China trip?

Gerbode: Yes, I would like to say that the first trip impressed me with how friendly and honest they were. We never locked anything. The regional Communist officials, the men who are really in charge of the Communist party, came to a dinner party. They were very friendly. It was difficult to communicate with them because they couldn't speak English, but they had interpreters there. Everything we said on the stage at those meetings was translated right away. They put on a Chinese opera for us. They took us to the theater where acrobatics were being put on, which was fantastic.

I took a long train trip from Shanghai to Peking, which is really something. I had to share a compartment with Y. K. Wu. It was really kind of an uncomfortable trip. The sanitation facilities on those trains were just like the Russian or the old French. Nobody seemed to clean them up.

Anyway, we got to Peking and we were put in a very nice, modern hotel in Peking, which was filled with business people--Americans, English, Europeans. They took us to the famous Peking Duck Restaurant for a big feast and to a symphony concert in a great hall. I think that hall held something like six thousand people. Then we went to the Great Wall in private cars. They just treated us very beautifully. The meals were interesting. Breakfast was certainly much better than the Russian breakfast. They had coffee and tea and beer at every meal. Pretty good beer.

Hughes: Breakfast?

Gerbode: Yes. They had eggs and cereal and rice for breakfast. What you miss in all these countries, Russia as well as China, is fresh green vegetables. And the only things we really got in China were green beans, but no lettuce. Once in a while some tomatoes or

Gerbode: cucumbers. Cucumbers seemed to be generally [available] in Russia and China, mainly Russia--I guess the cucumber lasts a long time, and you can ship it around and nothing much happens to it. And they're easy to grow.

They took us to Canton, where we saw the great trade building where all their Chinese goods are on display for foreign buyers. Rugs and silks and even tractors and automobiles. They're about twenty years older than our vintage, but they looked reasonable well made.

Hughes: And a lot of foreigners looking at them?

Gerbode: Yes. Well, they're really there to buy, I guess, silks and rugs and things like that. This rug [in my library] came from Peking, for example, not from the Canton trade fair, but from the so-called Friendship Store, which is where foreigners can buy things.

After being in Peking for several days, we visited a number of hospitals and talked with the staff and discussed their equipment and what they were doing. They were all terribly friendly. They hang on to their friendships. I keep getting letters and postcards from them even now.

Hughes: Did you give rounds?

Gerbode: Yes.

Hughes: So the purpose really was to get information from you.

Gerbode: Yes, but also to exchange ideas. What actually happened was that Uncle Sam paid for our transportation to China and the Chinese paid for everything else. We didn't spend any money at all except if we wanted to buy something in the Friendship Store. That was my first trip.

Then a year and a half went by, and the China Scientific Cooperation Committee--that isn't the exact title--was developed in Washington. This was to develop mutual understanding between the two countries, very much like the Russian idea was, except it seemed to me it was built on individuals rather than groups of people representing specialties.

So they asked me if I would go over again, and I said, "Yes, under what circumstances?" They finally told me they'd like to have me go to at least one medical school and give some lectures. And would I go to Shanghai? I said all right.

Gerbode: So I went over as an individual, gave lectures for three weeks in a medical school in Shanghai, had rounds with their patients, watched them operate, and discussed their operations.

Hughes: Was this on contemporary problems in heart surgery?

Gerbode: It was all heart surgery. They documented every word I said, and they copied all my lantern slides. They worked me from eight o'clock in the morning till twelve noon, and then I went to the hotel for lunch. They picked me up at one-thirty again, went back till four.

Hughes: How did you find the state of cardiovascular surgery?

Gerbode: Well, actually I could see that technically they were very able. Their machines weren't perfect. They made them themselves, copying our machines of maybe ten years before. The way they handled their blood was a little old fashioned and probably made some patients sick. There's no plastic industry in China, so they again used rubber tubing, which they washed and reused. That produces a lot of problems.

Hughes: Did that influence the length of operations that they'd be willing to tackle?

Gerbode: It made people sick; that's the main thing.

Hughes: But they had to do it anyway.

Gerbode: Yes. This main hospital was really something. It was an old building, built about 1850. Cement floors, which were worn down from thousands and thousands of people walking over them. The walls had once been covered with some kind of plastic which was peeling off. Everybody in the whole hospital, including staff, were fed the same meals. The patients are all served with a bowl and a soup plate. It was usually rice and a little meat broth of some kind, very little vegetable of any kind. These things were hauled around the hospital on great carts, getting kind of cold before they were delivered. In the place where the doctors ate it seemed to me the meal was almost the same.

The elevator was used for hauling the meals, the patients, the staff, and everybody. An old rickety elevator which looked as though it were going to break down any minute. Not very big.

Hughes: Does this imply that there isn't money in China for medicine?

Gerbode: They just don't have enough money to do what they want to do yet. They're trying. I guess what they're doing mainly now is putting their money into industries that will bring them some currency, like

Gerbode: oil. They're developing a big coal-mining project, which the Bechtel Corporation is helping them with, of taking the coal out of the mines and putting it in water pipes. They pulverize the coal, put it in a suspension, ship it somewhere in a big pipe where it's dried out, made into bricks, and sold to the people. That's a cheaper way of doing it than putting it on a railroad train.

My daughter Maryanna decided she wanted to come over and join me, so she got a visa from the Chinese consulate for herself and for her daughter Sarah in about five minutes, and all of a sudden they appeared.

Hughes: Unbeknownst to you.

Gerbode: I had a suspicion they were coming, but I didn't know exactly when. But they got through the customs by themselves, and one morning they just appeared at the hotel. Sarah jogged every morning. The first morning she was out at five-thirty, and she came back at seven. We were having a little breakfast. She said, "Papa, there are people all over the place jogging and brushing their teeth and everything, old people and everybody." She couldn't understand how they were all out there early in the morning jogging and doing all these things. For some reason the Chinese like to brush their teeth out in the street early in the morning. She was a little afraid at first, but she found out she could jog among them and get back to the hotel.

They were there for ten days and had a grand time, and was I glad to see them, too! You know, there are a lot of little things. For example, in all the hotel rooms they put hot water for tea every morning in a thermos bottle. These thermoses are standard. They must make millions of them because they're all the same all over the country. So you can either have tea, or coffee if you've got the coffee to make it out of. I brought some instant coffee along with me. And the meals are about the same. You have lots of chicken and rice, gravy, and once in a while some beans or cucumbers. In the hotels people order maybe four or five things, and there's all this tremendous waste, because they don't eat it all. I don't know what happens to the extra, but I suppose a lot of it's thrown away. And the inevitable beer at any meal; you can get all the beer you want.

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Gerbode: The brandy is terribly strong and not very palatable. But in Peking, of course, there are many things to see. Outside of the Great Wall you can go to these gorgeous museums and all these [building] which

Gerbode: were built for the emperors thousands of years ago. And I must say, you have to admire the craftsmanship. It's beautiful. Their engravings and paintings are magnificent. So finally that was over and we left by plane for Hong Kong.

Saudi Arabia

Hughes: Would you like to tell me about the recent spring trip to Saudi Arabia?

Gerbode: Again, you don't know how one's name gets in the hat in any of these things. But anyway, they have two great hospitals in Saudi Arabia for specialized surgery. One is in Jedda, which is on the coast, and one is in Riyadh, which is about five hundred miles away, to the northeast. Jedda is the great port of Saudi Arabia. Their port facilities are great. Riyadh is the capital. In any event, I was asked about six months ago if I'd be willing to go to an international symposium there to be put on by a group of men chosen from all over the world, one or two from each country, to celebrate the thousandth open-heart case they'd done at this hospital in Jedda. They have beautiful equipment and a nice modern hospital.

The organizer of the symposium was a man who, I guess, had some training in this country. He spoke perfect English, had an absolutely gorgeous wife, as many of the young Arabian and Bedouin women are. When they get to be about thirty years old, they begin to get fat and rounded. But when they're young, they're gorgeous.

In any event, the meeting was held in a big central auditorium, and we were all brought over with all expenses paid. First-class going and coming. We stayed in an American-style hotel, a Hyatt Regency, if you can believe it. There's also an Intercontinental Hotel there, all built by the Saudis with the participation of various countries, principally the U.S. The country is dominated mainly by American or English architects and builders. However, there are other countries which sometimes contribute some architecture or building skills.

In any event, there were about ten surgeons in our group: three from this country, one from Taiwan, one from China, one from Switzerland, two from England, one from Scandinavia and one from Canada. We formed a kind of a clinical faculty, and they had already decided what we were to talk about, having been warned six months

Gerbode: before. Actually, what they had selected for topics was really what they had read each man had contributed to the science of cardiovascular surgery.

Hughes: Whom do you think had made these decisions?

Gerbode: The surgical director of the hospital. The invitation came from the minister of health. I mean, that's where the money came from. I don't know how much the minister of health had to do with planning it, but he was there every day. He's a rather huge man, very jocular.

Hughes: A physician?

Gerbode: Yes, I think he was a physician. Somewhere he'd picked up a Ph.D., too. His last name was something like Jaboom.

The wives were all invited, too, and expenses paid for the wives as well. All first class. It probably cost nine thousand dollars per couple to bring us there. Anyway, we were met at the airport. My daughter Maryanna and I came in from London. Earlier they had some question about whether they should pay for Maryanna since she wasn't a wife. But I simply said, "I'm going to bring her, so if you don't want to pay for her, then that's your problem." But they paid for her. Very few women go out in the daytime. But they do go out at night, usually in couples. Maryanna went around almost everywhere, except in sacred places, with two other ladies who were part of the delegation.

Hughes: What sort of feeling did you get about Arabian medicine?

Gerbode: Pretty hard to tell, although their figures are quite good. The mortality rates that they discussed were very acceptable.

Hughes: What about their equipment?

Gerbode: Equipment is first class.

Hughes: Because they have the money.

Gerbode: They have the money and they can buy anything they want.

Hughes: Probably very little of it is indigenous.

Gerbode: Practically nothing is indigenous except manpower.

Hughes: And yet the people at the head in the past have all been foreigners, British or American. Is that still true?

Gerbode: Yes. For example, in Riyadh their most famous hospital is a specialized hospital for special services, which means brain surgery, chest surgery, malignancy, heart surgery, kidney transplants. Anything like that goes to this hospital if they can get in. It's only two hundred and fifty beds. The hospital was designed by an English architect. He didn't pay his subcontractors, went back to England, was arrested, and presently, I think, is in jail. He designed a hospital with virtually one long corridor, about a quarter of a mile long, with rooms on each side.

Hughes: What was the concept there?

Gerbode: You'd have to ask him; I don't know why. It'd take about half an hour to walk from one end to the other. But the rooms are fantastic. The operating rooms are the best you can imagine. Their xray department, instead of having one body scanner, they have two; and the lab where they do all the lab tests, instead of being designed for two hundred and fifty beds, it's designed for a thousand beds. Any kind of test you want on blood or urine can be done there, and they have all these automatic instruments for testing blood.

Hughes: Are they training their own people?

Gerbode: Yes, they're trying to train the Saudis, but they don't seem to be learning very fast.

Hughes: Why is that?

Gerbode: I don't know why.

The king, of course, determines everything in the end. There are little stores all over the downtown. He'll give the fellow an interest-free loan to set up a little store. Then the fellow gets people to run the business, usually a Lebanese. Then when it gets going, he kind of retires from the scene. He just comes in and checks on it once in a while. It's kind of demeaning for him to stand there all day long and run the business. So as a consequence, they're not really learning.

Hughes: The same is true in medicine?

Gerbode: I think it is. One of the English doctors in the hospital in Riyadh said, "Well, we make rounds at seven o'clock and make all the decisions; at eight o'clock the Saudis arrive, and the decisions are already made."

- Gerbode: In the heart program, they have two teams. They have American teams from Houston, which go there in groups of three or four and stay about three months each time. They're paid very well by the Saudis. Then the same day at the same time they have a Saudi team doing heart cases, maybe with an American or an English surgeon helping.
- Hughes: Is there any difference in the cases?
- Gerbode: I think they try to give the foreign team the hardest cases.
- Hughes: Surely there must be some system of training?
- Gerbode: Not all, but most, of the residents are Saudis.
- Hughes: So they would be assisting the American team from Houston?
- Gerbode: Yes. Opportunities for learning are there, all right.
- Hughes: Is the main reason for the Houston team being there to do the cases, or is it to pass on its knowledge?
- Gerbode: It's supposed to be demonstrating and training.
- Hughes: Then why keep the teams so separate?
- Gerbode: Well, I guess they feel they can train the residents better by showing what an American team does.
- Hughes: Do you think the Arab team had received training in the United States?
- Gerbode: Some members have been here. But now it's hard for them to get real training because of this law that's been passed forbidding foreign M.D.s to participate in clinical training.

Australia

- Hughes: Shall we go on to Australia?
- Gerbode: The Australian trip was a meeting of the Pan-Pacific Surgical Society, which was started in Honolulu in the early 1920s. It has a meeting every other year, and all the meetings until this one have been in Honolulu. They've brought people from all over the Pacific

Gerbode: basin as members and attendants at the meetings, and they also encourage people from the mainland United States and even from Europe to come. Hawaii is such a nice place to go, particularly in the winter. So the attendance has always been very good, and the meetings have always been very successful.

This time the Australians and New Zealanders, who have quite a large membership in the society, persuaded them to have the meeting in Sydney. It was quite a successful meeting. They had a little over a thousand people signed up for it.

Hughes: Even though people are escaping local winters, it is a serious medical or surgical meeting?

Gerbode: Oh yes. The subject matter is always really quite good. It may not be brand new on the scene, [but] it's contemporary and first class.

Hughes: Do they tend to be leading figures in that particular field?

Gerbode: Yes, they're usually first-class people. The other thing they have which is quite good, is very open discussions. If you get a lot of big leaguers there who are discussing a given subject in which they are knowledgeable, it's very interesting. They'll really talk straight about it.

One thing they didn't do this time, which they do in Honolulu, is have breakfast meetings at seven o'clock in the morning where they have very frank discussions of the subject matter.

Hughes: So there's an assigned topic for the breakfast.

Gerbode: Yes.

Hughes: I know you gave the introductory talk, "Turning Points in Cardiovascular Surgery," that opened the meeting. Do you know how that came about?

Gerbode: It came about because one of my trainees was in charge of the planning committee, and I guess he wanted to do something nice for the old man.

Hughes: [laughs] That was all there was to it?

Gerbode: I had enough friends around, I guess, so they accepted the idea. John Wright is the man who did this. He's one of the most successful cardiac surgeons in Australia. A very, very nice guy. While I was there I saw five men who'd trained in my department.

Hughes: All doing well?

Gerbode: All doing very well.

Hughes: Anything more that you can think of on the subject of trips?

Gerbode: I could say something about Australian medicine in general. They're going through a terrible upheaval because the ministry of health and the politics of the country is so radical, so socialized, that they are really trying to squeeze into the English type of national health insurance, doing it in various slithery ways which are too apparent to the doctors, and the doctors are rising up and complaining at every turn of the road. In fact, in one or two towns they've actually had a strike rather than adopt the measures proposed by the minister of health. The minister of health came and talked to the group. He sounded either like an out-and-out Communist or a dictator.

Hughes: Is it very much along the lines of the National Health Service in Britain?

Gerbode: Yes, it is. But the Australian doctors don't want it, and they're fighting it. The same thing is happening, actually, in Canada.

Hughes: Will it come to be, do you think, in both places?

Gerbode: Well, it's coming to be--it's a matter of degree, I guess, how much they can shove down the doctors' throats. I may sound like too much of a rightist on this subject to you, but actually the things they say about the medical profession, bad as it may be in spots, are really quite awful.

Hughes: Such as what?

Gerbode: Well, they try to point doctors out as only being interested in making money and not caring about the patients, fees being too high, and all that. I think they are too high in some respects, but you don't have to change the whole system because some people are not being nice. They're really having some battles down there.

X FURTHER COMMENTS ON MEDICAL/SURGICAL TOPICS

[Interview 14: April 23, 1984]##

NIH Support of the Multidisciplinary Team in Cardiovascular Surgery

Hughes: The National Heart Institute awarded its first grants in 1949. In 1959 when Stanford pulled out and Presbyterian Hospital and the Institutes of Medical Sciences came into being, NIH granted your heart institute \$400,000 a year for about ten years. Had you received NIH money before that?

Gerbode: I think we had some before 1959, but we didn't get a big grant until they decided to move the medical school to Palo Alto. I believe part of NIH's feeling in the background was that they wanted to retain some sort of an educational research facility on the campus of the old medical school, because after all, historically it was the first medical school in the West and had trained many physicians and made many contributions in research. Since many of the faculty decided not to move to Palo Alto, I think NIH basically was rather anxious to keep it going.

Furthermore, we had a very vigorous research and development program in cardiovascular surgery. They recognized this and were happy, I guess, to fund it. In any event, when I prepared the first application, the committee came out and surveyed me about it and said, "You should apply for everything you will require." I put in an application for over a million dollars a year! In the end they gave us a little over \$400,000 a year, which really was the basic reason we were able to put together a first-rate cardiovascular group and institute on the old medical school's campus. This went on every year. We had, of course, to tell what we were doing, and NIH had to [base the new grant] on what our progress reports amounted to. It wasn't just a handout. We had to prove ourselves every year, which I think we did quite well.

Hughes: What sort of things were they looking at?

Gerbode: Publications, improvements, development, contributions to the field, training.

Hughes: Do you think the fellows program had a large impact?

Gerbode: The fellows program made a difference, because they obviously felt that I could train people, and so they gave me a training program. They gave me a very small amount, about \$5,000 per year per trainee, which was enough money in those days. I had a fellow paid for by NIH for at least five years, and I had many other fellows during that same time. I raised money privately to support them. These fellows are now scattered all over the world and very happy apparently to have been here.

Hughes: Was over \$400,000 an unusually large grant at that time?

Gerbode: It probably was in the upper 10 percent of the big grants in the country, but people like Mike DeBakey were getting equal amounts of money, and I guess there were other centers in the country that NIH felt had the possibility of developing something unusual. I imagine that the University of Minnesota would always emerge as being one of the early groups to get large grant money, because it was doing such a good job and had been doing it for quite a while.

Hughes: Government intervention in medicine and the sciences is largely a postwar phenomenon. Do you think that NIH can be credited to a certain extent with the fact that cardiovascular surgery when it began to take off was largely an American phenomenon?

Gerbode: Well, it's certainly true that without NIH help, we wouldn't have gone nearly as far as we did in the beginning, or since then. The American Heart Association helped a good deal, but it doesn't have the amount of money NIH has.

For example, I got Mr. Bramson, who was our engineer for many years, to come to our group in the early '50s. He didn't know anything at all about blood or the physiology of the circulation, but he was a fantastically intelligent man and a very fine engineer. So we put in an application to the American Heart Association to have him appointed as an established investigator, and for some reason they made him the first engineer in this category in the country. No one before had ever gotten one of these grants from the American Heart Association without being an M.D. I can assure you that their money was extremely well invested, because throughout the years Bram made a lot of very good contributions in the field of cardiovascular surgery.

Hughes: Was that the beginning of the teamwork concept in cardiovascular surgery?

Gerbode: Yes, that was the first time, really, that people realized that to push this field forward, you couldn't depend entirely on M.D.s; you had to have Ph.D.s and others who could back up the whole program. So we brought Ph.D.s to the bedside, so to speak, and said, "Here's the problem with measuring this or that, and how would you solve it?" We had a number of people like Bram who worked with us at the bedside on clinical problems, and they helped us a great deal to solve them, and established the principle of a team working on the clinical problems of sick people. It's amazing how quickly they could understand the physiology of a clinical problem and offer suggestions.

This is particularly true later on when we got the monitoring people in to work with us. They were all Ph.D.s and not very knowledgeable about the physiology of sickness, but they could see what we wanted to find out, and they applied their methods to solving the problems, and were fantastic in how quickly they understood and came forward with suggestions and solutions.

Hughes: IBM was the corporation that was first involved with computerized monitoring [at Presbyterian]. Was that the first time they had collaborated with medical people?

Gerbode: No. They had worked with the Mayo Clinic before that, but they wanted to go into a more serious large-scale program, and they looked over the country to decide where they'd put their money. And for some reason they came to us. I think one of the reasons was that we were small and had a small group who could work well. We had many patients, and there weren't any other things that would interfere with the research program. We could do it pretty much on our own, and they liked that. They had looked at Texas and various other places before they came to us.

Hughes: This was early '60s?

Gerbode: Yes.

Hughes: Did other centers have people like Bram?

Gerbode: The other centers began to have people like Bram.

Hughes: So it wasn't by then unusual to have a bioengineer on the team.

- Gerbode: Oh no. By that time whole schools of biomedical engineering were developing, and one of the biggest ones was in Chicago. They were turning out biomedical engineers who were Ph.D.s really faster, I think, than they could be absorbed.
- Hughes: Do you think the heart-lung machine was the original impetus?
- Gerbode: Part of that was the development of the heart-lung machine; there's no question about that.

The Artificial Heart Program

- Hughes: In 1964 the National Heart Institute drew up a crash program for the construction of an artificial heart with an energy source to be completely implanted within the patient's chest. The first artificial heart was to be implanted on Valentine's Day, 1970, and as we know, this goal was not reached. Do you know anything about this program?
- Gerbode: I think the artificial heart program really was pushed forward faster than anything else by the fact that Christiaan Barnard put in a heart in Cape Town, South Africa. This was kind of embarrassing for this country to have a South African do this when we had spent so much money on this sort of thing. So they quickly looked over the whole field and decided they'd better get an artificial heart program going, too.
- Hughes: Now who is they?
- Gerbode: I guess the advisors of NIH. Then there was a group under Kolff in Salt Lake who had already developed the artificial kidney, and they were a very busy, active research group and were doing excellent work. It was natural for them to take on an artificial heart program, since they had developed an artificial kidney. So they got some of the first grants, but there were other grants given to various centers in the country, including our center under Dr. Hill.

I remember being on an artificial heart program committee at NIH. We made certain recommendations to NIH about the development of an artificial heart program. As far as I can remember, NIH didn't follow any of our recommendations, but they developed an artificial heart program anyway. They just didn't do it the way we suggested doing it. But they did a good job.

- Hughes: I gather that you thought that such a program was feasible?

Gerbode: We suggested it was feasible, and we suggested more or less how to do it. One of the things we suggested was that business should collaborate with universities or laboratories in developing an artificial heart. We in fact suggested certain business firms to work on this, because it's a big engineering problem.

Hughes: And did NIH take up that aspect?

Gerbode: Yes.

Hughes: Do you remember where they did things differently?

Gerbode: No, I can't remember where they put their emphasis.

Hughes: The Houston group received most of money?

Gerbode: The Houston group got some of the money but not any more than anybody else. I think probably more money went into Salt Lake, the University of Utah, than almost any other place.

Hughes: And did that boil down to track record?

Gerbode: Well, they funded them because they had a laboratory going employing techniques and research people on this other problem [the artificial kidney].

Targeted Medical Research

Hughes: What do you think about very specifically targeted research such as this?

Gerbode: Well, another big question that came up at the same time as the artificial heart program [was] whether or not NIH should put their money into targeted research. It's interesting that you should ask the question, because before that decision was made, people would consider research something that would just come along out of the minds of research people. But then when you look at various problems in research, or in medicine, it's very easy to think of applying targeted research to certain basic problems. Well, for one thing they decided arteriosclerosis was very important and they should have targeted research that would develop methods of understanding and preventing arteriosclerosis. That's targeted research; they put a lot of money into arteriosclerosis research.

- Gerbode: Another way of getting targeted research is to have a prominent senator or president or vice-president get a disease, and all of a sudden there's targeted research developed around that particular disease.
- Hughes: Do you have any idea whether in the long run this is a profitable way of spending money?
- Gerbode: I guess the term "profitable" means whether in terms of spending money there's a bigger yield for the money spent in doing it that way. I can't answer that question. Right now, for example, there's a great deal of thought about work in immunology, and things like interferon and other methods of controlling the rejection phenomenon are very important. Whether they want to call it targeted research or not, they're putting an awful lot of money into it because it's terribly important. Scientists as a whole realize it is important, so they're spending a lot of time on it.
- Hughes: It seems to me that the fact that government in most countries now (at least most governments in the Western world) plays a larger role in research than it ever has done in the past changes the whole tune of things, because you now get people making decisions about what a scientific effort should be, when in the past that has been largely left up to the individual. Basic research led to applications which the individual himself may never have foreseen.
- Gerbode: It's a very complicated process, because each individual's application for money goes through a peer group that analyzes his proposal and what he wants to do. That peer group has a tremendous amount of influence over whether or not it gets funded. I would say on the whole the peer group approval of an individual research worker's proposal is a very good way to do it. On the other hand, it does subject his ideas to a committee for committee approval, which sometimes is not very good. However, there's no question that in this country we've made many more contributions with our particular system of giving money for research than any other country. But I must say that there is excellent research product in other countries with a completely different system, mainly due to the fact that individuals by their ability can produce things which sometimes are better than the committee activity.
- Hughes: On the other hand, research has gotten to be such an expensive proposition, particularly in the medical sciences, that it's no longer the individual scientist working alone in his lab that really can hope to make many contributions, so the individual is almost forced to become a part of the group in order to produce.

Gerbode: Yes, and this influences the peer group evaluation of a proposal. One of the first things they look at is whether or not the laboratory is adequate to do what the man wants to do and whether he has enough help to do it.

The Transventricular Mitral Valve Dilator

Hughes: We talked a little bit about the transventricular mitral valve dilator, although I don't think we called it that, and I was wondering if you'd tell me a little bit more about how you came to devise it.

Gerbode: We were using finger fracture methods of fracturing the mitral valve, and occasionally using an instrument to cut the valve. We very quickly found that cutting the valve was not very satisfactory because you couldn't cut it blindly through the atrium or through the ventricle with an instrument without sometimes cutting the wrong place, and therefore making a tight valve an incompetent valve. This was found out early on by Cutler and Beck when mitral valve surgery started becoming a reality.

Once you felt these valves and fractured them with your finger, you realized that the commissures were giving away and opening up rather than some other place on the valve. Both commissures would usually open because they were stuck together less securely than the rest of the valve. So various people devised these valvotomies. One very good one was under Andrew Logan in Edinburgh, who developed one which was used a lot in Europe, mainly in the United Kingdom.

My concept was a little different in that I controlled the amount of fracture of the valve gradually with a special little screw attachment which would let you open it slowly. You could feel the valve at the same time, so that you wouldn't tear the tissues apart too quickly. This became quite an acceptable valvotomy instrument in this country.

Hughes: But not abroad?

Gerbode: Yes, it was used abroad, too. Finally the Pilling Company had the instrument made in Germany. They felt that the Germans could make it more cheaply and better than they could in this country.

The First Open Heart Surgery Team on the West Coast

Hughes: I thought you should say a little more about the fact that your team was the first open heart surgical team on the West Coast.

Gerbode: I guess this came about because we were so busy trying to put together a heart-lung machine, and we really had quite a few patients around the place, mainly because of our very fine pediatric cardiology outpatient clinic. This was under the direction of Dr. Ann Purdy, who was Dr. Holman's wife. She had a lot of patients with congenital heart disease. Then we knew that there were plenty of patients that needed care.

So we devised a number of heart-lung machines, with Dr. Osborn being in charge of the early ones. Later on Mr. Bramson came into the picture and designed several. We had various emissaries from the University of California who were in charge of thoracic and cardiovascular surgery there come over and take a look at what we were doing, and were a little dubious that we could do it, I think. However, in time they realized we could do it.

Some of our early efforts in repairing congenital defects of the heart were not successful, mainly because the machines we were using weren't entirely good. They were the best we could design at the time. However, teamwork is very important, and we very soon realized that if we made a mistake or didn't work out something the way it should be worked out, that we should make the improvement right away before the next case. And this is what we did. So eventually it became rather successful. This was the first open heart surgical team, I guess, on the West Coast. Actually it was a little bit ahead of the Houston group, who came along six months or a year later.

Hughes: Would you like to say something about the membership of that team?

Gerbode: The membership was really based on Mr. Bramson, Jack Osborn, and my fellows, who were all very anxious to get things going. They realized that this was something that had a big future, so they worked very hard in the laboratory and also clinically to push the field forward.

Hughes: How much of the operating were the fellows doing?

Gerbode: They always assisted me, and I would let them do the parts of the operations that I felt that they could do safely. Some of them were better than others. Some of them were so good they could do the whole thing. Others would do parts of the operation. Eventually, when they went back home, they did everything, and very well.

Hughes: What were the main types of operations that you were doing in those early days?

Gerbode: Pulmonary valvotomy was one of the early cases, because that was something you'd get in and out in a hurry.

Hughes: Now this was with the heart-lung machine?

Gerbode: Yes. We did some pulmonary valvotomies without the heart-lung machines, blind ones; they weren't very satisfactory. In fact, we had Mr. Russell Brock come over from London as a guest professor, and he did a number of blind pulmonary valvotomies without the heart-lung machine, but we in the end had to do them over again because they were not very adequate. They were adequate for a time but not adequate for the long haul.

Hughes: Was the main problem not being able to see?

Gerbode: Yes, and not having time. It takes time to do these things right. So then we went from pulmonary valvotomies to atrial-septum defects--that's the hole on the right side of the heart. They were easier to do, and the results were very satisfactory. So we did a group of atrial-septal defects.

The main thing, of course, in those days was to do operations which would give the pediatricians and the cardiologists confidence in what you were trying to do. So you couldn't have very many complications and fatalities; otherwise they'd turn off the spigot. entirely. But we were able to select the cases that in the early days gave us good results with very low mortality and morbidity rates. Then as confidence grew among the referring physicians, we took on more complicated cases. We had a lot of tetralogies, blue babies, to do because we had done a lot of Blalock procedures on them before--a palliative operation--so they were more or less our patients because we had operated upon them before. So as soon as the machines got good enough, we began to operate upon tetralogy patients for complete repair, and we were lucky because we found the mortality rate was pretty low and the success rate was really quite good.

Hughes: What was the success rate mainly due to?

Gerbode: I think probably just the fact that we were operating everyday, and everyday we learned something and we applied what we learned.

Hughes: Do you think you were putting more care into the selection of patients than other teams?

Gerbode: No, we were just ahead of them.

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Gerbode: Later on as the work progressed, we found that there were a lot of surprises, as we got into more complicated cases. But then we had more time so that we could sort out the problems and end up with a satisfactory result.

Hughes: Time because the heart-lung machine was improved by then?

Gerbode: Yes. The heart-lung machine was improving all the time, too.

Hughes: Was there much change in the diagnostic procedures within that period of ten years or so?

Gerbode: Yes, cardiac catheterization and angiocardiology were becoming more accurate, and the cardiologists and roentgenologists were much more accurate in making a diagnosis, which was important.

Hughes: Was that a matter more of people than the instrumentation?

Gerbode: I think it was a matter of experience. We had a very fine angiocardiological machine, one of the first on the West Coast. It was great for about three years, and then another one came out which was much better. The field was moving ahead so rapidly that you had to expect that these big companies coming into the picture would see the advantage of having something better, and they were working very hard all the time, too, to improve things.

Hughes: Were these techniques now accepted parts of a residency program, so that a resident in cardiology would automatically learn catheterization?

Gerbode: Yes, residents in cardiology--they were fellows, really--originally learned how to do cardiac catheterization under guidance from the senior people, and the residents in roentgenography would learn how to interpret the angiocardiological procedures. It's very easy for a roentgenologist to inject the dye, but the hard part is interpreting what the dye shows them inside the heart. So this was all part of the learning process. Every patient who was studied this way, was studied by the senior people as well as the junior people. And the surgeon would always look over all the studies, too, with the roentgenologist. Sometimes they wouldn't agree, but most often they all agreed that the anatomy was such-and-such and proceeded accordingly.

Endocardial Cushion Defects

Hughes: The subject of endocardial cushion defects. You're known for devising surgical procedures. Can you explain--?

Gerbode: As we were doing more and more atrial septum defects, we began to encounter patients who had not only an atrial septal defect, but other abnormalities of the valves on that side of the heart. So as we became technically more able, we began to repair some of the more complicated forms of atrial septal defect with the valve abnormalities, and I suppose we were lucky in being able to sort out some of these complex anomalies and correct them.

Luckily, we also had a fairly generous supply of these patients, so that we were able to learn rather fast. There's nothing more spectacular than to correct an atrial septal defect with valve abnormalities and the endocardial cushion defect. The result is so spectacular. You take a child who has severe heart failure and really make a normal child out of him.

Hughes: Between the beginning and the end of the operation; is it that clear?

Gerbode: Well, from the beginning of the operation till he recovers from the operation. One spectacular case was a young woman with a severe endocardial cushion defect and heart failure. I was able to sort this out and correct it. She had two valves involved and two holes in her heart, one in the ventricle and one in the atrium. Two valves that were split. Well, I was able to patch up that heart, and she walked out of the hospital ten days later, and subsequently got married and was a very strong housewife. Then she got pregnant; her first-born male child had the same defect that she had. She was an awfully good mother. This child was in heart failure almost from the very beginning. I did a palliative operation to cut down on the flow of blood to the child's lungs to hold him for a while, because I didn't think I should operate for complete repair when he was so young. These days they're doing these operations in a younger age group. However, the palliative operation held him for about three or four years, and then he began to not do very well even with the palliative operation. So I did a complete repair, and he had exactly the same combination of defects that the mother had. I was able to correct them the same way as I had done in the mother. Every Christmastime I get a picture of this boy and a little note from the mother telling me how well he's doing.

The Membrane Oxygenator

Hughes: We talked about the membrane oxygenator, but you didn't bring it up to the final stages with the Harvey Company.

Gerbode: I first met Mr. Bramson at a cocktail party in Paris being given by some local friends who happened to be there, and they invited Bram to come along because he was an engineer with them. They were just about terminating his work with them, which had to do, curiously, with the left-over wood from the lumber industry.

[phone interruption]

Gerbode: Bram said he was not going to be busy with Mr. Heller after a certain time, and I said, "Well, would you like to work on a membrane oxygenator?" "Well," he said, "I don't know what it's all about, but I'll be happy to work on something like that with your group if you think it's very important." I said, "It's going to be very important."

So Bram came on as a consultant. We got him approved by the American Heart Association, as I mentioned previously, and he started working on a membrane oxygenator in our research group, without having done anything before with blood or biology in his whole life.

Hughes: How far along were you with the oxygenator when Bram came in?

Gerbode: We weren't anywhere at all with the membrane oxygenator when I got him. We had some other prototype oxygenators.

So Bram came aboard in our little research group, and we very quickly realized that developing a membrane oxygenator that would be clinically useful was going to take a lot more than just a few weeks or months. So Bram then devised another type of disk oxygenator which was useful to keep things going. It was a disk type of oxygenator, which I used in about three hundred cases, I guess, while we were trying to develop a membrane oxygenator. Meanwhile, he was doing work with Mr. William Tyson, another engineer, and Cutter Laboratories in Berkeley, developing a prototype membrane oxygenator while we were using his disk type of oxygenator. Finally, after a couple of years, we developed a prototype membrane oxygenator, which was clinically very good. The only problem with it was that it had to be put together by hand every time.

Hughes: When was this?

Gerbode: In the early '60s. Bram got some girls to help him at Cutter Laboratories. They put the oxygenator together manually each day. Then the whole problem of sterilizing it had to be developed, but they worked it all out. We developed a prototype membrane oxygenator after a number of years, and then I started using it clinically. I used it in about three hundred cases.

Hughes: Can you remember when you first started to use it?

Gerbode: No, I can't remember. It had to be put together manually by Bram and the nice girls at Cutter Laboratories, and then it had to be sterilized. It was just not very practical. However, it was the first membrane oxygenator in the world to be used clinically in a large group of patients.

Hughes: How did you come to realize that the membrane was the thing?

Gerbode: Well, see, the disk oxygenator was developed on the principle of exposing blood to oxygen in an open chamber. Even though people use this method in a way, it is pretty well shown that when you expose blood directly to oxygen or any other gas, it's not very good for the blood--various things happen--whereas the membrane oxygenator depends upon oxygen and CO₂ diffusing through a membrane, so blood is not directly exposed to any gases.

Hughes: Had you found these things out in your own lab, or was this common knowledge?

Gerbode: No, various other people had begun to find this out as well.

Various Ph.D.s and people working in our laboratory found out various ways of making a membrane oxygenator more satisfactory, and we even developed patents on the way blood went through it. We finally sold our ideas to the Harvey Company, a subsidiary of Bard, and they spent about five years on it to develop a commercial product that could be sold easily, a disposable one. Having done all that, they changed their mind and decided to put all their money into another type of membrane oxygenator built by Dow Chemical Company.

Hughes: Do you know their thinking?

Gerbode: I think probably it's that they'd make more money with the Dow Chemical one and it's more feasible commercially to make it. So the present situation is, our membrane oxygenator is sitting down in Santa Ana in a laboratory with everything ready to go clinically, and they've shifted gears now and are putting all their production into the Dow Chemical one. It's kind of a sad ending to the whole story.

- Hughes: Why did you choose the Harvey Company in the beginning?
- Gerbode: They were very interested in developing a membrane oxygenator, and we had the patents and the concepts.
- Hughes: We talked a little about choosing patients for new types of operations, and you mentioned in connection with the mitral valvotomies that in the beginning you were interested in choosing good risk patients, mainly to keep the supply of patients coming. I was wondering in general, though, if you had a policy about operating on poor risk patients.
- Gerbode: In general, the cardiologists--and this is not only true in our institute but throughout the world--would only offer patients to the surgeon in the beginning if the patients were really desperate. This was a hard hurdle to overcome. We gradually got around it, I guess, by having good results with the patients we did do, and bringing some pretty desperate cases through. But as I mentioned before, one of the ways of getting around the skeptical cardiologists was to have the patients that were referred come directly on the surgical ward, and I skillfully arranged to do that as much as possible. Then I would pick the cardiologist who was most surgically minded to see the patient and bypass the skeptical ones. Then eventually the skeptical ones had to come on the bandwagon, too.
- Hughes: What do you think was the deciding point when a patient wasn't a very good risk? I'm thinking on one hand of the consideration of what you might be able to do for the patient, and on the other hand what the outcome of the operation might have on the statistics of a new procedure.
- Gerbode: Of course, everything changed as soon as we got the heart-lung machine and started doing a lot of open mitral operations. We then could see the valve, and then later on got artificial valves which could be used to replace the diseased valve, and that made the picture quite different. Now there are very few cardiologists who would not allow the surgeon to try to repair a diseased valve in a very sick patient, because the results are overwhelmingly so much better with surgery than they are with medicine.
- Hughes: In the beginning when this procedure was still very experimental, there must have been a lot of gray areas where you weren't really sure that you could benefit the patient or, for that matter, the future of the procedure.

Gerbode: Yes, it was a very complex situation, and I guess in the long run it depended on what the surgeon's mortality rate was in those days and how his patients did afterwards. If the mortality rate consistently wasn't so great, and generally speaking the patients were better, then more patients would come for operations.

Hughes: As simple as that.

Counseling Patients

Hughes: I know you are against smoking. Have you ever played any role in the anti-smoking campaign?

Gerbode: I support any anti-smoking organization that comes along and asks me for support, because I think it's terribly important.

Hughes: What about counseling patients?

Gerbode: Well, I used almost to refuse to operate upon patients who were still heavy smokers. I wouldn't actually turn them down, but I'd make it very difficult for them to have the operation without quitting, because it makes a lot of difference. Bad mitral patients who are heavy smokers have a much harder time getting through the operation. The respirator has to be used for a longer period of time, and they require a lot more care. So I would point this out to them and tell them, "If you want to get through this operation more easily, you'd better stop smoking for a month or so so your lungs get a chance to improve a little anyway." To get some of the women who were smokers to stop, I'd use various tricks. One thing I used to tell the women who were smokers and had serious heart disease, "You don't mind smelling like a man, do you?" And the woman would say, "I don't smell like a man." I said, "You certainly do, and if you want people to like you, you shouldn't want to smell like a man." Sometimes vanity would overcome her desire to smoke, and she'd change. [laughter]

Hughes: What about other aspects of heart disease, such as diet and drinking and tension? Were those things that you'd talk to your patients about as well?

Aortocoronary Bypass Operations

Gerbode: Obesity is one of the things that we had trouble with in some patients. But actually arteriosclerosis came into prominence because of coronary disease, and so when AC bypass (aortocoronary bypass) techniques were developed, it was quite apparent that arteriosclerosis was a very important part of heart disease. I elected not to do this operation because I found it kind of a monotonous procedure. So I turned it over to my associates. It has two aspects that are very good. One is that most of the patients are relieved of their anginal pain, and the surgeons are better off financially because it pays very well.

Hughes: Why is that?

Gerbode: The fees in the beginning were set pretty high because the procedure was new.

Hughes: Why is that particular procedure more monotonous than others.

Gerbode: It's just taking a vein out of the leg and sewing it onto the heart. It's not inside the heart. There's no physiology connected with it. It's just mechanical, transferring the vein to the outside of the heart.

Keeping Patients Alive at Any Cost

Hughes: Dwight Harken, another cardiac surgeon, has written in reference to Barnard's all-out efforts to keep Louis Washkanski, his first heart transplant patient, alive despite pneumonia and heart failure and all kinds of things, that Barnard was obligated to do anything he could to save his patient. What is your philosophy about keeping patients alive at any cost?

Gerbode: I guess I've always felt that if I could do something that would make the patient who was desperately ill more comfortable and perhaps prolong his life a bit, it was my duty to do it. There are situations where we are keeping people alive when we know that there's no possibility of making their life better, and it's a terrible drain financially and emotionally on the family. In those situations I agree with what has been recently stated as a position that we should let the patient decide whether he wants to be kept alive any longer or not. Some people have said if they got a cancer or something that was not curable, they didn't want to be kept alive, and I think we should believe in what they say.

- Hughes: The government doesn't seem to be moving in that direction.
- Gerbode: I don't think the government's influencing this so terribly much.
- Hughes: I'm thinking of the Baby Doe case.*
- Gerbode: Well, there, you see, the government has taken a position because there is treatment available, and therefore it feels [the hospital] should apply the treatment. But there are certain congenital abnormalities in children [in which] I think palliative procedures should not be applied. It only prolongs the agony; really it's not very good.
- Hughes: I understand that the United States has a much more liberal attitude toward medical intervention than Britain, for example.
- Gerbode: I don't have any figures on this, but I think that probably we keep trying harder and longer in some of these situations than other countries do.
- Hughes: Do you think that might change with the great emphasis on keeping medical costs down?
- Gerbode: [chuckles] I suppose we might get to the point where the government or insurance companies would say, "We're not going to pay for treatment in this kind of a patient."

Heart Transplantation Programs

- Hughes: Blue Shield of California has recently decided to cover heart and heart-lung transplants for its 1.3 million policyholders in California as long as procedures are performed at Stanford University Medical Center.
- Gerbode: I was at the meeting where this was decided, and voted in favor of it as a consultant.
- Hughes: Can you tell me why?

*The Baby Doe case, which occurred in 1984, concerned a baby born with severe congenital anomalies. Against the parents' wishes, the government required the hospital to use extraordinary measures to keep the baby alive.

Gerbode: They have the best record, and I think to keep the confidence in the procedure at the proper level, those who can do the job very well should be permitted to do it with compensation.

Hughes: So it really does boil down to a matter of statistics?

Gerbode: Yes. Eventually, as other units demonstrate that they can do the procedure with a very low mortality rate, then I think Blue Shield will pay for them.

Hughes: Why was Blue Shield prompted to make this policy decision?

Gerbode: I guess because some of these families have Blue Shield insurance, and unless they have the insurance money to help pay for the bill, it is too hard on them financially.

Hughes: Why would an insurance company take on this potentially tremendous expense?

Gerbode: It's not such a big thing, because there aren't hearts available in volume to make it very much of a burden on the insurance company. Patients have to be carefully selected. [They have to be] in a certain age group with a certain type of disease. That eliminates a great many people right away. Then you have to find a donor that will be satisfactory for that particular recipient. That immediately cuts down the number. It's not like mitral stenosis or a patent ductus or something like that. There are all these limiting factors that cut down on the volume [of heart transplant cases].

Hughes: Was it just sheerly numbers of policyholders that wanted this coverage that caused Blue Shield to consider covering heart-lung transplants?

Gerbode: I suppose the number of families that have Blue Shield insurance, even if there weren't very many of them, who wanted to have their insurance apply to this procedure, would influence that decision. But also Stanford probably applied for permission to have Blue Shield pay for it. I don't think anybody else applied.

Hughes: Isn't there a danger that this will hold back other [heart transplant] programs, including the one at the Pacific Medical Center?

Gerbode: I think it will. It will certainly limit the ones who are trying to get in without too much ability and background.

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Gerbode: However, in time other units will develop their techniques to the point where their results will be equally good [as Stanford's] and then they'll want to be paid as well.

Hughes: I can see that an insurance company stepping in at an early stage in the procedure could very much influence which centers succeed and which don't, at least for the immediate future.

Gerbode: Yes, that's true.

Hughes: Was any of this considered when the Pacific Medical Center decided to start a transplant program?

Gerbode: It was always considered, because the trustees, of which I was one, had to vote in favor of doing it even though we might lose money.

Hughes: Why did you make that decision?

Gerbode: Because we think it's something that's in our realm of capability.

Hughes: And that would override the financial considerations?

Gerbode: Yes, I think so. I think some institutions can afford to do this and some can't.

Hughes: Did you know that the Blue Shield business was coming up when you made the decision to have the program here?

Gerbode: No.

Hughes: Do you think your decision would have been different if you had known?

Gerbode: I don't think so. Blue Shield knew that we had a successful case and were going to continue to do cases. I was on the advisory committee--I think we all felt that eventually other units would have enough experience so that they would be paid as well.

Hughes: Given the fact that there aren't very many patients in this area needing that kind of operation, why do you need [heart transplant] units at different centers?

Gerbode: [pause] You don't need very many, but you need more than one.

Hughes: Is that just the spirit of competition?

Gerbode: I think it's better to have more than one; competition enters into it. I think if two units are trying to do a certain procedure, they're certainly going to keep their techniques sharp.

Etiology

Hughes: Medicine has been called a practical art rather than an applied science, because in general its primary aim is to cure disease. In many cases there is little concern to understand the mechanism of cure or even the cause of the disease. Do you agree that medicine really has this orientation?

Gerbode: No, I don't agree with that at all. I think the physician and the surgeon are very interested in what causes the disease and to understand the mechanism of what caused it.

Hughes: Is that intellectual curiosity?

Gerbode: No, it's not intellectual curiosity. I think it's being intelligent. We can't understand all the mechanisms that produce the congenital heart lesion in a baby, but we've made a great many inroads into understanding how it happens. For example, German measles in the mother has been found out through the medical profession to be a cause of congenital heart disease in babies. Doctors are curious to know why certain types of severe influenza in the first trimester would be a cause of congenital defects. We don't understand the actual intrauterine event that causes this thing, but some people are very curious about it. We're very curious to know why mitral valve disease has occurred, and we find that it's due mainly to rheumatic fever, and that rheumatic fever is caused by a streptococcus. We teach families to give their children antibiotics when they have streptococcal infections. I don't think I fully understand your question.

Hughes: You answered it more or less.

Gerbode: I think also doctors are very good about suggesting abortions in women who have had German measles or some severe illness in the first trimester. That's due to the understanding that the incidence of having a child with a congenital abnormality is much higher than in a woman without this sort of medical background. We're a lot more interested in cause [and prevention] than we are in getting that child for a corrective operation.

Hughes: What you were doing in the dog lab was very directly tied in with what you were hoping to do in the operating room, but do you think that's pretty much true across the board in all the areas of research at HRI? Is the ultimate aim patient application, or is that link sometimes not quite so direct?

Gerbode: I think the ultimate aim is to understand disease better and prevent it or cure it. There's another whole moral aspect of this thing that worried me in the beginning, of being able to operate upon all these children with congenital heart disease, particularly the blue babies with severe congenital abnormalities. I worried for a little while, not very long, whether it was right to keep those children in circulation, because the incidence of congenital heart disease in those children who marry and have babies is higher. But then I said to myself, "I'm being God if I do that. I can't take that attitude. If there is a good treatment available we should use it."

Setting and Controlling Medical and Surgical Fees*

[Interview 15: May 15, 1984]##

Hughes: I was wondering how you establish fees for operations.

Gerbode: Fees are established by custom and also by a schedule which is called the California Relative Value Scale. Each operation has a certain number of units connected with it. A big operation would have more units than a smaller operation. Then you apply the basic fee for one unit to that and multiply it by the number assigned to that particular procedure. However, it's been customary in California for heart surgeons not necessarily to obey that mode of charging patients. Some of them, unfortunately, have been charging rather large fees which I think has been very bad for the speciality as a whole.

The relative value scale in California was adopted by various specialities, and then later was used by insurance companies and units in other states as a basic groundwork for charging for the work done. I helped put together the first relative value scale for cardiovascular and vascular work in this state with a committee for which I was chairman.

Hughes: What sort of criteria were you using to establish the fees?

Gerbode: Well, we just decided if, for example, an appendectomy was worth this number of units, a cardiovascular procedure would be maybe twice as complicated and you would use twice the number of units.

*See the session recorded on 6/21/84, pp. 429-430.

Hughes: What is a unit based on?

Gerbode: A unit is based on what surgeons have been charging over a short period of time before the unit was established.

Hughes: So it's a matter of time and the difficulty of the operation?

Gerbode: Yes.

Hughes: Anything else?

Gerbode: I guess the rarity and difficulty of a procedure has something to do with it. If there has been a complication, this adds something to it as well. It's been working in this form more or less for quite a while and I think that some of the insurance companies simply call a procedure by a given name and they pay just that amount for the procedure to be done.

Hughes: When you say quite a while, do you mean after World War II?

Gerbode: Oh yes. This is all in the last ten or fifteen years.

Hughes: How were fees determined before then?

Gerbode: I guess surgeons just charged whatever they felt their contemporaries were charging in the same field.

Hughes: So the same operation in different parts of the country could be quite a different price?

Gerbode: Yes, that's true. They would charge more on the East Coast than on the West Coast, for example.

Hughes: Why don't heart surgeons hold to these conventions?

Gerbode: In general, they stick pretty close to the convention, but there are a few who take advantage of the situation and charge a lot more.

Hughes: Not necessarily those who are prominent in the field?

Gerbode: These are all good surgeons, but they just have a different attitude about how much they should charge.

Hughes: Do you find that patients nowadays are shopping around much more?

Gerbode: Yes. They are much more knowledgeable about fees too, and they're more apt to ask in advance what the fee is going to be, which is very good. I always told patients the bracket within which the charge would fall and would be sure to stay within that bracket.

Hughes: Are you talking just about the surgery or about the preop and postop care as well?

Gerbode: Well, if we were going to operate upon a patient, we wouldn't charge anything for the preoperative visits nor for the postoperative visits for a year. It's all a one-packaged deal. That's not true for the cardiologists, however. They charge for everything.

Hughes: The anesthesiologist, of course, would be another fee, wouldn't it?

Gerbode: Yes, anesthesiologists earn more money in the United States than any other group of physicians.

Hughes: Why do you think that is?

Gerbode: I don't know why, but it's true.

Hughes: Anything else about establishing fees?

Gerbode: The whole business of payment for operations with Medicare is very shortly going to undergo a great revolution. I think what's going to happen is that the medical profession will be told that it's only going to get a certain amount per operation.

Hughes: Regardless where it's done?

Gerbode: Regardless; the idea being that the easy operations would sort of smooth over the tough ones and even it up more or less. If the hospital hires surgeons as they are trying very desperately to do in Australia--it's still against the law here--then they'll begin to set the fees for the surgeons they've hired.

One administrator in Australia felt that if the hospital hired a surgeon, that he should charge no more than forty-five dollars an hour for his surgery.

Hughes: Regardless.

Gerbode: Regardless. Now, if you can imagine what uproar this occasioned in Australia--I don't think they have a chance of it getting through--but that's the thinking of the administrators.

Hughes: How would an average fee be determined in this country?

Gerbode: Well, to begin with, you use that relative value scale and then surgeons have been charging a certain fee for certain operations for quite a while, so they could average those out. The pay for an

Gerbode: AC [aortocoronary] bypass, for example, would be determined by how much was being charged by the average surgeon for an AC bypass operation.

Hughes: Do you think that will ultimately affect the distribution of surgeons in this country?

Gerbode: If you're asking what effect control of fees, perhaps through hospitals, will have, it'll cut down on the number of hospitals and doctors that are doing that work. Most cardiac surgeons are not overwhelmed with cases. Some are, but most of them aren't. So that means we have a relative surplus of cardiac surgeons. That means that this [control of fees] opens the door for competition, and eventually that's going to occur.

Hughes: Do you think that will be fought by the AMA and other medical organizations?

Gerbode: Well, it depends on how they do it. I think the business of hospitals hiring doctors to do the work is going to be fought very strenuously.

Hughes: Because of the fee-setting policy?

Gerbode: Yes, and also you would get administrators running the doctors, which is not what they like very much.

Hughes: I imagine this will be one of the things that you'll be discussing at the National Academy of Medical Specialities.*

Gerbode: Oh, I think that'll be one of the things under consideration all right. Only I think fees in general will be considered, too, and how to establish a fee.

Hughes: How well is this voluntary moratorium on fee increases working?

Gerbode: I think it's working all right.

Hughes: Do you think it could be kept on a voluntary basis?

Gerbode: I think as long as it's working all right, it should be. What so often happens with voluntary things is that some people begin to break the voluntary rules and then it becomes a free-for-all again.

*The Academy, formed of prominent representatives of the medical specialities, was established by Congress in 1984 to advise the federal government on current medical problems. Dr. Gerbode accepted the co-chairmanship of the section on medicine in March 1984. He died before the first formal meeting of the Academy in 1985.

Artificial Heart Valves

Hughes: I was reading some correspondence written in 1973 with Viking Björk about the use of artificial heart valves and he was wondering if you were using his disk valve. You wrote back saying something to the effect that you had been using the Edwards and Cutter valves. I was wondering why you selected certain valves over others.

Gerbode: I hadn't seen very many patients with Viking's disk valve. But I had seen a fair number of patients with the first Cutter valve, not the cloth-covered one which proved to be a disaster. We very early took on tissue valves made out of the pig's aortic valve and treated with glutaraldehyde.

Hughes: You mean in preference to the artificial valve?

Gerbode: Yes.

Hughes: Why?

Gerbode: Well, because the incidence of thromboembolic complications was virtually zero with tissue valves, whereas it was still appreciable with mechanical valves. Patients on mechanical valves had to have cumadin, a blood thinning drug, and this in itself can produce complications. I remember having seen two patients come in after having a mechanical valve installed and being placed on cumadin and dying of brain hemorrhage.

Hughes: You said in this same letter that you preferred not to use any anti-coagulants.

Gerbode: Now we've seen that the complication rate for tissue valves is lower than it has been for mechanical valves. But the tissue valves are now showing a certain amount of failure after five to ten years. So you have to weigh that against the disadvantages [of the mechanical valves].

Hughes: You mean they simply wear out?

Gerbode: Yes, or get calcified.

Hughes: Is the greater frequency of embolism with the artificial valve just because it is an artificial substance?

Gerbode: Yes, it's a metallic substance and it's more foreign than a tissue valve, you might say.

Hughes: Were you unusual in not using anticoagulants with artificial valves?

Gerbode: No, but if we used the mechanical valve, we had to use anticoagulants because it proved to be statistically better to do so even though there are problems with giving patients cumadin. The problems with not using cumadin are greater. There are a certain number of patients who bleed with cumadin, too. They [may] get massive hemorrhage in their gut or if they get a bad bruise somewhere it is apt to grow into a big hematoma.

Hughes: You've never had to use anticoagulants with the pig valves?

Gerbode: Well, some people felt they had to use anticoagulants in the mitral area because there was a small instance of thromboembolism. But some people still didn't use anticoagulants even though there was a small incidence of thromboembolic complications.

Hughes: Why should there be more incidence at the mitral valve?

Gerbode: Because the flow of blood is slower and not as vigorous. There is more chance of little thrombi forming on the rim of the valve.

Hughes: Björk said in this correspondence that he always used cumadin because that was what was commonly used in Sweden.

Gerbode: He used cumadin from the very beginning, and so did Starr with his valve, and so did the so-called Sacramento valve people, and later on others who developed mechanical valves used anticoagulants, too.

Hughes: Well, when you used the Starr valve, would you use anticoagulants as well?

Gerbode: Yes. We've put a lot of Starr valves in and we used anticoagulants in all of them.

Hughes: Which did you think was the best?

Gerbode: I thought the Starr valve was the best when we first started, because I really didn't know too much about Viking's valve. But now, having looked back at the whole thing, I think Viking's valve has a slight advantage over the others.

Hughes: Which is what?

Gerbode: Well, there are fewer complications with the mechanical aspects of the valve, and I think it just works better for a longer period of time.

Hughes: Was it widely used in this country?

Gerbode: Oh yes! Thousands have been put in.

Hughes: You said in this letter that you hadn't used it very much, but it would be the valve of preference in children with a very narrow aortic root.

Gerbode: Yes, that's true.

Hughes: Why would that be?

Gerbode: The orifice size for the ring which you have to use to hold the valve is bigger than some of the others.

Hughes: You said just a minute ago that the cloth-covered Cutter valve was a disaster. Why?

Gerbode: Well, Dr. [Nina] Braunwald, who had suggested this from a rather limited number of dog experiments, thought that fewer thromboses occurred when the ring was covered with cloth. She thought the tissue would grow into it and make it more like natural tissue. But actually what happened was that it just formed a great nidus for clots. So everybody finally gave up on that, and I'm afraid that Nina Braunwald's reputation has suffered quite a good deal as a consequence.

Hughes: Was she a local person?

Gerbode: No, she was in Boston. Her husband is professor of medicine at Harvard. She was a heart surgeon trained at the United States Public Health Hospital in Bethesda.

Hughes: Isn't she one of the few women to go into heart surgery?

Gerbode: Very few women.

Hughes: Why do you think that is?

Gerbode: It's a tough life (both laugh). I saw a couple of them in Russia who were doing very well. Some of the Russian female heart surgeons are pretty good.

Hughes: You mean technically good. Were they accepted by their male colleagues?

Gerbode: Yes, because they're tough.

Extrapolation from Animal Research to Operations on Humans

- Hughes: I was reading an article written in 1969 by Francis Moore and he said that it's impossible to reproduce chronic valvular disease or congenital heart disease in a dog.
- Gerbode: Well, I think it's impossible to make it identical with what occurs in nature.
- Hughes: So it's the fact that it's experimentally produced. It's not that the dog is not susceptible.
- Gerbode: It's technically too difficult to do it and have it exactly like it is in the human.
- Hughes: I would think this would make a difference when you made the great leap from the dog lab into the operating room. Were surgeons in general pretty well aware that what they had been doing and seeing in the dog might not be replicated in the human?
- Gerbode: Generally speaking, when a surgeon first looks into a beating human heart and contemplates an open heart operation on that heart, I think he really can be very confused with the appearance of it. Most of our knowledge about hearts and how they look and what went wrong are based on pickled specimens. They're kind of shrunken and hard, whereas the living heart is soft and pliable and quite different looking.
- Hughes: Yet you, who have done so much work in the dog lab, wouldn't have had that problem. The living beating dog heart doesn't look that different from the human.
- Gerbode: No, it looks like a human heart. Well, we did experiments on the dog simulating what we thought would be necessary. Sometimes we put in an artificial valve, for example. You just take out a normal valve and put an artificial one in, or create an atrial septal defect and then repair it.
- Hughes: Did you find that in most cases what you had done with the dog held very true for what you found in the human?
- Gerbode: Oh yes.

Consent Forms

- Hughes: Do you remember if patient consent forms were always--
- Gerbode: In the beginning we had no consent forms especially designed for heart surgery.
- Hughes: Were there consent forms of some kind?
- Gerbode: Yes, there were. There was always an operative consent form.
- Hughes: This is going way back to the thirties.
- Gerbode: Way back, yes. But later on when surgeons began to be sued very freely and easily, we wrote another consent form in which we said more or less. "My surgeon has explained all the possible complications and reasons for failure of the operation and I understand the risk very thoroughly and we don't hold him responsible." The words were changed depending on who wrote it.
- Hughes: What was the previous form like?
- Gerbode: The previous form was a simple statement saying I hereby approve my surgeon to perform an appendectomy or whatever it was.
- Hughes: In both of those cases it sounds to me as though the aim is really to protect the surgeon and the institution rather than the patient. Is that not true?
- Gerbode: I don't see how a form like that can protect the patient during an operation.
- Hughes: A form obviously can't prevent an operation from causing some harm, but it could give the patient legal recourse.
- Gerbode: That's after the harm has been done. It wouldn't protect the patient very much during the operation.
- Hughes: It seems to me that the emphasis has shifted somewhat so that now there is an effort to look after the patient's rights as well as the physician's.
- Gerbode: I always had a conference with the patient and his or her spouse. I had both of them sign the consent form so that they would both acknowledge that I'd explained the operation rather thoroughly to them.

- Hughes: Was there ever any problem with signing those consent forms?
- Gerbode: Once or twice somebody wouldn't want to sign it for a while and we'd simply hold up the operation till they made up their mind.
- Hughes: When did lawsuits really pick up?
- Gerbode: Just about ten years ago [1974].

Correcting Septal Defects

- Hughes: You were correcting ventricular septal defects successfully in 1956. Could you describe what you did in those days?
- Gerbode: When you get involved with doing congenital heart cases, among the very first ones you get are ventricular septal defects. We adopted our method of closing ventricular defects based on what little experience there was elsewhere and what we thought would be the best way to do it.
- Hughes: Could you describe it?
- Gerbode: Most of them could not be closed directly with a suture for various reasons, so we used patches of dacron cloth. We cut a little circle out, about the size of the defect, and sewed it in.
- Hughes: Were other people using that technique?
- Gerbode: They were using that same technique too, or trying others. But most of them quickly realized that they would have to patch the hole rather than just try to close it. There are various ways of entering the right ventricle to expose the defect. Mark Bainbridge, working in our laboratory, decided that a transverse incision in the right ventricle was tolerated better than a vertical incision to expose the VSD. Mark is now chief of cardiovascular surgery at Saint Thomas' Hospital in London.
- Hughes: Why would that be?
- Gerbode: Because it's more in the direction of the fibers rather than cutting across the fibers. I think a lot of people have adopted that incision. It also preserves more coronary vessels.
- Hughes: Is that what was referred to as the Gerbode technique?

Gerbode: Yes. [laughter]

Hughes: I read about a hook that you apparently devised in connection with these operations.

Gerbode: Before we had an open heart team and a heart-lung machine we had a lot of atrial-septal defects to close. There were various blind techniques being used for closing the atrial-septal defect. One of them was a Sondergaard technique. Sondergaard is a Scandinavian surgeon who put a circular suture around the defect, guiding its insertion from the outside with his finger, and then he'd tie it, pull it together. That would close it. It was like tying the top of a purse. That worked in many cases but sometimes the suture would loosen after a while and the hole would open again.

Bob Gross devised a method of making a well, putting a sort of funnel on top of the heart with the blood still in the heart because blood would only go up to a certain level in the well. He could sew through the well and close the defect. I tried it a couple of times but I didn't really like it very much. They tried it at the Mayo Clinic too.

I devised a hook; guiding the hook with my left hand I grasped the medial edge of the defect, pulled it over to the outside and when it was pulled over and held that way I'd put a suture through the outside and engage it. I did about thirty ASDs that way. I think most of them stayed closed. It's not a very good way. It's so blind you know.

Hughes: Yes, and having to work fast too. I'd imagine.

Gerbode: Not terribly fast, no. The main thing is not to upset the heart too much; take your time and not upset the heart.

Hughes: In his correspondence with Björk, he mentioned forcing Crafoord to try this technique which would have been the mid-1950s. Why was Crafoord resistant?

Gerbode: I guess maybe he was still influenced by Sondergaard.

Early Open Heart Operations

Hughes: Here's a letter which you wrote to Björk in April 1960. I'll read one paragraph: "We are very busy using the combination of hypothermia in extracorporeal circulation with our new lung. And since August we have done approximately one hundred cases with it and have for comparison another one hundred cases done during the previous six months using milder hypothermia and the Stanford version of the Melrose lung. The last one hundred with the new equipment seemed to have much less reaction to the operation. One the whole, the combination of the two as we are now employing it seems to give us much more versatility and command of the situation. This is particularly true in the more complicated lesions. For example, of the nine consecutive very cyanotic tetralogies we have done recently, we have lost only one and the other eight are apparently completely cured."

Was this an unusual study for those days? You were dealing with two hundred cases all told.

Gerbode: I think we were all running in the same direction using slightly different techniques. I decided that we'd use hypothermia with the heart-lung machine because you didn't have to use the machine as much, which was better, and you could make a heart drier with more safety, and it just seemed to work better.

Hughes: The machine, at that point, was still pretty primitive, wasn't it?

Gerbode: Yes, it was.

Hughes: What was the Stanford version of the Melrose lung?

Gerbode: Melrose came over here from England and brought his machine with him. He changed it a bit after he got it here. We tried it on a series of patients, but it was not a very satisfactory machine.

Hughes: It's that slight modification that he made while he was here that is called the Stanford version?

Gerbode: I've forgotten the details of that now. I don't quite remember what he did about that. But it was too much like a washing machine. It damaged the blood far too much.

Hughes: So you went back to your disk oxygenator.

Gerbode: Yes.

Hughes: Why did you say that the combination of hypothermia and extracorporeal circulation gave you more versatility and command of the situation?

Gerbode: First of all, you don't have to pump as much blood. The less that blood goes through that machine, the less trauma there is to it. You could work under lower blood pressure and this is easier too. The patient can tolerate that lower blood pressure much better if there's hypothermia with it.

Hughes: How were you determining the level of hypothermia?

Gerbode: We just arbitrarily decided that it would be a certain level which was about 32°, about 5° lower than normal.* I guess we found if we went much lower than that, we'd get in more trouble from the hypothermia and if we went higher than that, it wasn't much use.

Postoperative Problems After Open Heart Surgery

Hughes: Do you remember what the main problems in those days were post-operatively? This was 1960.

Gerbode: I think the main problems were associated with postoperative pulmonary problems, and they had to do with trauma to the blood as it went through the machines. We weren't using blood filtration in those days and so there was a lot of debris that went through the machine and got into the patient's lungs and that produced, they call it, the pump-lung syndrome.

A lot of people didn't realize what the pump-lung syndrome was until we began to study the blood after it went through the heart-lung machine. We found platelet debris and little bits of thrombi and sometimes a little bit of the tubing. Tiny bits of the tubing would break off from pumping with it, and they would all go to the lungs and plug up the capillaries of the lungs.

Hughes: So it was more lung problems than heart problems.

Gerbode: Yes. But then there were central nervous system problems too because some of that blood went to the brain and produced little capillary thromboses. A few patients would have central nervous system events

*In a letter to Björk, written in 1960, Dr. Gerbode said that he was using hypothermia to the level of 18° centigrade.

Gerbode: which would be kind of frightening. Practically all recovered from them, but I think that there was probably a little more brain damage than we were able to measure.

I suppose the main postoperative problems were failure to recover as quickly as you expected the patient to. But the main thing, neurological problems. The ones who did revive right away seemed a little bit slow in recovering and some didn't recover. The mortality rate wasn't very high; I'm talking about isolated cases here and there which did not revive as quickly as we expected. It took us quite a while to realize that this wasn't due to hypothermia itself; it was due to the fact that oxygenators weren't really taking care of the damage to the blood properly. We studied this a bit later and found out that blood filtration was the best preventative of serological manifestations after open heart surgery.

An Aortic Valve Prosthesis*

Hughes: There was another letter written in 1962 on an aortic valve prosthesis which apparently you were developing with Franz-Josef Segger. He was training with you at that point. Was that an idea that he came to you with?

Gerbode: No, that valve which we were developing with Franz Segger was one which came out of our own laboratory. We didn't know what to use at that time, of course, so we investigated all the prosthetic material that was available and finally decided on one which seemed to be the most feasible. Franz Segger and I, with the help of a dentist actually, developed a stent on which we could build an artificial prosthesis out of synthetic material. Unfortunately it was made out of material which was mostly silicon and this functioned only for a relatively short period of time. It was the best thing we had at the time, however, but it wasn't good enough.

Hughes: How did it compare to other aortic valves?

Gerbode: Well, there weren't any, really.

Hughes: I saw a reference to a 'Muller.'

*The following discussion of medical and surgical typics was moved from the session recorded on 5/3/84.

Gerbode: Oh yes. Muller valves and also a McGoon valve were developed out of cloth and made into bicuspid valves. I put one of those in once. This was something that would correct the insufficiency and the stenosis, but unfortunately these cloth valves fell apart very quickly.

Hughes: Was your valve ever used on a wide scale?

Gerbode: No, it wasn't. We watched it very carefully and when a couple of them failed because of fracture of the cusps, we stopped using them immediately.

Hughes: Was the design quite different than that of the other valves?

Gerbode: Yes. Our valve was based on the same anatomy, the same appearance, of a normal [aortic] valve. Their valves were bicuspid valves, which were two flaps of cloth which opened and closed. Mechanically they worked all right for a short period of time.

Hughes: Why did they think of changing nature's design? The aortic valve is not a bicuspid valve, is it?

Gerbode: No, it's a tricuspid valve. It's easier to make a bicuspid valve.

Hughes: And that was the reason.

Gerbode: Yes.

Hughes: In 1962 Björk wrote to you from Uppsala saying that he was very impressed with your ability to put in an aortic valve in twenty minutes. He said that it took him an hour. I was wondering why there was that great difference in time.

Gerbode: I don't know.

Hughes: He was slow.

Gerbode: I wouldn't say that. Maybe I was fast and maybe he was slow, but I don't know.

Hughes: That would make a difference though in 1962, wouldn't it? I'm thinking of the oxygenator and the problems that were still happening.

Gerbode: Yes.

The Early Membrane Oxygenator

Hughes: In January 1967, you wrote to Clarence Crafoord at the Karolinska that Hallikainen Instruments of Richmond was producing a fully engineered membrane heart-lung machine. I was surprised at this because I didn't realize that you were marketing the membrane at that stage.

Gerbode: We weren't marketing it, but they had developed it and so they were willing to make a few for others to try.

Hughes: So it was really a prototype?

Gerbode: Yes.

Hughes: What became of it?

Gerbode: I used it in about three hundred patients, but the problem was that it was too difficult to service between operations. Patients did very well on it, but there's a certain point where if things work easily or don't work easily, you have to decide whether to use them or not.

Hughes: It was not only the disk oxygenator that was sent over to Cutter [Laboratories] to be cleaned?

Gerbode: The membrane had to be sent over, [cleaned], and assembled by Cutter, which was also very difficult, and a nurse had to be over there who could put these various layers in the membrane together, and usually Bram went over to supervise. This was too complicated.

Hughes: Were there other membranes at that time used right here in the Bay Area?

Gerbode: There weren't any really in use at that time. We had the first membrane which was used clinically on a broad scale.

Hughes: Were you using the disk at the same time?

Gerbode: No, I don't think so. When we switched, we used just the membrane.

Hughes: When you found that this wasn't feasible, you went back to the disk?

Gerbode: When we found the membrane was too complicated to run routinely in cases, the bubble-oxygenators came into being.

Hughes: The chronology then was disk, membrane, bubble.

Hughes: Later you joined the Harvey Corporation. Why the change?

Gerbode: We had done a lot of research on the membrane oxygenator and developed a method of getting maximum oxygenation and CO₂ transfer of the blood. This was incorporated in a new design for a membrane oxygenator. We realized that we couldn't produce this on a large scale, so we asked the Harvey Company to come in and take over the development of a production model. It looked very feasible to them, so we gave them the patents which we had and let them go ahead with it. After about five years of work in their laboratories to produce a commercially viable product, they decided to adopt the Dow Chemical membrane oxygenator probably because they felt they could make more money with it.

Hughes: Can you summarize the differences between the membrane oxygenator at the stage it was being worked on by the Hallikainen Company and Harvey?

Gerbode: It had to be put into a package which could be disposable after each operation. The Hallikainen was used once and [then] it had to be taken apart and cleaned and put together by an expert. All hand work. The one which Harvey finally developed was one which could be put together quickly and commercially in a way which was feasible as far as general use was concerned. Unfortunately, I think they found the Dow Chemical one would be cheaper to market than ours. Now they are selling the Dow Chemical one. These big companies keep looking for something which will make them more money right away.

Hughes: Do you think that boils down to ease of manufacture?

Gerbode: Ease of manufacture, ease of assembling, ease of operation. The minor differences in physiology of each one are erased by all the mechanical aspects of putting it together.

Hughes: The changes that occurred between your early membrane and the later ones were somewhat in terms of ability to clean them. Wasn't that a big factor? Did that boil down to different materials that were available over time?

Gerbode: Yes, it did in a way, because originally we weren't using the same membranes which we used in the end. In the end microporous membranes came into being and almost all the companies that were involved in this business switched to them because the oxygen and CO₂ transfer through those membranes is so much better than anything we had before. Our oxygenator behaved beautifully with these microporous membranes.

Hughes: Were those membranes developed specifically with this use in mind?

Gerbode: No, they're used in industry a lot. This development came out of industry. There are a lot of other uses for microporous membranes.

The Bubble Oxygenator

Hughes: I have a letter here that you wrote to Hans Borst in 1957 and in it you referred to the Lillehei system. Do you want me to read it?

Gerbode: Yes.

Hughes: "I have your letter of April 10, 1957 and was interested in your remarks about the Lillehei system. We have, of course, experimented with this device for about a year and a half now and have found it to be far from what we would like for human use although I know it has been used successfully in many cases. We have our own combination of Gibbon pumps, which the Gartner-Kay model also uses, but we have disposable membrane lungs made of plastic. This gets away from pyrogens and problems with cleaning screens, etc. Our extracorporeal program is booked solid until June. It is curious that for a while we wondered whether there would be much demand here for this kind of work, for the demand far exceeds our ability to meet it at the moment and I worry that my research program may get submerged by the clinical work. But that is a matter of interpretation, for a great deal of clinical work can be done on a rather large volume of cases which is now going through my service.

"We have also built a small new laboratory for extracorporeal experiments and I have an excellent staff of associates including Jack Osborn and a number of others. I believe that Dennis Melrose is coming from England to work with us on problems of physiology and extracorporeal circulation. But I doubt if he would be interested in doing any surgery."

What was this Lillehei system that you referred to?

Gerbode: It was using the bubble oxygenator.

Hughes: Which at that point you were realizing had drawbacks?

Gerbode: Certain limitations, yes.

Hughes: Was that obvious pretty quickly because in 1957 they hadn't been around for a long time.

Gerbode: No, it wasn't obvious right away, but it was pretty soon.

Hughes: This was the reason that the bubble oxygenator, you felt, was inadequate for patient use?

Gerbode: Well, it had limitations.

Hughes: Which meant that you didn't use it.

Gerbode: Not in the beginning, but later on we did use it.

Hughes: After it had been improved somewhat?

Gerbode: Yes, it had been improved quite a bit.

Hughes: What about problems with bubbles or micro-bubbles?

Gerbode: And there were bubbles too. This is true of using bubble oxygenators. Though to a much lesser extent, even the disk oxygenator produced bubbles which got through the filtration and other systems.

Hughes: But the bubble oxygenator was worse?

Gerbode: It was the worst and it still is.

Hughes: Why did you doubt that there would be much demand for the extracorporeal program?

Gerbode: You never know what cardiologists will do and realizing how difficult it was in the beginning to start closed heart surgery, I didn't know whether they'd accept open heart surgery or not. So I guess it wasn't until the results were good that they realized that this was the best way to take care of these patients.

Hughes: So there really was doubt amongst cardiologists in the beginning that open heart surgery was an acceptable technique?

Gerbode: I don't know whether it was doubt. I think it was just hesitancy.

Hughes: Turning over their patients to--

Gerbode: ...these terrible surgeons!

Hughes: Do you think your research program did get submerged by the clinical work at this time?

Gerbode: No, I kept the laboratory going all the time.

Hughes: When you speak of the advantages of clinical work, you mean from the standpoint of accumulating cases and statistics?

Gerbode: Yes, and studying what really happened.

Hughes: How did you manage your day, assuming that you had a fairly heavy case load. Were there certain times which you set aside to work in the dog lab?

Gerbode: On certain days I went over to the dog lab.

Hughes: You didn't schedule cases on those days?

Gerbode: That's right.

Early Extracorporeal Research

Hughes: Do you remember when the extracorporeal work with Jack Osborn began in earnest?

Gerbode: Jack came with me in the early 1950s and we started working then. Jack came with some experience with hypothermia in New York, not so much with heart-lung machines. I told him early on that I thought we ought to get on with a heart-lung machine. We looked at various ones which were already on an experimental basis. One of these, the disk oxygenator, had actually been worked on at the Karolinska by Crafoord.

Hughes: When was this?

Gerbode: The early fifties. At the same time John Callaghan came from Canada and worked with me in the laboratory. We tried various other kinds of oxygenators. We used plastic bags filled with oxygen and mixed blood with a sort of a bubble oxygenator in a plastic bag. We used this experimentally, a terribly cumbersome way of trying to do it. We did a couple of patients with this method and that wasn't very good either. This was really before the idea of bubbling oxygen through a column of blood proved to be feasible.

Hughes: Are you saying that Osborn came to you with the idea of working on hypothermia rather than the heart-lung machine.

- Gerbode: He came with the reputation of working on some basic things in hypothermia.
- Hughes: Where had he done his previous work?
- Gerbode: At New York Hospital. We really didn't exploit his previous work in hypothermia at that time. We got started trying to develop a heart-lung machine.
- Hughes: Was it easy to talk him into working on the heart-lung machine?
- Gerbode: Oh yes.
- Hughes: It took a number of years to combine those two processes, didn't it?
- Gerbode: It did.
- Hughes: In retrospect, it seems obvious.
- Gerbode: I guess, what happened mostly was that we could see the need after a while, and we realized that something was necessary to supply the need, and hypothermia would not really supply the need--a great adjunct to the picture, but not an answer to the whole picture.
- Hughes: The use of hypothermia with the oxygenator took surprisingly long. That didn't occur right from the beginning, yet the two techniques were going on side-by-side for almost a decade.
- Gerbode: We realized that the hypothermia would help almost anything relative to a heart operation. But we also realized it would overcome some of the inadequacies of an oxygenator system.
- Hughes: Were there certain operations that you were doing with closed heart procedures?
- Gerbode: Yes. We were doing closed heart procedures all the time.
- Hughes: After the heart-lung was available, were you picking and choosing your operation procedure?
- Gerbode: There were certain cases we could do with closed heart techniques quite safely and quite easily. The ones that we thought we could do this way, we did.
- Hughes: A letter from Hans Borst [written early in 1958] has an interesting passage: "As you know, Professor [Rudolph] Zenker has been in the States. He had hoped very much to see you in San Francisco but

Hughes: contracted grippe in Los Angeles. His impression of the United States was most interesting for me, as you can imagine. He was very much impressed. However, the basic differences between American and German medicine seem so remarkable that there doesn't really exist a possibility to modify the present system. The differences, he felt, are due to the fact that in the U.S. there is a shortage of doctors and there is private initiative in medicine. I am sure that is a very important sociological difference, but I believe the real discrepancy is due to the different mental attitudes in the U.S., this overcritical Anglo-Saxon overtone, and here [in Germany], this curious mixture of hollow dogmatism and genius."

Gerbode: He's a smart guy, Hans.

Hughes: It's a very interesting summary. You spent some time in Germany. Would you agree with his assessment?

Gerbode: Now it's much better, of course. The systems are very much more alike.

XI PACIFIC MEDICAL CENTER AND ITS PREDECESSORS

The Institutes of Medical Sciences and the Old Presbyterian Hospital

- Hughes: You said earlier that John Osborn, Henry Newman, Arthur Selzer, Fred Merrill and Mrs. Harley Stevens were the original founders of the Institute of Medical Sciences. I know of Osborn, but why were the others involved and who were they?
- Gerbode: Well, Arthur Selzer was our cardiologist and he was very interested in experimental work at the time because there wasn't very much clinical work. So I asked him to join the group to form the institutes. Mrs. Stevens is a very good friend of mine and very interested in the research that I've always done. She has always been very supportive and so she came along for that reason.
- Hughes: Was she putting money into it as well?
- Gerbode: She put some money into it. She has sense, too. Jack Osborn of course came with me to develop and run the heart-lung machine, so it was natural for him to come along.
- Hughes: He was already here at Stanford Hospital?
- Gerbode: Yes.
- Hughes: What about Fred Merrill?
- Gerbode: Fred Merrill was on the board of trustees of the hospital and so I put him on [the board of the institutes] because he was a good representative businessman.
- Hughes: Did the six of you really establish the policy and get the whole thing going?
- Gerbode: Yes.

Gerbode: When Stanford pulled out, we had no organization to work through. I took a look at the chiefs of service and decided that none of them were interested in research, and it would be impossible to get them to agree on anything relative to research, so I just gave up on that. In fact, when we started thinking about building the research building and wanted to take some of the money which a very nice lady had left us, and asked for something like \$150,000, there was a great uproar. They said, "We need a hospital more than a research building. We've got to put that money into a hospital. We couldn't even buy a dressing room for \$150,000!"

Hughes: So how did you handle that?

Gerbode: We just went ahead and did it anyway.

Hughes: Eventually the hospital was built. Was that very shortly thereafter?

Gerbode: That's another story when we got that hospital built.

Hughes: I've forgotten how much longer that took.

Gerbode: It took seven or eight years or more, I guess. There were all kinds of plans designed by various experts to convert the old Stanford Hospital and the rest of those buildings into a modern hospital. It was just wasted time and money to do that and the only ones who profited by it were the planners.

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Hughes: You talked earlier about the vigor of the program in heart surgery carrying along the hospital for a number of years.

Gerbode: I think there was a time, when we burst into the field of heart surgery and started doing a lot of cases, when we were the only really ongoing unit in the whole hospital.

Hughes: What happened to the patients that had been coming to Stanford Hospital?

Gerbode: I think some of them didn't stay with us because they were told by the Stanford administration that the hospital was going to close. Some of them even believed that. They felt that with some of the faculty moving to Palo Alto, that the faculty who were staying weren't good enough for them. A lot of little things like that.

Many times I heard people say when a patient was referred, "Where are you going to operate on this patient?" I said, "In the old Stanford Hospital." They would say, "We thought that was closed." This was deliberately conceived by one of the trustees of the university. Absolutely deliberate.

Hughes: Was it motivated by their fear of competition?

Gerbode: Yes. Stanford didn't think they could make it too easily. They even wanted to close the out-patient clinic. Stanford said, "We have no money to pay a deficit for an out-patient clinic." So since they raised the question of the deficit, Henry Gibbons and I got fifty doctors to promise one thousand dollars apiece to pay for any deficit in the out-patient clinic. Of course, there wasn't any deficit and so we didn't have to pay anything.

Hughes: Were you pretty confident of that?

Gerbode: Oh sure. You see, it's a natural place for a clinic. It's near the underprivileged people and hundreds of those patients have been coming there for generations, and many of them walked to the clinic. The ones who had to come from farther away could all get there on general transportation. There were lots of doctors who were not going to go to Palo Alto and they were willing to stay there and take care of those indigent patients.

Hughes: Did you have trouble filling in the gaps in the staff in those early days?

Gerbode: No, there was a good distribution always.

Hughes: But you had to take on new people, didn't you?

Gerbode: We did, but some of the younger people didn't go down [to Stanford] with the chiefs, so then they became chiefs up here. It was delightful for them.

Hughes: Tell me about the other institutes that were founded in these early days?

Gerbode: The other one that came along very strongly was the eye institute [the Smith-Kettlewell Institute of Visual Sciences] under Dr. Jampolsky. There was a time when we thought that maybe some of the other eye doctors would not go to Palo Alto and would stay and help to develop the eye institute. That old Stanford Medical School had a terrific reputation in ophthalmology, going back for two generations. It was started by two Swiss ophthalmologists, [Adolf] Barkan and [Dorman] Pischel, who liked teaching and took their responsibilities of being professors very seriously. They had children and their children became doctors and carried on in the profession. They carried on with lots of clinic activity and continued to be modern. So we've always had a big eye center there.

Hughes: And Jampolsky was part of that?

Gerbode: He was part of it. He grew up under Barkan and so did Cleasby. A whole bunch of the ophthalmologists stayed around and some of them developed practices downtown; some of them developed practices in other hospitals, but most of them continued to teach in the old Stanford Hospital.

Hughes: Where did the money come from for the eye institute?

Gerbode: Originally there wasn't much money, but they got federal research grants, and then there was a fellow by the name of Clement Smith who was both a patient of Dr. Jampolsky and mine. He had very poor vision and very poor circulation. I was taking care of his poor circulation and Jampolsky was taking care of his poor vision. He had no relatives. He made an awful lot of money in the offshore insurance business after the war. He liked us. I think Dr. Jampolsky worked on him harder for donations that I did, although I put my nickel's worth in whenever I could. One day when his health was really failing-- I knew him through the Bohemian Club--he called me up and said, "Frank, I'd like to have you come down and talk to me. I'm going to die before long." So I went down. He said, "I'm going to give Jampolsky one million dollars for his eye work and I'm going to give you one million dollars." I said, "What do you want me to use the money for?" He said, "Whatever you want." Well, I found it would be much better to have that million dollars go into the institutes as a whole to help the broad base of all the various research workers. So we put it into what was then called the Institutes of Medical Sciences.

The Institutes

Gerbode: Then Jampolsky founded his own private institute and kept the money in it. Later on he did the same thing with a woman named [Catherine] Kettlewell who was a patient of his. Mrs. Kettlewell gave all her money to Jampolsky's eye institute.

Hughes: The eye institute is separate from the Institutes of Medical Sciences?

Gerbode: They have two foundations as I understand it. They use all their money for their eye work. Because of Smith and Kettlewell, they got enough money to build their own building.

Hughes: So they're more independent than the rest of the institutes?

Gerbode: Yes, they're independent, but they have to use MRI as an umbrella because they have a certain number of federal grants and they need to have the institute to back them.

Hughes: Is that the only real reason that they keep the affiliation?

Gerbode: I think so because they don't really cross-fertilize much in their research.

Hughes: Is that somewhat because of the nature of their research?

Gerbode: I suppose eye research is more or less separate from general research, but there are areas where they could overlap. I think they have collaborated a bit with some of the other people over there, But generally speaking, they don't.

Hughes: Do they have more manpower than the other institutes?

Gerbode: Well, I don't know about the total manpower compared to that of the total MRI. MRI has a lot of manpower because of all the other grants we've gotten. The eye institute is able to fund quite a few extra people out of their endowment funds.

Hughes: What about other institutes?

Gerbode: Then the neurological institute [the Institute of Neurological Sciences] came along. Knox Finley was doing research on the long-term effects on the brain of certain infectious diseases of the brain. He had this contract to study these patients over a long period of time.

Hughes: Dating back to the very beginning in 1959 when this all got off the ground?

Gerbode: Yes, but later on that work ran out of gas, you might say. I got interested in the long-term effects of open heart surgery on patients with congenital heart disease, so I got Knox's group to study these children, psychologically and neurologically, before and after heart operations. That work went on for quite a while.

Hughes: Using your money?

Gerbode: Using our money; it came out of my grants.

Hughes: So that pulled them along for a while.

Gerbode: Yes.

Hughes: What about the other institutes?

Gerbode: The other big group that came over was from the U.S. Public Health Hospital [in San Francisco]. They were studying coronary disease and high blood pressure. For one reason or another, they decided that they ought to get out of the U.S. Public Health Hospital. We encouraged them to come over to IMS and gave them space and set them up. They transferred all their funds over, which were considerable, to study hypertension and heart disease on a group of patients.

Hughes: They became a part of your [Heart Research] Institute.

Gerbode: Yes, they did. Later on they decided, since they had so much money, that they ought to be by themselves. So they asked to get out of my institute and become a member of a new institute which they called The Institute of Behavioral Medicine. So they now have their own separate institute.

Hughes: Did that involve a battle?

Gerbode: No, I didn't fight. I didn't want to have anybody around that was unhappy. The reason they dropped out was because they felt they could run their own money better than having to go through my institute.

Hughes: It was coming directly from the Public Health Service?

Gerbode: Yes.

Hughes: Was the Institute of Behavioral Sciences already extant?

Gerbode: Yes, it was. It was part of my Heart Research Institute. They reached certain conclusions from their research, and then they went into another big research program on alcoholism and its causes which they now run with the University of California in Berkeley. So they're coasting along in that alcoholism funding right now.

About three years ago Dr. Osborn, who had been with me from the very beginning, decided that he could get more research grants if he got an institute of biomedical engineering. So he split off with a couple of grants and set up the Institute of Biomedical Engineering [Sciences].

Hughes: Was that with your approval?

Gerbode: Again, I didn't fight it. It makes sense to have an institute of biomedical engineering if they can get somewhere with it. As it happened, once they split off, they had practically no funding. I think they have only one grant right now. So what Osborn thought was going to be great stuff turned out to be not so great.

Hughes: Do you think it would have been better if he had stuck with you?

Gerbode: I don't know.

Hughes: Is there anything else to say about the early days of the institutes?

Gerbode: I would say that in general the hospital staff--they were mostly people left over from the old Stanford days--viewed a continuation of this research effort with a somewhat jaundiced eye. They couldn't understand why I was so interested in maintaining a research program when the hospital was falling apart and so were a lot of the programs. My point was that the hospital would never amount to anything without a research program. So I think there are still people who don't quite understand how a research program in a hospital can possibly make the hospital any better. But that's a matter of philosophy and belief.

Hughes: I know that UCSF, at least since the war, has had a research program. Was there any other hospital complex in the Bay Area with a research program?

Gerbode: Mount Zion always had a little research going. Nothing very much. Children's Hospital has some research funds and they had a unit built for research in their new hospital a number of years ago. They may have one research program over there now, but it's not very much.

Hughes: Do you link the fact that at Presbyterian the great advances in heart surgery on the West Coast were occurring with the fact that you had a serious research program?

Gerbode: We could never have developed the heart-lung unit without a big research program. In fact, NIH decided that on its own and gave me what amounted to about \$400,000 a year for about ten years for developing an open heart program, monitoring, training young people and nurses, improving the technique and safety of heart surgery. I think the research really helped enormously.

Hughes: It was more common on the East Coast, was it not, to have research associated with a hospital complex?

Gerbode: It was always common in the university hospitals. It was not so common in the private hospitals. But the reason we might have been different, you see, is the fact that this had always been a medical school. So we have the same sort of aura as when there was a medical school here.

Hughes: You had, at least in the early days, people who had been teaching, including yourself.

Gerbode: Yes.

The Old Stanford Hospital and the Presbyterian Church##

[Interview 16: May 22, 1984]

Hughes: Dr. Gerbode, in January 1960, the Presbyterian church announced that it would take over ownership and operation of the San Francisco Stanford Hospital. Fred Merrill, president of the board of governors of the hospital, said that "the church's decision to take over the hospital represented a solution to the difficult problem that has confronted the board of governors for the past six years." Do you know what problem he was talking about?

Gerbode: I suppose he was talking about which organization would sponsor the hospital. Very few hospitals are free standing without a sponsor. Since we'd had Stanford Medical School as our sponsor at the old Stanford Hospital, we were quite used to having quite a respectable organization behind us. There are other hospitals in the country which are sponsored by the Presbyterian church. There's one in New York, a very famous one [Columbia Presbyterian Hospital], and there's a new one in southern California, and [others] are scattered here and there. I suppose the church feels, too, that it gains kudos by having something other than just a church. So that's why they do it. But they are Scottish Presbyterians and they are pretty good at collecting money, but not very good at spending it, which was what we found out.

After we got connected with them, everyone thought, well, the Presbyterian church is going to pour thousands of dollars into the place. But actually they made a token contribution and that was it and they have never made much of a contribution since then.

Hughes: What took up the slack then?

Gerbode: We had to raise it and we had to make it out of earnings from the hospital. A great many of the special units in the hospital were paid for out of research funds or special funds we got from various agencies. For example, the whole heart center intensive care unit was paid for largely by NIH funds and IBM. The first angiocardiology machine was paid for by a Mr. Newton Bissinger who was treated so well

- Gerbode: in the hospital, he felt he should do something about the hospital. This came as quite a big life-saver because that year Stanford decided it would take the angiocardiology unit out and re-install it in Palo Alto, which was all right since the next year there were big advances and we got a more modern unit.
- Hughes: The agreement between Stanford and the Presbyterian church included the gift of the [old Stanford] hospital and adjacent properties to the Presbyterian church of San Francisco, the development and maintenance of a graduate medical center by the Presbyterians, and also full financial responsibility for the administration of the hospital and its properties. Why was Stanford willing to make a gift of the hospital and its properties?
- Gerbode: It didn't want responsibility any longer for San Francisco.
- Hughes: Why wouldn't money have changed hands?
- Gerbode: Well, we didn't have any money, first of all, and Stanford really didn't want to have anything to do with San Francisco. I went down and talked to Wally Sterling [the president of Stanford], several times to try to get him at least to maintain a postgraduate unit up here loosely affiliated with Stanford. He wouldn't have anything to do with it. In fact, the president of the [Stanford] board, who was Dave Packard, [at] several meetings we held in the auditorium of the Fireman's Fund Insurance Company, whenever a question came up about maintaining an out-patient clinic or maintaining anything like that in San Francisco, Dave Packard, the president of the [Stanford] board, would say, "No, you can't do that." When I raised the question of teaching up here, carrying on some kind of graduate teaching program, "No, you can't have any teaching up here.
- Hughes: Why?
- Gerbode: Because they were afraid of competition. They were going to close the out-patient clinics because, first of all, they wanted the patients to go to Palo Alto and secondly, they thought it would cost them money to keep them open. So when this suggestion was made by Dave Packard, I organized a committee with Henry Gibbons and we got fifty doctors to guarantee one thousand dollars apiece to pay any deficit incurred by out-patient clinics so we could keep them open. Well, this kind of shamed the trustees into letting us keep them open. With that in front of them, they didn't really have any reason not to keep them open.
- Hughes: The out-patient clinics had been doing fine, hadn't they?

- Gerbode: Oh yes. They wanted those patients to move down to Palo Alto. Indigent patients don't move that far. They come from the area [around Presbyterian Hospital] and many had been coming to the old Stanford clinics for generations. We were very happy to keep them because we were accustomed to them and they were accustomed to us. We had a clinical staff who could take care of them because most of the clinical staff wasn't going to move to Palo Alto anyway.
- Hughes: Did you lose some of the wealthier patients to Stanford?
- Gerbode: I suppose we did because the old Stanford Hospital was in terrible shape physically. Many of the referring doctors thought that the hospital was going to close when Stanford moved to Palo Alto. In fact, they were surprised when they would occasionally refer a patient up here, when we said we were going to take care of them. They said, well, we didn't even think your hospital was open. This is exactly what Stanford wanted to be circulated. Anyway, instead of closing, we started making plans for a new hospital.
- Hughes: You were confident all along that you could raise the money?
- Gerbode: Oh yes, we were confident that we could do it. I don't know whether you want to hear the story of how that came about or not.
- Hughes: Go ahead.
- Gerbode: Fred Merrill was hoping some organization would come along and help us by being a sort of financial godmother/godfather for a new hospital and he was flirting with quite a few people including a group of nuns at Saint Joseph's Hospital because Saint Joseph's Hospital was going to close anyway, they thought. He said they had lots of money. When they got to the point of what they would do and what they wanted, they really weren't going to give very much money to the place--nuns being very careful businesswomen. Secondly, they wanted to control the board of trustees.
- Hughes: You mean putting a majority of their own--
- Gerbode: A majority of nuns on the board. Well, that plus the fact that they weren't going to put up very much money in anyway. Then we were without any sort of godfather or godmother for the place and we were in limbo.

Proposal for a Medical School

Gerbode: I was up at the [Bohemian] Grove one summer and I started talking to the president of the University of the Pacific, Bob Burns. He was a very, very nice man and one of the best presidents they ever had. I said, Bob, you could almost start a medical school [at Presbyterian] like the one you did in Sacramento at the law school. This appealed to him because he was in a kind of an expansionist frame of mind. He said, how can we do this? I said, well, let's go over and talk to Fred Merrill. We went over and talked to Fred Merrill and Bob said, we can start by sponsoring the hospital and maybe programs within the hospital. I said, you might even start some graduate training programs. This appealed to him a great deal. So he agreed to make our hospital a University of the Pacific affiliate.

Hughes: Do you remember when that was?

Gerbode: It was maybe four or five years after Stanford left.* That started it really because Bob Burns was a ball of fire and he really took hold of the idea. Then we started worrying about how we could build the hospital. We had a fellow by the name of Ed Westgate on the board of trustees who was the head of a committee to get a bank loan. He got together a consortium of banks which we considered might be willing to loan us some money to build a hospital. Of course, Bob Burns was always in the background sponsoring this concept. At the meeting at this consortium of banks which was scheduled on a certain day, he got a call from the Bank of America-- I think Clausen was the president then. He told Westgate, "Ed, don't worry about a consortium. We'll take the whole thing." Westgate was really responsible for maneuvering this. So then we had a bank which would loan us some money to build the hospital. This spurred Bob Burns on even further. This was the last of the Hill-Burton funds to build hospitals, so we got a Hill-Burton grant [application] together and Bob was working on Sacramento to get them to sponsor the hospital. He got them to recommend that we get the Hill-Burton funds for the hospital. We got quite a large sum of money.

Bob kept hanging on to this idea that maybe there would be a good opportunity for a medical school and we had a committee that developed a curriculum for a new type of medical school and got a

*Robert E. Burns, president of the University of the Pacific in Stockton, became president of the hospital board of trustees in 1967. At that time, the corporate name of Presbyterian Hospital and Medical Center of San Francisco was changed to Pacific Medical Center, Inc.

Gerbode: grant to do this. Bruce Spivey was in charge of those funds. He is now the president of the center. The [medical school idea] looked like a realistic thing for quite a while. Then various statistics came out to show that we were turning out too many doctors. When that became apparent, then people realized that it was a mistake to try to have a medical school when we were over-producing [doctors] already. So that idea died.

For a while there was even a thought that the state should have another medical school. There was a survey which showed that the San Francisco Bay Area could tolerate another medical school. It was logical to have it in the old Stanford Medical School location because physically it's a place for a medical center. The people who put it there in the first place were pretty smart. That whole idea died, but the concept of working together with the University of the Pacific continued for quite a few years. Stan McCaffrey came on as president of the board of trustees when Bob Burns died. Their financial officer came on too and stayed on it for several years until there really wasn't much of a program going between the university and San Francisco, so they dropped out of the picture.

Meanwhile, or even before all this happened, some of the people who used to be old faculty members persuaded the [University of the Pacific] Dental School to move from the Mission District to our neighborhood. That was another great advance for the [medical] center concept. They got money from the government and from their own alumni. They had a tremendous response from their alumni and built a very fine dental school.

Hughes: Is it right near the center?

Gerbode: It's in the same area. And there were collaborative programs. For example, we did some research with them. Some of our research people went over there from MRI to work with them and they liked being near us even though we were not a medical school. We use their faculty and dental clinic and some of their faculty consult on our patients' dental problems, and they like that. They also collaborated in developing the library.

Hughes: Are they strong competitors with the dental school at UCSF?

Gerbode: Oh yes.

Hughes: We're going back to 1960 when the changes came about. When the Presbyterians took over, did the composition of the board of trustees change at the same time?

Gerbode: Yes, it changed a bit. There's been a gradual change of the board of trustees. It's hard to say that at any one point there was a great change. I've been on the board now for over twenty years and I know a great many of the battles we had. I always held to the view that we could run a first class hospital and that once we put it up that it would be financially solvent. It certainly has been.

Hughes: You mean there were members of the board of trustees who doubted that?

Gerbode: There are always people around who doubt or are scared of any big venture.

Hughes: So they wanted to take the conservative route?

Gerbode: Yes.

Hughes: Were they resisting the idea of a full-blown medical school, as well?

Gerbode: Yes, they were. They probably were correct at resisting me. That's the other thing that happened to Bob Burns. He realized, after he went into it a little more thoroughly, how much it was going to cost. It is very expensive to run a medical school. But the thing that changed too was that the national subsidy for medical schools went down quite a good deal after they discovered they had enough medical schools. So that source of funds diminished a good deal, and, rightfully, people had to pull in their horns a bit. Even the big schools had to retract many programs. Some of the big schools had been getting as much as twenty million dollars in research grants and subsidies before these surveys showed that we had enough doctors already and were probably spending too much on medical schools. This was a big blow for some of the big schools to lose that amount of support.

In Washington there was a great deal of sentiment in favor of maintaining something in San Francisco. They realized there were a lot of clinical teachers and some research people who'd been with the school for a long time, and they were rather anxious to keep us going. This helped us a lot at MRI.

Hughes: The fact that you were sitting on a lot of those committees in Washington should've helped.

Gerbode: That didn't hurt. That's right.

- Hughes: You mentioned the fact that the Presbyterian church was operating Columbia Presbyterian Medical Center which has a long and prestigious career. Was there any conscious emulation?
- Gerbode: I think it was rather nominal. I'm not quite sure how much the Presbyterian church put into the medical center in New York. I have a notion they gave it the name and a little religious blessing and that was it.
- Hughes: There's been no particular association between--
- Gerbode: Between the other Presbyterian hospitals? No.
- Hughes: Are you saying, just to summarize, that the Presbyterian church really had very little part in the financial aspects of getting the medical center in San Francisco going?
- Gerbode: They probably helped a little bit in fund raising, but not very substantially.
- Hughes: Do you think their association helped you fund raise?
- Gerbode: I think the name helped, not an awful lot, but some.
- Hughes: Soon after the hospital was taken over by the Presbyterian church, four buildings were demolished to make way for new hospital facilities and a professional office building. Do you remember which buildings were built first? The hospital didn't come along for some years after that.
- Gerbode: We didn't have to demolish anything to start the new hospital.
- Hughes: I know one of the first buildings that was built after the break with Stanford was an office building.
- Gerbode: No, that's not true. The first thing that was built after the break with Stanford was a research building [for the Institutes of Medical Sciences]. There were funds available in the government for research facilities. Since we had such a good record and had quite a few research people whom I had held together, we had a pretty good reason for continuing a research facility and research effort. We applied for funds for a research building and the board of the center approved of it. In fact, they allocated about 175,000 of their precious dollars for this. The building cost close to \$800,000. It's now worth about three or four million.
- Hughes: Are you talking about the present building for MRI?

Gerbode: Yes. We originally contracted it for three stories, but we had the foundation built for five stories. So we built the three stories and no sooner were we finished then we realized we had enough resources to build a couple of more stories. So we raised a bit more money and applied for more money from the government, and they gave us some more money to build the two other stories.

We had the old Stern Building, too, where Stanford had had quite a big research effort, and we put some of our people there. Most of the people who had been doing research in the Stern Building had gone to Palo Alto.

Hughes: That means you were recruiting new research staff?

Gerbode: To a certain extent new research people came in, but we just had places to put the ones that stayed.

Hughes: John [R.] Little was chosen as the first president of the board of trustees.

Gerbode: Yes, he was. He was the one who really got excited about the church getting involved with us. He was very much of a far-seeing fellow. He dreamt of a big center there. He was in the hospital during part of that time recovering from a not very major illness. I used to drop in to see him and he said, "I think this would be the greatest place for a big medical center."

Hughes: What was his background?

Gerbode: He represented the Presbyterian church.* He was very influential in getting the Presbyterians to come into the picture.

Hughes: Was he on the board before the Presbyterians took over?

Gerbode: No, I don't think so. I think he came at the same time as we got serious with the Presbyterians. I'd have to look that up.

Hughes: Did much of the old board continue after the Presbyterians took over?

Gerbode: Yes, quite a few of the board continued on. There were some stalwarts who weathered the whole change quite a good deal. Mrs. Fred Early and Jack Hume were ones that stayed with the board of trustees during these critical times. Fred Merrill stayed on. I was put on the board around that same time too.

*Little was chairman of the negotiating committee of the Presbytery of San Francisco.

Hughes: Is board membership strictly a board decision?

Gerbode: Yes, it is. This is a self-perpetuating board.

Hughes: What were the backgrounds of board members?

Gerbode: We had some bankers and lawyers and one or two doctors, not very many doctors.

Free Hospital Beds

Hughes: I read about ten to fifteen so-called free beds at Presbyterian. Is this something the church instituted?

Gerbode: No, I don't think the church really contributed any money for free beds. I think that was probably a requirement to get the Hill-Burton funds.

Hughes: Do you know how patients were selected?

Gerbode: They were indigent patients.

Hughes: But there were probably more than fifteen at any given time.

Gerbode: Yes, that's right. I don't know. They weren't all lined up and pointed out. But I think what happened was that the fifteen beds were filled, and then when one was empty, the next indigent patient was put in there.

Hughes: In 1967 the Presbyterian Medical Center became the Pacific Medical Center, Incorporated. Why was the church's name dropped?

Gerbode: We kept the church's name by calling it Presbyterian Hospital. I was the one who was very strongly in favor of that because we'd spent a lot of time telling people that we had a hospital with that name. It was a good name. They decided it would be called Presbyterian Hospital of Pacific Medical Center. I think since then there's been rather a tendency just to call the whole place Pacific Medical Center, including the hospital. MRI is part of Pacific Medical Center, too, as is the dental school.

Hughes: Why drop 'Presbyterian' from the whole complex?

Gerbode: I think they thought that Pacific Medical Center sounded a little more global. It encompassed the whole Pacific Coast, more so than the church's name.

Hughes: What significance did the 'incorporated' have?

Gerbode: Whenever you change a name you have to change the incorporation.

Hughes: So it was Presbyterian Medical Center, Incorporated?

Gerbode: Yes.

Hughes: At the same time the name change was occurring, Robert Burns was elected president of the board of trustees and the board was reconstituted. Do you remember why Burns was elected?

Gerbode: He was elected because at that time we thought that it would allow Bob to get a medical school in some form started. Unfortunately, after two or three years, Bob had the idea that everything--MRI, the dental school and the hospital--should all be under one board. He wanted to be president of that board. Some of the research people didn't think that was a very good idea, and it wasn't, really. You could influence any one of these individual organizations quite a good deal without having them all on one board. A single board might try to govern research too much.

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Gerbode: The curious thing is that the board members really never thought about medical research and weren't really doing anything for medical research. They just wanted to have control.

So much needs doing when you get involved with research that you have really to get interested in it and participate in the programs somehow. You can't just sit back and be in control without exercising some influence on the type of research and perhaps getting people to come and do research with you. After a while that idea [of a single board] died a slow death. Meanwhile, Burns himself got a serious illness, so he couldn't really keep up with these things. The concept of a medical school also died down because of the factors I mentioned before.

There have been several efforts to put MRI and the hospital in one corporation. I think this is kind of a national preoccupation, you might say. All the time we see corporations incorporating other corporations presumably for the betterment of one or the other. You might call it the amalgamation era. Sometimes I think people think just by amalgamating that things will get better. But I

Gerbode: don't think that really is what makes it get better. I think you have to be concerned with programs and people internally rather than with control.

Hughes: Is that idea of amalgamating still in the wind?

Gerbode: It comes up every year.

Hughes: Do other medical institutions operate that way?

Gerbode: Well, medical schools don't operate that way any more. I guess some medical schools do incorporate other institutes or ancillary [units] in their medical school's overall structure. Generally speaking, there aren't too many of these things happening now.

Mergers with Other Hospitals

Hughes: In 1969 Callison Memorial Hospital, which was an 83-bed facility near downtown San Francisco, merged with the Pacific Medical Center. Why did this come about?

Gerbode: This came about because to get Hill-Burton funds we had to eliminate beds in other hospitals or eliminate hospitals. For example, Saint Mary's Hospital got hold of the hospital on Van Ness Avenue and changed that into a convalescent home in order to get credit on Hill-Burton for the money to help them build their hospital. We got Callison and this helped us get the Hill-Burton funds. We had to take the Callison doctors in and this was quite a little job in some places because some of those Callison doctors were not considered quite so good by our staff.

Hughes: Were they from different specialties?

Gerbode: Well, there weren't very many specialists. There weren't very many board-certified men over there--a lot of GPs and a lot of GPs that were doing surgery, obstetrics and other things, even orthopedics.

Hughes: What happened to the hospital itself?

Gerbode: It's still going. I think it's a convalescent hospital now.

Hughes: But it's not associated with PMC?

Gerbode: No.

- Hughes: You did, as well, at some point take over a convalescent hospital.
- Gerbode: Yes, we took over the one out on Geary Street, Garden Hospital Jerd Sullivan Rehabilitation Center. That still runs as an extended care hospital.
- Hughes: And do you tend to send patients there?
- Gerbode: Yes, we do. It works quite well.
- Hughes: Was that taken on for the Hill-Burton money?
- Gerbode: I think so, in a way.
- Hughes: In 1972 PMC became the official leasee of Brookwood Hospital in Santa Rosa.
- Gerbode: There has been a tendency for quite a while for tertiary hospitals in cities to help peripheral hospitals maintain programs of different kinds by sending staff for educational reasons and collaborating on teaching programs. I think with Brookwood Hospital, we took over their accounting practices and taught them how to use accounting in the same way that we do in San Francisco.
- Hughes: What would be the advantage to PMC?
- Gerbode: Well, you see, being a tertiary hospital, you need to have a supply of tertiary patients. Brookwood is a good primary hospital. It's only when they get into complicated medicine, that they have to have some other hospital to send them to.
- Hughes: So PMC is the one.
- Gerbode: Yes.

The New Presbyterian Hospital

- Hughes: In April, 1973 the new Presbyterian Hospital, costing \$22,500,000, opened. Do you think we've discussed adequately how the hospital was financed?
- Gerbode: I think I have yes--mainly a bank loan and the staff raised over one million dollars.
- Hughes: You mean from their own pockets?

Gerbode: Yes, from their own pockets.

Hughes: Did you have a major part in planning this?

Gerbode: I was in charge of the staff fund raising program.

Hughes: What about the actual design of the hospital?

Gerbode: We had many, many, many meetings about that.

Hughes: The whole board?

Gerbode: No, various people on the board. I was asked to collaborate a lot on the surgical part and really designed the intensive care unit areas. We were very interested in having an open heart program. To have a good open heart program, you have to have things put together in a certain way. The architects were very happy to have somebody talk to them.

Hughes: Were the architects used to building medical facilities?

Gerbode: Yes they were, but they were very anxious to please and to do what we wanted. And, luckily, some of us could read plans and knew what we wanted.

Hughes: Computerized monitoring of patients was going very well by then. I would think that that would have had considerable bearing on the design of Presbyterian Hospital.

Gerbode: It did. We had started that in the old hospital in very cramped space. When it was apparent that we could do it and that we were going to have a rather busy open heart surgery program, IBM came along and said they would help us. Therefore, we could sit down with the architects and design space and accommodations that would do it correctly. We knew what we were talking about.

Hughes: Were you involved with the fund raising?

Gerbode: You never stop being involved with fund raising, unfortunately. We got a lot of money out of research grants. Jack Osborn and others of us put in grants [to] take care of certain aspects of the intensive care unit.

Hughes: Was IBM donating its time?

Gerbode: IBM donated about one million dollars worth of time and materials.

Hughes: Including the computers themselves?

Gerbode: Components of the computers themselves, yes.

The Heart Research Institute Fellowship Program*

[Interview 17: June 13, 1984]###

Hughes: Would you pick out a few of your cardiovascular fellows and tell me a little bit about what they did subsequent to their training with you.

Gerbode: I'd rather first talk about why we established a fellowship program.
[telephone interruption]

Gerbode: Particularly when Stanford decided to move to Palo Alto, and even before that, it was very difficult to get competent help in the operating room. The residents in general surgery were mostly preoccupied with general surgical procedures and there was no resident in thoracic and cardiovascular surgery. There were a number of people who'd heard that we had a good experimental laboratory and they wrote to me and asked if they could come over and work in the laboratory and assist with operations.

Frank Rundle

Gerbode: The first of these was Frank Rundle who came to me from St. Bartholomew's Hospital where he was assistant director of the surgical professorial unit. He came because he wanted to do some experimental work in vascular surgery. Although he had an appointment at the Massachusetts General Hospital to do this, they wouldn't give him any time in the laboratory and were generally not very friendly with him. That's why he finally came with me. He had plenty of opportunity to work in the laboratory and assist me with the vascular experiments we were conducting at that time getting ready for extracorporeal circulation.

*See the discussion recorded on 11/14/84, pp. 484-485.

Hughes: And this was after your year at St. Bart's.*

Gerbode: This is before the year at St. Bart's. We worked together and did quite a few experiments and wrote some papers on major vessel surgery. Then he finally went back to St. Bartholomew's.

He talked to me a little when he was here about coming over and working at the professorial unit. I said I'd like to do that sometime if it was all right. This was, I guess, about 1947 or 1948. A few months after he got back to London, a letter came from Sir James Patterson-Ross who was a professor of surgery there. He asked me if I'd like to come over for a year and work with their unit and get some experimental surgery going.

Hughes: Do you think the invitation was instigated by Rundle?

Gerbode: I think Rundle told him about me and probably convinced Sir James that I was probably a likely person to come over.

Before I got there, however, he had another young man there by the name of Gerard Taylor who was working in their unit. I brought Jerry over to work with us, too, and we worked together in the experimental laboratory and wrote some papers. Jerry went back to London as well. Then I went over in 1949 and established the first experimental surgery connected with St. Bartholomew's at the Royal Veterinary College.

This was a great experience. It was freezing cold in the winter, no heat in the building, so I wore long underwear everyday when I went there to do our experiments.

The next year, having come back [to the U.S.], I began to look around for other candidates who might like to work in the laboratory and help with cardiovascular operations. After that, there was a whole stream of fellows that came over. I shall start with some of the early ones. Some I would interview when I went to meetings in Europe. If they looked like they might have promise, I would invite them to come over. I also had at the same time a training program with the National Institutes of Health. They were beginning to realize that they needed to have more cardiovascular surgeons in the country, so they gave me a program which permitted me to have up to three men at one time paid for by Uncle Sam, working in the laboratory and in the operating room. This was a great, great help to the program. This got me out of the problem of having to

*Dr. Gerbode was an associate in surgery at St. Bartholomew's Hospital, London, 1949-1950.

Gerbode: use general surgical residents and interns, and this gave me my own assistants, really. I didn't have to get the money to pay for them from any other source, which was a great help too.

Hughes: And these people could be foreigners?

Gerbode: At that time there was no problem with having foreign graduates working in the laboratory. [The problem] didn't start till about 1979.

John Callaghan

Gerbode: One of the earliest fellows was John Callaghan. John Callaghan had been working with Bigelow on hypothermia. He was one of the men who really started hypothermia with Bigelow in Canada and also had been invited to go to England to work with Sir Russell Brock. Brock was getting interested in using hypothermia in open heart surgery. Actually, when John got there, Brock paid very little attention to him. Although he was using hypothermia, he hardly asked John anything about it and made him feel rather useless. After tolerating this for a while he decided he'd better get out and go somewhere else, and that's how he came with me.

John is a hard-working, very intelligent, fine person. We worked together on some of the early attempts at making a heart-lung machine before anybody else around here had thought of it. We tried a variety of things which were cumbersome and not very good. We did do a few patients, but the results were quite unsatisfactory.

Hughes: Was this a prototype of the disk oxygenator?

Gerbode: It's before the disk oxygenator.

Hughes: What did the apparatus look like?

Gerbode: Well, we actually were oxygenating the blood in plastic bags and then putting the blood from plastic bags into a transfusion outfit which went into arteries. It was a very crude, simplistic approach to the problem. John, having worked with me for a while and helped with some of the other procedures, went back to Canada where he got a position at Edmonton on the faculty and finally became a professor and probably the leading cardiovascular surgeon in western Canada.

Hughes: He dropped his interest in hypothermia?

Gerbode: Well, he kept up hypothermia to a certain extent, but as soon as a heart-lung machine became available in any feasible form, he used it quite often with hypothermia. John has been a very good friend of mine all these many years, and I see him at high-level meetings here and there. He's been made a member of organizations like the American Surgical Society and has done extremely well.

Hughes: When these fellows came, was it simply a matter of your deciding that they were adequate?

Gerbode: Yes, I decided and then I would just simply tell the faculty that they were coming over to work with me. It was easy for them to say yes because it didn't cost them any money.

Hughes: The NIH stipend was open-ended?

Gerbode: It was open-ended. I didn't have to submit any names to them either. Shortly after that, we had a whole bunch of fellows who started coming and particularly, later on, when we got to using a sort of a disk oxygenator.

Dennis Melrose

Gerbode: We brought Dennis Melrose over from London. Dennis had invented an oxygenator which worked like a washing machine. It thrashed the blood around and it was very traumatic and not at all satisfactory. But we didn't know all that when we brought him over with his machine.

Hughes: What did it look like?

Gerbode: Well, it had a big cylinder in which the blood went through over baffles and then it moved as well and shook the blood so it would be exposed to the oxygen. By that time, we were doing some open heart cases and I used it on a series of tetralogies of Fallot, blue babies, and also used another one as a sort of a trial experiment to see which one would be the best. Actually, the other one turned out to be better.

Hughes: Was that the one that was developed at Stanford?

Gerbode: Yes, the one that was developed at our place. So Dennis went back to England and he actually abandoned that oxygenator very soon after he got back and started working on a membrane oxygenator and doing some other experimental work. He's since retired from the

Gerbode: faculty of the London Postgraduate Medical School and is now, I think, a consultant on a limited basis to Hammersmith Hospital. Dennis was a very good person to come at that time because he was very interested in the progress of surgery and had suggested using potassium arrest to stop the heart so it could be operated upon quietly. This was adopted quickly in various parts of the world. Unfortunately, it not only stopped the heart, but it also eventually began to produce fibrosis in the myocardium. This was not a very good thing to happen, so it was finally abandoned. However, later as everyone knows, potassium came back again with the use of cold cardiac arrest to stop the heart but in much reduced concentrations so it wasn't injurious.

Hughes: How could you stop the heart if you didn't use potassium?

Gerbode: We didn't stop it in the beginning. We just cross-clamped the aorta. That made the heart ischemic and it slowly quieted down and would, of course, stop eventually. So we'd leave that clamp on only for about three or four minutes so the heart wouldn't be permanently damaged. Then we'd take the clamp off again and perfuse the heart until it recovered and then we'd clamp it again and start working some more.

Mark Bainbridge

Gerbode: In any event, there were some really outstanding people who started coming from England. One of the first was Mark Bainbridge. He'd been working with a heart team in England. He did some very fine experimental work with me and helped with the operations in the operating room. By that time we had really quite a large volume of open heart cases to do.

Hughes: When was this?

Gerbode: This was, I guess, '54 or '55. Anyway, Mark finally went back to England and there established a heart team at St. Thomas' Hospital under John Kinmonth. Mark is one of the very best in Europe at the present time. Mark divorced his nice wife by mutual agreement and now is remarried to a lovely woman who travels with him everywhere. He has a son who is a godson of mine and a couple of daughters who are all doing well.

Gutmund Semb

Gerbode: Around that same time, Gutmund Semb came over. I had interviewed him in Germany at a German Surgical Society meeting. Gutmund's father was Karl Semb who had started thoracic surgery in Norway. He was the dean of thoracic surgery in Oslo. At this time he was a very sick man and was hospitalized. But Gutmund wanted to come over and have a year or so with me. He was one of the most outstanding fellows I ever had. We used to call him the surgeon with three hands because he always seemed to do a third more than anybody else in the operating room. Also characteristic of him, without being told what to do, he'd go through all our patients in the hospital--it might be twenty-five or more--either to be operated upon or already operated upon. He'd see them all at seven in the morning and he'd know all about their medications and what their wounds were like, and he'd report to me in the operating room.

Gutmund finally went back to Norway and worked his way through various hospitals until he finally was given the same chair that his father had in the university in the big municipal hospital where he is now. He has a lovely wife named Greta who is a great skier and outdoorswoman. He has lovely children. His youngest son caught his first fish down here at the dock where my boat is. Gutmund has been a great friend. I see him at various meetings. Actually, he's coming here with his wife in October [1984] to the meeting [in San Francisco] of the American College of Surgeons.

I can't really give you an abbreviation of all the fellows who were there. There were eighty-six of them.

Hughes: Did most of them operate and do research in the dog lab?

Gerbode: Most of them did a combination of assisting at operations and doing work in the laboratory when they weren't in the operating room. They all had a project to do in the laboratory.

Hughes: Did they all fit in nicely with your team?

Gerbode: From the point of view of personality and disposition, every one of them fitted in beautifully.

Hughes: Did you have some sort of personal connection with all these people before they came?

Gerbode: No, I didn't. Some of them just wrote to me or their professors wrote and asked me if I would take them. That was one of the common ways of doing it.

The Evarts Graham Fellowship

- Gerbode: Another way was the Evarts Graham Fellowship. He was a very famous chest surgeon in the United States who did the first pulmonary resection for cancer of the lung. He was honored by the American Association for Thoracic Surgery by the association giving a Graham traveling fellowship every year to somebody outside the country. These fellows could go wherever they wanted once they got the fellowship, and three of them elected to come with me. They were very fine people and they were assured of a good job when they got back to England and I was very happy to have them.
- Hughes: Did you ever have American fellows?
- Gerbode: Yes, I had American fellows too, and every one of the American fellows has done well.
- Hughes: I read somewhere that you had trained more cardiovascular surgeons than anybody else. I don't know if it was in the country or in the world? Do you think that's true?
- Gerbode: I don't know whether we added them all up. But I guess maybe that wouldn't be true now, because there are so many big units that are just filled with trainees of different kinds. But at that time I guess I had one of the few training programs [in cardiovascular surgery] in the world.
- Hughes: Where else would there have been training programs?
- Gerbode: Oh, in Houston, the Mayo Clinic, New York. The Mayo Clinic had quite a few fellows. I don't know if they really were concentrating on training cardiovascular surgeons. I think they fitted in with the general surgical program there.
- Hughes: Were these other programs emphasizing the research aspects as well as the surgery?
- Gerbode: No, most of them were not. I think the unique thing about my program was that I really expected them all to do some experimental work in the laboratory, and most of them liked that. They wanted to do some experimental work and to write some papers.
- Hughes: Had they not been used to doing that wherever they originated?
- Gerbode: Most of them had never done any experimental surgery before. So this was really quite good for them.

Torkel Aberg

Gerbode: I could really talk about a great many of them. [Torkel Aberg] came from Stockholm as a fellow and he had never even been trained in general surgery. He didn't know how to tie a knot. But we put him in all the operations and had him assist and do little parts of the operation and pretty soon he was as good as any of the general surgical trainees. By the time he finished, after a year and a half, he was an excellent cardiothoracic surgeon. He now is probably going to be a professor of surgery at a university in Sweden.

Hughes: Why did you decide to take a person who hadn't surgical training?

Gerbode: I didn't know that he was lacking in general surgical training. He had such good recommendations because he was very studious and very intelligent, so I took him on that basis. But I was delighted that he came because he turned out to be really a first-class person and he's one of the finest cardiac surgeons in all of Sweden at the present time. I'm very proud of him.

Hughes: Is there anything more you care to say about the Fellows Training Program?

Gerbode: All I can say is that I looked over the lot a number of years ago and I found that sixty-three out of the eighty-six were either in very active programs as cardiothoracic surgeons or they were heads of departments or assistant heads of departments. Only two of them, out of the whole lot, sort of went by the board and became what you might call 'journeymen' thoracic surgeons. They were not failures, but they weren't doing a lot of cardiac work.

Hughes: Is it true to say that the fellows program in a way was a substitute for a residency program?

Gerbode: Yes, it was. You see, when Stanford moved to Palo Alto the whole residency program stopped and there wasn't any way of getting residents. It was even very difficult to get general surgical residents. So [the fellows program] meant that I had men that were absolutely devoted to me or to my unit full time. I was way ahead of everybody else.

The Accomplishments of the Medical Research Institute

Hughes: We talked about MRI, but I don't believe we talked in summary about its accomplishments.

Gerbode: Initially MRI was called the Institutes of Medical Sciences. At that time, I had one of the biggest grants in the [Presbyterian Medical] Center, an NIH grant, which gave me about \$450,000 a year to work on experimental things and to create safety factors and new knowledge about extracorporeal circulation. They maintained this grant to me and my unit, which included Jack Osborn and Mr. Bramson and a number of PhDs, for about ten years.

Hughes: The grant was specifically to develop extracorporeal circulation?

Gerbode: Yes, it was [awarded] to make extracorporeal circulation, open heart surgery, safer. Out of that grant, of course, we developed the on-line monitoring for seriously ill patients and the use of the computer to follow sick people. This all came out of that original grant, really, because we had the people and some of the equipment and the desire to study these things. Jack Osborn was in charge of the postoperative studies. The grant really went on until open heart surgery became pretty safe.

Hughes: Then what did you do about funding?

Gerbode: Then we had to cut back on the number of people we were supporting on the research funds. But we managed to keep going by applying for separate funds for specific programs.

Hughes: When did that NIH grant stop?

Gerbode: Oh, I can't remember the exact date. It must have been about ten years ago, I guess.

Hughes: Do you want to say anything in specific about the accomplishments of the institutes?

Gerbode: I guess outside of developing open heart surgery at our place, we published a great many papers on techniques that would refine open heart surgery and make it safer. We developed a membrane oxygenator and wrote some papers on that. We talked a lot about the biology of postoperative care and wrote papers about that which were all results of our research at MRI. The eye department [the Smith-Kettlewell Institute of Visual Sciences] got to be very prominent under Jampolsky. They had a lot of individual research

Gerbode: programs connected with strabismus and blindness and a great many things connected with the eye, some of which I don't even understand.

The neurological institute [the Institute of Neurological Sciences] under Finley did quite a bit of work on the long-term results of inflammation of the brain. He followed patients for a long time and published long-term results of these various illnesses in childhood. We never did much research in MRI in general surgery. The cardiologists, originally, were quite active at MRI, but as their clinical load got greater it was much more interesting for them to take care of sick cardiac patients than it was to do pure research. [whispers] Besides there's more money in it.

Hughes: The reason for not much interest in general surgery was because the cardiovascular unit was so strong?

Gerbode: That and also because, I guess, there weren't any people around who could identify problems in general surgery that would be interesting enough to fund.

Hughes: Did you have general surgeons on the staff?

Gerbode: Oh yes.

Hughes: Anything more to say about MRI or HRI?

Gerbode: I guess, really, to find out what the accomplishments were, you'd have to look over the publications. Every year MRI would turn out maybe fifteen or twenty publications that were accepted in the national journals. More recently, I guess, my unit has done more work in immunology under Charles Glaser, who is a member of my unit. He's done quite a bit of work on enzymes, particularly those with pulmonary function.

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Gerbode: The rejection phenomenon is probably the biggest roadblock to advances in transplanting tissues. It wasn't until recently that any drugs influenced it very much. But now they have some drugs that influence the rejection phenomenon quite a good deal, which has made cardiac transplantation a lot more feasible and more successful. Immunology gets involved with cancer. The production of interferon is another example of what immunology research has developed. I think that this is probably going to make a big difference in the future discoveries in immunology. It will make a big difference in how we treat cancer in the future.

Hughes: How much was this decision [to emphasize immunology at HRI] based on the availability of money for immunological research?

Gerbode: It's mainly based on the availability of the people who can and are willing to do the research. If they're good they can get the money. [HRI] provides them with laboratories and equipment of various kinds and gives an umbrella which protects their work and gives them social security and other things which people have to have for their own protection these days.

Hughes: Does this emphasis on immunology relate at all to the decision of Presbyterian to do heart transplants?

Gerbode: Yes, the fact that some drugs came along that made it easier to control the rejection phenomenon made it easier for them to make the decision. The other reason they made the decision was that we have a very good renal transplant unit. If you get kidneys for transplantation, the same person who gives the kidney has a heart. If the family are willing to give the heart, providing it's a younger person, that heart should be used for cardiac transplantation. So they realized that they had the source of hearts and we have a big cardiac unit, so we had the source of patients too.

Hughes: Does the research in immunology have any direct link with the transplantation program?

Gerbode: It doesn't, really, but every discovery in immunology and the control of the rejection phenomenon has a direct practical connection with what is being done or wants to be done in surgery. Surgeons can transplant almost any organ except the brain and the central nervous system. They haven't done it because they know the organ would die in three weeks or sooner from rejection. Anything that will stop that rejection is something that preserves the future of those particular operations.

Hughes: Stanford University in Palo Alto, of course, is one of the pioneers in heart transplantation. Wasn't Stanford seen as a strong competitor when Presbyterian decided to set up its own transplant program?

Gerbode: First of all, Stanford didn't have a kidney transplant program. For some reason they didn't want one. I think they want one now. We didn't have a cardiac transplantation program until last year (1983). Meanwhile, Stanford has done over 200 transplants. So we're very much latecomers in the whole field.

- Hughes: I would think that there would have been fear that in a relatively small radius that two heart transplantation programs would not be viable?
- Gerbode: Norm Shumway [at Stanford] likes us very much and he'd be the one that might be concerned about it. But I think he's got as much work as he can take.
- Hughes: And that was a consideration when you were starting up the program here?
- Gerbode: I think so. That plus the fact that we probably had a fairly good source of hearts and kidneys.
- Hughes: There is patient demand, then, for transplantation?
- Gerbode: Oh yes! The problem is that there aren't enough hearts to go around.
- Hughes: From how large a radius are organs pulled for Presbyterian?
- Gerbode: They're pulled from all over northern California. They bring in kidneys or hearts by air. The techniques of preserving the organ till it gets to the hospital are much better now than they were even two years ago so the organ is still alive when it gets here even though it's been taken out of the body.
- Hughes: I believe Stanford is the only heart transplant unit--I don't know if it's in the country or on the West Coast--that has Blue Shield coverage.
- Gerbode: Stanford is the only one on the West Coast.
- Hughes: That makes it very difficult for the average patient to come to Presbyterian.
- Gerbode: All patients don't have Blue Shield. Even the ones who have heart problems and go to Stanford, the percentage who has Blue Shield is not very great. Most of the patients, for that reason, have to raise money anyway.
- Hughes: How much does heart transplantation cost?
- Gerbode: Oh, you get various figures. I think about \$50,000. It's very expensive.

XII MISCELLANY*

Honors

The Second Henry Ford International Symposium on Cardiac Surgery

- Hughes: We've talked a bit, but not completely, about various honors you have received. I wanted to talk about the Second Henry Ford International Symposium on Cardiac Surgery which was held in 1975. I believe that over 700 specialists attended, physicians and engineers as well as surgeons. They came from all over the world. What was the purpose of this symposium?
- Gerbode: It was simply to bring everybody up to date on the current practice and level of excellence in cardiac surgery.
- Hughes: Whose idea was that?
- Gerbode: I guess it was the [cardiovascular surgery] department at Henry Ford Hospital.
- Hughes: Which is in Detroit?
- Gerbode: Yes.
- Hughes: Do they have a strong program in cardiac surgery?
- Gerbode: They have a strong program there, too, yes.

*Most of the topics in this chapter, as well as some in the immediately preceding and following chapters, were generated by a selective reading of Dr. Gerbode's correspondence and surgical records dating from the mid 1940s to the early 1980s.

Hughes: Was it a particularly significant symposium?

Gerbode: Very much so because they spent a lot of money publishing it and all the speeches were carefully recorded and edited and put in two volumes, I think, and were available at all the libraries. It was a very successful meeting.

Hughes: How was it funded?

Gerbode: Henry Ford Hospital.

Hughes: I believe you were honored as a cardiac pioneer. Do you remember what accomplishments were singled out?

Gerbode: Well, I guess I've been called a pioneer several times. I don't specifically remember being called one there. I guess there were pioneers present at that conference: Clarence Crafoord, Viking Björk, and Robert Gross. These are all men who were definitely pioneers, much more so than I.

Shiley's Celebration of the 40th Anniversary of Cardiac Surgery

Gerbode: Shiley, [a company manufacturing medical equipment], selected [eleven cardiovascular surgeons] in the world who were considered pioneers in the sense that they really moved things along in a hurry.

Hughes: How did they come to that decision?

Gerbode: I guess by reading all the publications. They had a group of research people and they came up with these people and I was one. They did this, I believe, at one of the college [American College of Surgeons] meetings in San Francisco [in 1980 to celebrate the 40th anniversary of cardiac surgery]. They honored these people by putting out a book on them and telling what they did. Each one got an oil painting of himself as a present. Nobody in my family except Penny wanted it, so she's got it.

Hughes: Why did Shiley decide to do this?

Gerbode: Well, these things are all done for advertising really. Shiley makes valves and a lot of other things. It was really an advertising stunt from their point of view.

Hughes: An expensive one.

Gerbode: Very expensive because they had about seven or eight hundred people for dinner when they made these presentations at the Fairmont Hotel, no less.

The Michael E. DeBakey Award

Hughes: Then in 1982 you received the Michael E. DeBakey Award. Do you know anything about the history of this award?

Gerbode: A group of people who were trained with Dr. DeBakey decided they would form a society in his honor. They call it the Michael E. DeBakey International Cardiovascular Surgery Society.

Hughes: This is very recent?

Gerbode: I don't know when it was founded. I guess about ten years ago. Subsequent to that, they decided occasionally to make somebody an honoree of the society. Somebody put up a lot of money and had a bronze statue made of Dr. DeBakey which I think is in front of the Methodist Hospital or somewhere down in Houston. Then they decided that they would have small facsimile copies made of this statue. They would present this to each one of the honorees. I got one when I was there and it weighed a lot. I had to carry it all the way back from Buenos Aires.

Alton Ochsher, who was a famous general and thoracic surgeon, was the first honoree and the second was Charles DuBost from Paris, and I was the third. Since then there haven't been any, but there'll be a meeting in Monaco in September 1984 at which point a very fine fellow who is a very fine surgical teacher and surgeon will be honored.

Hughes: What are the criteria for making these choices?

Gerbode: I guess maintaining high standards in cardiovascular surgery and making contributions to the field.

Hughes: Do you, as an awardee, automatically become a member of the society?

Gerbode: Yes, an honorary member.

Hughes: Does this society do anything other than make these awards?

Gerbode: It has a scientific meeting every other year. This year the meeting is going to be in Monaco and there'll be scientific papers presented and the person who gets the award has to give a major address.

Hughes: What did you speak on?

Gerbode: Something like important considerations in extracorporeal circulation. They've already decided that in two years they will go to Australia and have the meeting.

Hughes: It's obviously a society that meets all around the world.

Gerbode: Yes.

Hughes: Do you have any idea who proposed you for the award?

Gerbode: They have a committee, and I know who are on the committee and who is the chairman of the committee. But, the committee may have gotten suggestions from outside of the organization. I don't know. Incidentally, they have a very fine stipend that goes with it, too. I don't know whether you need to put that in there, but it's \$10,000, and all expenses paid, and you don't have to pay income tax on it. It's an honorarium and you don't have to pay income tax on honorariums.

Communication Among Surgeons

Hughes: How do you keep abreast in cardiovascular surgery?

Gerbode: We know all the important people because we've all grown up together, been to the same meetings, and talked and read about the same subjects. We are actually in communication [all the] time. So if something comes along that you're curious about, that somebody is doing in Pittsburgh or New York or somewhere, you know the person involved and what you usually do is talk to them on the telephone.

Hughes: Now that the field is larger is that still possible?

Gerbode: Very possible. The individuals who are running the big shows, making contributions, are very often still the ones in charge of their departments even though they have younger men coming along doing a lot of the work. Still they are responsible for the work that comes out of their units.

Hughes: When you were trying a new procedure for the first time, did you usually get to know about it by word of mouth rather than reading about it in a journal?

Gerbode: It was a combination of hearing about it and reading about it and sometimes using something that you had developed in the laboratory.

Hughes: Did you still feel it necessary to keep up with the literature?

Gerbode: Oh yes! In fact, I still do.

Hughes: Considering that you were at the forefront of cardiovascular surgery, the literature, I would think, would have lagged behind.

Gerbode: Well, in the very beginning, there were so few people doing it and so few people writing about it, you could read all about it in one afternoon. But now every journal is filled with something in the cardiovascular field. There are so many young people working on the experimental and clinical aspects of it and writing papers that you can hardly keep up with the flood of publications.

The Bohemian Club

Hughes: You also belong to a lot of social clubs. Are any of these related to your career in surgery?

Gerbode: You mean the clubs I belong to here in town? No.

Hughes: So there was no cross-fertilization between your social--

Gerbode: No, nothing connected with them at all.

Hughes: I'm thinking particularly of the Bohemian Club.

Gerbode: I was made a member of the Bohemian Club when I was still in medical school. In the medical profession I wasn't contributing anything yet.

Hughes: Are there medical camps?

Gerbode: There are some camps that have a few more doctors than others. But I think [the professions] are generally scattered. Our camp has a lot of lawyers and judges. We've had three judges and about four or five lawyers.

Hughes: Why do you people become members of a specific camp?

Gerbode: Because they have friends and they're invited to join them. Some of the camps have big-time politicians. One camp, for example, is the bastion of the Republican party.

Hughes: Who proposed you?

Gerbode: I was proposed by a couple of men who knew me in Piedmont who were members. It was a little rare for a young person to become a member of the Bohemian Club. There were only three or four younger members than I when I went in.

Hughes: Why did you decide to become a member?

Gerbode: Well, I thought it was a very interesting group of people and what they were doing was very unusual: writing their own plays and music and putting on plays. It was a group which was obviously interested in good fellowship.

Hughes: Did you ever participate in their plays?

Gerbode: . Oh yes!

Hughes: Everybody does?

Gerbode: Not everybody, but I participated several times and I was once the assistant stage manager for a big production.

The Tuberculosis Hospital in San Luis Obispo

Hughes: Okay, another topic. The tuberculosis hospital in San Luis Obispo.

Gerbode: Well, I decided that if I was going to be a cardiothoracic surgeon, I'd really have to have more experience in thoracic surgery. We didn't have a large enough volume of ordinary chest cases going through the university service here at [San Francisco] Stanford [Hospital]. So a couple of the people in charge of the San Luis Obispo General Hospital asked me if I would come down and operate upon some of the people who had tuberculosis.

Hughes: How did they know to ask you?

Gerbode: Well, I was at a university hospital and I was a young thoracic surgeon. I said sure, I'll be glad to come down. I decided that by doing a lot of patients who had tuberculosis that I'd get to know more about the field, and also it'd be very good for my record. About twice a month I'd get on an airplane at six in the morning and go to San Luis Obispo. They'd meet me at the airport, then take me to the hospital, and they'd have the first case all ready to go. I would have gone over the case beforehand through the mail or on the telephone, so I knew what was wrong and what had to be done. So then I'd operate, say, until three or four in the afternoon doing two or three cases, and then if the patient seemed to be getting along all right postoperatively, I'd catch the 4:30 or 5:00 p.m. plane home.

Hughes: If not?

Gerbode: If not, then I'd spend the night there.

Hughes: The local surgeons weren't specialized enough to--

Gerbode: There were two local surgeons who weren't chest surgeons, but were good [general] surgeons who were anxious to help and participate in this. It was very interesting; when I first started there were a couple of families who'd been in that hospital, serially, for several generations. They obviously got the disease in their homes and then they went to the hospital. There was one whole family. I think it was called the Ayala family. In any event, I think there were three or four members in the hospital at the time and a couple of them had died and one or two, I guess, had at least been arrested, if not cured. But hardly anyone had gone down there to do lung resections or thoracoplasties or some of the more advanced methods. That was called "advanced," at that time.

This was rather major surgery--big cases. By the time I finished there, which was a year later, I had just about emptied out all the potentially surgical cases and about half the hospital. There were nurses down there who had been on civil service for so long that they really almost ran their environment. By the time we finished down there, we cleaned out so many patients that they didn't need so many of these civil service people, which made them kind of unhappy.

Hughes: You mentioned thoracoplasties.

Gerbode: That's a matter of taking out ribs so that the chest wall would collapse in that area and make the lung collapse where the tuberculosis was. When it collapses, it puts that area of the lung to rest and it also lets it heal.

- Hughes: It usually worked out that way?
- Gerbode: Yes. Now they're more apt to go in and resect that part of the lung.
- Hughes: But you weren't doing that then?
- Gerbode: We were just starting to do them.
- Hughes: Why were you just starting?
- Gerbode: Because there hadn't been anyone there before who'd been doing any of this major surgery on the TB patients.
- Hughes: But resections were commonly done elsewhere?
- Gerbode: They were just beginning to be done.
- Hughes: What would have been more difficult about a resection?
- Gerbode: Well, opening a chest and removing part of the lung is technically a little more difficult than doing a thoracoplasty.
- Hughes: There was no problem with anesthesia?
- Gerbode: Well, they had one fellow down there who was a pretty good anesthesiologist and he learned as we went along.
- Hughes: Whose idea was this to have you operate? Did the local surgeons decide they needed some help?
- Gerbode: There were two local surgeons who decided that they weren't really getting along as well as they should be. And then a certain amount of money was allocated for the care of these patients and the people in charge of the budget were tired of paying out money to keep [certain patients] on as boarders forever. Even they realized that there were other ways of taking care of patients than just boarding them forever.
- Hughes: I believe you were doing these cases between 1950 and 1953 and you already at that time, if I remember correctly, were very interested in cardiovascular surgery. You didn't feel that this sort of work was taking you away from your real interest?
- Gerbode: No, it was just something that I as a cardiothoracic surgeon felt that I had not done enough of. I thought I'd better go do some of it so I really had some actual experience.

- Hughes: Did it help at all with the cardiovascular surgery?
- Gerbode: Oh yes, I think it did help.
- Hughes: Why did you stop?
- Gerbode: I stopped mainly because we'd cured nearly all the patients. We didn't kill any of them, and we mostly got them out of the hospital.
- Hughes: I noticed a lot of Spanish surnames. Is that just because there are a lot of Spanish surnames in the area?
- Gerbode: Yes, there are a lot of Spanish people down in that part of the country.
- Hughes: So there was no particular predilection of the Mexicans for TB?
- Gerbode: No, except some of the families, of course, just pass the TB down in their families forever.

Early Surgical Lists

[Interview 18: June 21, 1984]##

- Hughes: I was going through your correspondence and I came upon a surgery list dated January 1946 through December 1947. There was a very wide range of types of operations. I was wondering if you were, at this point, already beginning to think about specializing in cardiovascular surgery?
- Gerbode: Yes. The trouble is, of course, you had to encourage people to refer cases like this to you because many people didn't realize these procedures could be done. So they had to be educated.
- Hughes: Did you come home from the war with the idea of specializing in cardiovascular surgery?
- Gerbode: I came home realizing that vascular and thoracic surgery were going to be the future. Cardiovascular was certainly in the wings and we all knew it.
- Hughes: Was there something that happened during the war that made you reach that conclusion?

Gerbode: Thoracic surgery became a reality during the war. One of my friends was a very good general surgeon at the Mass. General Hospital in Boston. He came back from the war and he found everything was transthoracic. He said, my problem now is how to do a breast operation transthoracicly just to be in tune with the times. [they both laugh]

Hughes: Was Stanford particularly trying to attract cardiovascular cases?

Gerbode: Not particularly.

Hughes: Holman wasn't--

Gerbode: He did attract a certain number of them, but his wife was the one who really provided many of the cardiovascular cases because she was a very successful and dedicated pediatrician. So she had a lot of patients in her practice and as things developed, she would cautiously release a few once in a while.

Hughes: I notice that there are six Blalock operations and that in each case you assisted Holman. The same was also true of patent ductus ligations. Did you have trouble convincing Holman to let you operate on your own?

Gerbode: No, he wanted to do them because it was the beginning edge of things and the professor always likes to be the one to start things going. I was very happy to assist him and I learned quite a bit by assisting him.

Hughes: Did you eventually get to the stage with him where you were doing the procedures yourself?

Gerbode: Oh yes! In fact, his wife began to send the cases to me, which was wonderful.

Hughes: There's another list of thoracic operations, dated 1950. There's again quite a range and I'll read only the cardiovascular operations. There were sixteen ligations for patent ductus, five Blalock, six coarctations of aorta, two pericardiectomies, one transposition of great vessels, one Brock procedure for pulmonic stenosis, one pericardiotomy for removal of bullet, one cardiectomy for removal of bullet, and one finger fracture of mitral valve for mitral stenosis.

Was it unusual at that time to have an operating list with this many cardiovascular cases?

Gerbode: It was certainly unusual in San Francisco because we were dominating the scene in northern California at that time.

That removal of the bullet was an interesting one. This was a duck hunter who was up in the [Sacramento] valley sitting in his blind and a young man started shooting a '22 nearby. They shouted at him, telling him to stop shooting; there were people around. Well, he didn't and one of the bullets went into this man's chest, went through his heart. They got him to the hospital; he bled a little bit, but he didn't have to have an operation to stop the bleeding. I think they gave him a transfusion. Then they took an xray and there was the bullet. So they sent him down to me and I did some studies on him and found the bullet within the base of the aorta just outside the heart. That was kind of scary because it might have gone anywhere in the body from there. So we operated upon him. I opened up his aorta and there it was. We just plucked it out and closed up the aorta and he was fine.

Hughes: It wasn't embedded in the wall of the aorta?

Gerbode: No, it was just lying there. It went all the way through the heart and lodged in the base of the aorta.

Hughes: Were you thinking of yourself as a cardiovascular surgeon by 1950?

Gerbode: Well, I guess I was beginning to think of myself that way.

Hughes: How much encouragement was Holman giving you in this line?

Gerbode: Holman was never a person that would encourage you to do anything much. You'd have to tell him what you wanted to do and then start doing it. Then if the results were satisfactory, he wouldn't prevent you but he wouldn't really sit down and say, now I think you ought to do this or that.

Hughes: Was that just his conservative nature?

Gerbode: Yes.

Hughes: So it wasn't particularly that he was interested in keeping the power in his own hands?

Gerbode: Well, he was looking toward retirement at that time. He had to leave Stanford University Hospital at 65 because this was a rule. So his wife created an environment for him at Children's Hospital and then she encouraged me to go over there and help him to do cases

Gerbode: which she sent to him. I already had established a unit at Children's Hospital by seeing that they bought the right equipment and more or less outlining what the program should be. So it was easier for him to step in and start doing it.

I did a few cases over there myself, but I never really wanted to develop another cardiovascular unit over there because it was enough doing one at the old Stanford Hospital.

Hughes: How far did Holman get?

Gerbode: He did only a few cases, coarctations, not intracardiac cases. Only a few Blalocks and ductuses and things like that.

Hughes: Was that because the pump wasn't developed?

Gerbode: He didn't have a heart-lung machine.

Hughes: Do you think he would have been confident enough to go ahead with that at his age?

Gerbode: I don't think so.

Hughes: So, in 1950, according to this list anyway, these were all closed heart operations.

Gerbode: Yes. There was one mitral patient, wasn't there?

Hughes: Yes, there was at the end.

Gerbode: That's a closed operation too, though.

Hughes: Finger fracture. So that very well could have been a closed operation. Was that the common method for doing mitral valves at that time?

Gerbode: We started by doing finger fractures. Later on I used an instrument, which I developed, to fracture the valve through the ventricle.

Hughes: That was the valvulotome?

Gerbode: Yes.

A Letter to John Kinmouth, January 1957

Hughes: I have a letter that you wrote to John Kinmouth in January 1957. I'll read just a bit of it: "As to the Ivalon sponge, I can say that I find a great falling off of enthusiasm for it here as well. I have only used it in a few cases and have now switched to teflon for the abdominal aorta and iliacs. Time will tell whether this will prove to be better. My oldest homograft cases are now six years and they are doing extremely well and I still like them the best."

What is this sponge?

Gerbode: Well, this is the Ivalon sponge which people had offered as a means for closing holes in the heart and actually making some grafts out of it. But it was not very good material. It was the only thing we had at the time. I used it in a few cases, but I was never very satisfied with it.

Hughes: And teflon came along later?

Gerbode: Teflon came along later and that was, of course, knitted fabric and you could do more with it.

Hughes: Why did you like the homografts the best?

Gerbode: One reason is that I had developed an arterial bank at the Irwin Memorial Blood Bank and we had developed a method of freeze-drying them and they fitted very well.

Hughes: Another letter to Kinmouth, this one written in October, 1958. You wrote of being able to convince a good many people at the American College of Surgeons meeting that the median sternotomy was an excellent incision for intracardiac surgery. Why?

Gerbode: Well, it's easy to do and it gives beautiful exposure and it doesn't cause as much postoperative pain.

Hughes: Why were people doing it the other way?

Gerbode: Well, they were using a transverse incision which is much more complicated to close and there are many more postoperative complications. So I just thought the median sternotomy was better. I think most people use it now throughout the world, not exclusively, but for most cases.

Hughes: Why did they start with the transverse incision?

Gerbode: Oh, I guess they thought this would give you better exposure to the heart and many of them had not had any experience with the median sternotomy. We had, because we used it in pericardiectomies. We did a lot of pericardiectomies and this was a wonderful incision for that. Although there were other people [who thought otherwise]. For example, [Edward] Churchill's group in Boston [at Massachusetts General Hospital] believed in a left thoracotomy for a pericardiectomy. But we didn't think we could free up the veins entering the heart as well with that incision as we could with a median sternotomy.

Hughes: Were you the first to promote the median sternotomy?

Gerbode: I think some people thought about it at the same time. I know that Ormand [C.] Julian had thought about it and started using it at about that time, too.

A Letter from John Kinmouth, January 1959

Hughes: In January of 1959 Kinmouth wrote to you thanking you for getting perfusion going as a practical proposition at St. Thomas'. I was wondering what exactly you did.

Gerbode: Well, I was a guest professor there at St. Thomas', just when they were getting their program cranked up.

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Gerbode: They were a very conservative group, I must say. John Kinmouth was an extremely conservative surgeon and it wasn't until Mark Bainbridge came along, one of our former fellows, and took charge of the program, that it really got going.

Hughes: Was this just the surgical tradition in Britain?

Gerbode: No, most of the teaching hospitals in Britain were inclined to be rather conservative about new things. John himself was particularly conservative.

Hughes: Did you introduce one of your oxygenators?

Gerbode: Yes, we sent one of the oxygenators over to them, and they used it for a while. Later on they switched to bubble oxygenators, as most people did.

Hughes: Did they use the Melrose heart-lung machine as well?

Gerbode: No, they used our disk oxygenator.

A Letter to John Kinmouth, April 1959

Hughes: You wrote to Kinmouth in April 1959: "We have been using polybrene routinely and there's no question in my mind of its being superior to protamine. I have still not decompressed the left side of the heart and I really question whether you will do it either once you feel completely at home with these patients. I have not been stopping the heart with potassium for interventricular septal defects as often as I used to, and this helps of course in not having a flacid heart to start off with after the repair."

What is polybrene?

Gerbode: Polybrene is a chemical which neutralized heparin after the operation was over. I'm not sure that we continued to use it afterwards, I think we went back to protamine.

Hughes: Do you remember why?

Gerbode: I can't remember why. But we also gave up using potassium arrest by itself because I began to worry about it being injurious to the heart itself. It wasn't until many years later that they combined cold arrest with potassium with hypothermia, but with a much smaller concentration of potassium so that it wasn't injurious to the heart itself.

Hughes: So it was a question of high concentrations being toxic?

Gerbode: Yes.

Hughes: Was this observation and trial and error?

Gerbode: Yes, pretty much so.

Hughes: How was the heart stopped with potassium?

Gerbode: You cross-clamped the aorta and injected the material into the base of the aorta and then it got into the coronaries because the coronaries are right there.

- Hughes: Was that something that was developed in this country?
- Gerbode: No, Melrose developed it in England. He brought it over to us when he was with us as a fellow.
- Hughes: What does the term 'decompression of the left side of the heart' mean? Remember that sentence in the letter?
- Gerbode: That means putting a catheter into the left ventricle to be sure that there wouldn't be any strain on it when you were coming off bypass. But we didn't follow that system very much. It didn't prove to be very efficacious.
- Hughes: It just wasn't necessary to do that?
- Gerbode: It wasn't necessary to do that.

A Case Report from Letterman General Hospital, February 1960

- Hughes: Here's a case report from Letterman General Hospital dated February 8, 1960. I thought I'd read it because I think it's an interesting account of how closed heart mitral commissurotomies were performed: "A purse-string suture was placed in the left atrium and an index finger of the right hand inserted into the atrium where it became very obvious that a half centimeter opening of the mitral valve existed. All efforts to open this valve by pressure on the index finger were to no avail. At this point, the purse-string suture was then placed in the apex of the heart overlying the left ventricle and a stab wound into the ventricle made, following which a dilating valvulotome was introduced into the left ventricle and guided up into the stenotic mitral valve where, after several efforts, the valve was finally fractured. The valvulotome was then withdrawn and the purse-string suture in the ventricle drawn taut, following which several interrupted sutures were placed in the ventricle which adequately maintained hemostasis. After the fracture of the valve it was felt that a significant regurgitation was occurring from the left ventricle back into the left atrium and the valve orifice appeared to have been widely opened. The right index finger was then withdrawn from the left atrium, following which the purse-string suture was tied and this also maintained absolute hemostasis."
- Gerbode: Did I dictate that?

Hughes: I think you did. It has your name at the top. There's a bit more too. "The chest was then closed with interrupted black silk sutures in layers after having placed a posterior intercostal catheter in the eighth interspace in the posterior axillary line. The patient was then returned to the recovery room in only fair condition. This was not a septic case." This case was performed in February 1960. Why do you suppose you didn't use the pump?

Gerbode: The army hospital at that time didn't have a heart-lung machine.

Hughes: They didn't consider transferring these cases to Presbyterian?

Gerbode: Well, this case sounds as though it would be one for closed mitral valvotomy, and so they kept it there.

Hughes: What that a good decision?

Gerbode: This patient had mitral insufficiency and maybe had to be reoperated upon later.

A Letter to Viking Björk, May 1960

Hughes: In May 1960, you wrote to Björk that you had performed sixteen consecutive cyanotic tetralogies with two hospital deaths. Was this a good record?

Gerbode: I think it was very good.

The Look Magazine Article

Hughes: I saw an article in Look magazine in 1963 which was written about you and the cardiovascular team at Presbyterian. It mentioned that team members volunteered to give back part of their annual income to help cover expenses. Was this an unusual occurrence?

Gerbode: I think I was the only one that did it. [both laugh] We got a lot of publicity from it, but I don't think the cardiologists contributed anything.

Hughes: Was this something that was done elsewhere?

Gerbode: No.

Hughes: Why didn't you raise surgical fees to make ends meet?

Gerbode: Well, I think it's best not to have your fees any more than the going rate.

Hughes: Even when you're doing experimental--

Gerbode: Pioneering work?

Hughes: Yes.

Gerbode: There were several cardiovascular surgeons in the state who considered their work pioneering and so they tripled their fees. But in the end, we haven't heard very much of them.

Hughes: Was there some restraint from the Crippled Children's Service as well?

Gerbode: Crippled Children would only pay the set rate. The insurance companies paid more than the set rate but only about 80 or 90 percent of the fee you charged. But we had set fees and we stuck to them.

Hughes: How were they established?

Gerbode: The fees were established by the California Medical Association Committee on Fees. They had a schedule in which I participated in forming. It was adopted by many states, particularly other western states.

Hughes: Do you remember the criteria you used to establish the fees?

Gerbode: The criteria we used were difficulty of the operation and whether it was unusual or not.

Hughes: Was time a factor as well?

Gerbode: No. We called it a relative value scale and it's still used, I think, by a lot of organizations. Insurance companies adopted it.

Hughes: Fees, if left to their own devices, would vary quite a bit from metropolitan to rural areas. When you were establishing these fees, were you more or less taking what you supposed to be the average?

Gerbode: Yes. We established a fee which we thought was average in the area in which we were working, in this case, California.

Hughes: How did surgeons respond to the fee schedule?

Gerbode: Well, they responded pretty well and, I think, used it generally, but there were always a few surgeons who would use it as a spring board for increasing their fees.

Hughes: Was there any control over that?

Gerbode: The insurance company wouldn't always pay this larger fee.

Hughes: Does the fact that you were asking members of your team to make donations mean that there were quite a few expenses that were not covered by NIH or some other grant?

Gerbode: Well, we always had to buy instruments or new equipment for the intensive care unit or something new for the heart-lung machine. There wasn't any budget for [those items]. The hospital didn't pay for anything, so you either had to buy it yourself or get together to buy it. Our intensive care unit originally was paid for out of research grants and IBM and personal contributions. Later on when the unit got to be active and established, the hospital began to pay for replacements.

Hughes: When do you think that was?

Gerbode: I think they replaced some of the electronics just five years ago.

Hughes: Is this true of how other units operate?

Gerbode: No, I think most units submit a budget to the hospital and wait for the hospital to pay.

Hughes: Why was Presbyterian so recalcitrant?

Gerbode: Because we were a very poor hospital at that time. There wasn't any money around. We were in the old hospital and we were really struggling.

Hughes: You're speaking of the years just after the break from Stanford in 1959?

Gerbode: Yes.

A Letter from John Kinmouth, September 1960

Hughes: Another letter from Kinmouth. This one's dated September 1960. Another quote: "I was most grateful for your letter which arrived yesterday morning just in time to give me some hopeful technical tips about an acquired aortic stenosis and incompetence which we were doing that day. Your maneuver of supporting the left ventricle manually to prevent it distending after coming off perfusion is a very good idea. The patient which we did turned out to have a valve which it was possible to sculpture back into something that was almost like normal, certainly functionally. She was a young woman and the enormously thickened valve had not become calcified. I spent forty minutes on it with two periods of five to ten minutes perfusion of the coronary arteries. Whether this is really necessary or not it is difficult to say. But the heart started to beat again during the perfusion of the coronaries. I think it was quite definitely a useful maneuver just before taking off the aortic cross-clamp. We also used the cold saline in the pericardium as you suggested. We have got some more of these acquired aortic valve lesions to do. I'm sure a lot of them are going to be very much more difficult and I wish we could get a good artificial valve. I hope you and Bramson are getting on well with your plans."

What was the rationale for perfusing the coronary arteries?

Gerbode: Well, to keep the muscle alive!

Hughes: That's basic. [interviewer laughs] What artificial valves would have been available--

Gerbode: Well, we were working on an artificial valve at the time, made out of polyethylene. I used it in a few cases, but it actually fell apart after two or three years, so I stopped using it. It was functionally like a normal valve.

[interruption]

Hughes: It's interesting how these things are very much tied in with technological progress, aren't they?

Gerbode: Oh yes. If it hadn't been for the plastic industry in the United States, we'd be far behind. We have developed the best plastic industry in the whole world: tubing for the instruments, tubing for the heart-lung machines, the best material for a membrane oxygenator and for artificial prostheses. We led the world in this.

Hughes: Why the United States?

Gerbode: Because we had the engineering know-how to do it and also industry realized that if they could do it well, they could make money. They made fortunes out of it.

Hughes: You were obviously working on an aortic valve, from the tone of that letter. Was that the one that turned out to be not very successful?

Gerbode: Yes.

Hughes: What was the problem with aortic valves at that time? Was it the material they were made from?

Gerbode: Yes, the material we made the valve out of looked as though it would last forever and it functioned perfectly. But it cracked after a while and then became incompetent.

Hughes: You didn't know that from animal studies?

Gerbode: No, we couldn't tell until we tried it.

Fritz Linder and the University of Heidelberg

Hughes: There's a thick folder of correspondence with Fritz Linder, a cardiovascular surgeon at the University of Heidelberg. Did you have a part in getting his cardiovascular team going?

Gerbode: I was invited to the [Free] University in West Berlin [in 1960]. We didn't do any open heart surgery there, but we did other closed heart surgery procedures. But when I went to Heidelberg [in 1964], they were just beginning to experiment with a heart-lung machine, and so I did a few cases with them and criticized some of the things they were doing. I think they changed some of the methodology afterwards. I helped them also with their postoperative care because they didn't really appreciate the value of a volume respirator postoperatively. They had one, but the anesthesiologist wasn't using it. He didn't really realize it was there. So we took it out of storage and began to use it and they liked it finally.

Hughes: How could he have overlooked it?

Gerbode: Very easily. The fashion was to use a pressure respirator and unless you are curious and begin to think about it a bit, you wouldn't use the volume respirator. But the Swedes had demonstrated several years before that it was much the best. So you'd have to know what had been going on in Sweden and then take it seriously.

Hughes: That was the Engstrom respirator?

Gerbode: Yes.

Hughes: Did it take much know-how?

Gerbode: Not particularly. You had to take a little time, sit down and figure out how to work it, but any good anesthesiologist could do that.

Hughes: Did the team at Heidelberg ever use one of the oxygenators that you were developing?

Gerbode: No.

Hughes: Did European surgical teams tend to buy European products?

Gerbode: No, actually I think they bought American products, except the people in Sweden and Denmark. They were quite advanced in heart-lung machines and they bought their own. They were quite good.

A Contract to Retrain Female Physicians

Hughes: In 1966, you and Dr. Selzer had a contract to retrain female physicians. How did that contract evolve?

Gerbode: Female physicians?

Hughes: Yes, I saw a reference in a letter. You don't remember?

Gerbode: I guess I did if I had a contract.

Hughes: It didn't say with whom. I don't know more about it than that.

A Contract to Develop a Computer System to Identify Vacant Hospital Beds

Hughes: In 1967 the Public Health Service contracted with the Institutes of Medical Sciences to develop and test a computer system designed to identify vacant hospital beds. Do you remember this? The idea was to identify the beds in the community and to predict their future availability.

Gerbode: I guess we did that too. I guess it was a statistical analysis which we all participated in.

Hughes: Well, I believe that it was tested first at Presbyterian and I was wondering if it spread elsewhere.

Gerbode: I can't remember.

Hughes: This was an offshoot of the computerized monitoring of patients?

Gerbode: Yes.

Hughes: Perhaps it was something that IBM was--

Gerbode: I don't think IBM helped in that.

A Grant for a Training Program in Cardiovascular Surgery

Hughes: In June 1968, the National Advisory Heart Council made a site visit to review your application for a training program in cardiovascular surgery. One of the reviewers reported--this was in a letter from Langley, who was connected with the Heart Research Institute?

Gerbode: Lee Langley, yes.

Hughes: He quoted one of the reviewers in the following words: "The program director [Dr. Gerbode] is renowned. The facilities are almost luxurious. There's affluent support for research. There is really a most inadequate training program that is not attracting U.S. surgeons." Why was the training program considered inadequate?

Gerbode: Because we had no residency program at that time and so we didn't have a source of American doctors. That's why I brought over European surgeons who were very adequate and very intelligent and

Gerbode: very well-trained. [The National Advisory Heart Council] accepted my application. The three surgeons [who were supported each year as fellows] went on for about six or seven years, I guess.

More on the Possibility of a Medical School at Presbyterian Medical Center

Hughes: In 1968 you were interested in establishing a medical school at Presbyterian Medical Center. You argued that the Bay Area needed another medical school, that the location of Presbyterian was ideal and that much of the old staff of Stanford Medical School was still on the staff of Presbyterian Hospital and willing to teach. You also mentioned that the new hospital was in the process of being built and that there was a dental school and also a research institute in the complex. Why, with all these advantages, wasn't a medical school established?

Gerbode: I got the president of the University of the Pacific interested. He at this time or just before had established the McGeorge School of Law in Sacramento with very little money. With my encouragement, I think he thought, we might be able to do it in medicine. We got a grant to study a new curriculum for a medical school and Bruce Spivey, who is now the president of the [Pacific Medical] Center, was in charge of developing a curriculum for a new type of medical school, and he developed a very good one. But as time went on, everybody began to realize that we had more doctors in California than we needed. We also realized that to start this school, it would have cost a good deal more money than we could picture. The federal government also at that time decided not to put any more money into new medical schools. The state did too, so without any federal or state support, it would be impossible to do it.

Hughes: That was quite a turnabout.

Gerbode: Well, actually there wasn't a great groundswell for a new medical school. There were a few starry-eyed people around who wanted to do it. There were various surveys that occurred at that time, too, or just before this, which said that the Bay Area really could tolerate another medical school other than the University of California, since there were many teaching places and many people could serve as faculty and there was also a long tradition [of medical education] in San Francisco. So this all died down, because of lack of money, and the fact that they began to show statistically that we already had enough doctors in California.

Hughes: That part of it is a bit strange, because I read something written that same year, 1968, saying that it was felt that three thousand more medical graduates were needed every year.

Gerbode: Well, it was made up very quickly by another thing that happened. We imported doctors from all over the United States and some people figured out that Harvard and Columbia and all these other medical schools were turning out doctors for us in California and so it didn't cost us [Californians] all those educational fees. They were turning out doctors [elsewhere] and all they had to do was come out and pass the [California State Medical Board] examination and get to work. So we had a great many, and still do have a great many, doctors whose education was paid for by other universities, who then moved to California. Furthermore, we had a great influx of foreign doctors around that time who came in before the laws were strict and took internships or something in a hospital, then stayed on and practiced.

Hughes: So that made up the deficit.

Gerbode: Yes.

Arthur Selzer, Ian Carr and Pediatric Cardiology

Hughes: A letter from Arthur Selzer who was a cardiologist at Presbyterian. The letter was written to Ian Carr, a pediatric cardiologist. He was writing about setting up a pediatric cardiology section in the cardiology unit. Do you remember any of this?

Gerbode: Yes, of course.

Hughes: Selzer promises Carr full use of the cath[eterization] lab, the initial use of his cardiology trainees, and flexible scheduling of cases by the unit and the section. He promises all pediatric cardiology cases to Carr. Did the unit and the section actually end up working harmoniously in this way?

Gerbode: Yes, Ian Carr came out and there was a little problem with Bob Popper, who was the existing pediatric cardiologist. But they worked that out so that they shared the work between them. Ian Carr tried to have cardiology conferences in various centers around northern California where we had already established contact. But

Gerbode: for some reason it never worked out too well. He was an extremely competent, intelligent pediatric cardiologist, but maybe the fact that he was English was against him. Doctors are funny.

Hughes: He was considered a foreigner?

Gerbode: Yes. Maybe his way of talking wasn't exactly western enough. He wasn't getting anywhere, so after a number of years he got an offer to be a cardiologist with a Chico medical group. He was up there for a few years and did excellent work, but I think he wasn't accepted by the Chico doctors, maybe for the same reason: he spoke English rather than western American.

Hughes: Then he went to Chicago.

Gerbode: The Cook County Hospital was where he was first. There you have a built-in practice in a unit paid for by the city and there's no private competition.

A Letter to Hans Borst, September 1971

Hughes: A question about computerized monitoring. In September, 1971, you wrote to your friend, Hans Borst, that you were not interested in automated computerized treatment programs. Why?

Gerbode: Well, this is what is called closing the loop.

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Gerbode: For example, Franny Moore in Boston and also John Kirklin [had computer programs where,] if you measured certain parameters, put them in the computer, the computer would then automatically give a transfusion or give fluid or whatever without the nurse telling it what to do. This was not my idea of how to use a computer. I thought, and also Jack Osborn felt, that closing the loop, so to speak, was not the way to do it. Our idea was to furnish the nurses and the doctors with very accurate information [from the computer] and have them make the decisions about whether to give medication or transfusions or whatnot. Certainly, we could have closed the loop, but you'd have the same number of people sitting there watching to see that the loop was being closed properly, and so you might as well have that person making the decisions on how to use the information. I liken this whole business to flying an airplane with the use of instruments rather than the seat of your pants.

Hughes: What did other hospitals do?

Gerbode: They finally didn't close the loop very much. They wrote a few papers and then they quit.

Hughes: What you said in this letter is pretty much what you just said: Your interests were in obtaining accurate physiological data on seriously ill patients and correlating these data to establish relationships (which I guess would take a human being).

Gerbode: Yes.

Operating Room Donors at the New Presbyterian Hospital

Hughes: In January 1974, you were still trying to raise funds for operating rooms in the new Presbyterian Hospital. Six operating rooms had already been donated by people such as Kresge.

Gerbode: You know, Kresge stores?

Hughes: Yes, Waterhouse, Taylor, Merrill and so on. Who arranged these donations?

Gerbode: Waterhouse is our family. I had one room named after an aunt, [Martha A.] Waterhouse, and I got the family to contribute money enough to honor her. Then Taylor was the wife of a patient I had operated on. He died some time later of something else and she inherited an awful lot of money from his estate. So I asked her to give an operating room and part of a viewing room to the hospital, which she did.

Hughes: You would write a letter to these people?

Gerbode: I talked to them about it. Mrs. Taylor finally died of a wasting disease, which was very unfortunate. So all the money she inherited from Mr. Taylor went to her children, not by him however.

Hughes: The Gerbode family gave \$75,000 for an amphitheater and viewing room. Do you remember who else gave money?

Gerbode: We all participated in it. We just passed the hat around.

Hughes: Who was Dr. Truman Brophy?

- Gerbode: Truman Brophy was a resident surgeon following me on the old Stanford service in 1936 or '37. He always remained a good friend of mine. He had a congenital abnormality of the colon and had several operations which were not very successful, so he retired from surgery and moved to Mexico.
- Hughes: He also gave money for these operating rooms.
- Gerbode: I don't know. Did he give some money?
- Hughes: I think so. It was mentioned in that same letter.
- Gerbode: Yes, I always hoped he would give us more than he did. [both laugh]

A Letter from Hans Borst, January 1955

- Hughes: A letter from Hans Borst in January 1955 mentions that you were already having trouble with Stanford four years before the actual break came. Do you remember what exactly was going on as early as 1955?
- Gerbode: Actually, Stanford was very naughty about this whole business. They really wanted to have the hospital pulled up completely. They wanted us to bury it and forget about it.
- Hughes: They were already planning their hospital in Palo Alto?
- Gerbode: Yes, sure they were and--I think I mentioned this before--they wanted to close the out-patient clinic [in San Francisco].

Grants to Establish Cardiovascular Centers

- Hughes: In 1966 you wrote of applying for a grant for a specialized cardiovascular center. What exactly was the center?
- Gerbode: Well, I think this was a big NIH grant which I had applied for. They were establishing centers--NIH-supported centers--where training, teaching and research would go on, all supported in a center of excellence and paid partially by the government. I got one and it went on for about ten years.

Hughes: So the committee making the decision would be looking at these three areas to see how strong the institution was?

Gerbode: Yes.

Hughes: Do you remember which other cardiovascular centers were funded at that time?

Gerbode: I think they had about ten in the country. Mike DeBakey always had one.

Hughes: There was probably some attempt to spread them out geographically.

Gerbode: Yes, that's right.

Heart Clinics in Alaska

[Interview 19: July 17, 1984]##

Hughes: You began to hold heart clinics once a year in Alaska beginning in 1958. How did this come about?

Gerbode: Well, we found ourselves operating upon virtually all the congenital heart cases on the Pacific Coast including Oregon and northern California and Nevada. Then the group in Alaska realized they had a lot of congenital heart cases up there among the Indians and Eskimos. So they began to send them down to us and these were all paid for by the California State Crippled Children Services which was then reimbursed by the Alaska Crippled Children Services. This went on for a couple of years and these children would arrive with their mother and a nurse and sometimes other members of the family. They had to be housed and taken care of in San Francisco while the children were being studied and operated upon. Expenses included airfare for everybody.

After a while, I totalled it all up and it was kind of ridiculous to spend all this money to bring a child all the way down from Alaska. So I proposed to the Alaska Crippled Children's Services, instead of bringing them all down, that I would bring a group to Anchorage, Alaska to study the children and find out which ones would require an operation and which ones would require study. The trip was sponsored by the Alaska Heart Association and the Alaska State Crippled Children's Services.

Gerbode: I had the opportunity to choose the people to go up there. In the group was Herb Abrams, a roentgenologist, who is now professor of roentgenology at Harvard, Herb Hultgren, who is now with Stanford Veteran's Hospital doing cardiology, Saul Robinson, who is a pediatric cardiologist, and myself.

So we went up there and were housed in the old hotel in Anchorage. They brought all these children and Eskimos and virtually everybody who had heart problems in Alaska into the public health hospital in Anchorage where they had it set up so we could see patients rather quickly and make a decision about whether they needed an operation or whatever. We saw an average of over two hundred patients over a two day period and decided that some of them really needed an operation soon, some were not operable, and some needed study. Then the question was where to send them, and the obvious place would have been to send them to Seattle but they weren't quite ready to take these cases in Seattle at that time. So we brought some of them down to me in San Francisco later, but after a while the California Crippled Children Services decided they did not want to process these children any longer which meant that they wouldn't handle the paperwork connected with bringing them down here. So that left the Alaska Crippled Children's Service in rather a bad situation.

There was one man up there who had very good connections with the Mayo Clinic and he simply arranged to have them all sent to the Mayo Clinic. The Mayo Clinic said they would process the Crippled Children's paperwork. So that ended that. However, we went up there three years in a row and we not only had clinics in Anchorage, we had a clinic in Fairbanks and one in Sitka. I can't say too much about the public health nurses in that whole area because they would go up, sometimes with dogs, and get these babies and small children out of huts and igloos and bring them down to the clinic. They were very strong, husky women, very dedicated and they did a terrific job. We not only saw all the Crippled Children's patients, but we saw a lot of adults, too, who thought they had heart problems, and some of them did. So doctors' wives and everybody came to our clinic. We didn't charge anybody anything. It was a free clinic.

Hughes: Why did Crippled Children's Services decide to get out of it?

Gerbode: They got out of it because they didn't want to go through the hassle of processing the paperwork. It was rather a blow to the whole program. I guess they were also worried about the expense of bringing them down.

Gerbode: But quite apart from that, everybody was extremely kind to us up there. The local doctors organized expeditions in the late afternoon and on the weekend to fish or take a look around. I became quite an expert fisherman in that part of the world. On one expedition we caught so many large trout and grayling, I couldn't carry them. I had a sash cord along and I simply rafted them down the river after me. We couldn't leave the fish on the shore because the animals would come and eat them.

Hughes: Then you froze them?

Gerbode: We brought them into Anchorage and they froze them and flew them down later to us here in San Francisco.

We saw lots of wild animals when we were there. There was one stream that we went back to twice, and the second time around, the same moose was there with his family nearby, looking at us. The bear tracks were apparent all around us but we didn't see any of the bears. At other times we had to chase bears away from the stream. We simply flew the airplane up and down until the bears ran away. The same eagle's nest was in the trees high above the second and third time around. It was absolutely gorgeous country. I can tell you it's the most beautiful part of America that I've ever seen. People go to Switzerland to see the Mer de Glas. They think it's great to see this glacier there, but you can see one of those every fifteen miles in certain parts of Alaska.

Hughes: Were the types of surgical problems similar to what you were seeing in the Bay Area?

Gerbode: Yes, they were all the same. There were tetralogies and patent ductus and mitral and aortic valve problems. We were able, I guess because we had such a knowledgeable crew, to make a good clinical diagnosis in almost every case.

Hughes: What was the training of the Alaskan physicians?

Gerbode: There were one or two cardiologists up there, but they hadn't had the experience of looking at a lot of possibly operable heart cases. So we were able to help them quite a good deal.

Hughes: Did they have all the modern techniques?

Gerbode: They had no catheterization laboratory. They talked about having one and I think later they did have one. They had xrays and that's about all. They had no angiocardiology to make a diagnosis. I'll tell you, it was a very worthwhile experience.

Hughes: I believe you did some teaching in connection with these clinics.

Gerbode: We had lectures in addition to seeing [patients in] the clinic. We usually were in the clinic most of the morning, and then in the afternoon and sometimes at night, we'd give lectures.

Hughes: To people who were connected with the hospital?

Gerbode: Yes, all the local doctors including the public health doctors.

Hughes: Did Seattle eventually get--

Gerbode: No, Seattle never really got up to the level required to take these patients. Maybe a few of them filtered down there, but most of them went to the Mayo Clinic.

Hughes: The very early sixties, it shifted to the Mayo?

Gerbode: Yes.

Hughes: When Alaskan patients were mainly coming to Stanford, was that a boon in a way? Did you need heart cases?

Gerbode: We didn't need them, but we could take care of them. We had enough space to manage the number of cases they sent. It was very interesting to see these children come down from igloos and little villages way up near the Arctic Circle to a big city with their nurse or with their mother. We organized a little tour group for activities. They were taken to the zoo, Golden Gate Park, Fisherman's Wharf and so forth. After one of these expeditions, about four o'clock in the afternoon, they said to a little girl, "What would you like to see next?" She said, "I want to go back to the hospital." [both laugh] The food was good and she was safe there.

Hughes: It sounds as though the local physicians were very pleased to have you there.

Gerbode: They were very pleased to have us and we didn't interfere with their practice. We told most of them what we thought should be done and we left it up to them to do something about it or not. In some instances, I think they simply didn't do anything with the patients. They took care of them medically, and that was it.

Hughes: Postoperatively, the patient would be turned back to the referring doctor?

Gerbode: If they came down here, we'd always send them back to the referring doctor.

Hughes: And that worked.

Gerbode: It worked very well.

Surgical Films

Hughes: There was a reference in these papers I was going through to a film called, "Transverse ventriculotomy for tetralogy of Fallot," which you showed, I believe, in connection with one of these clinics.

Gerbode: Well, this was some experimental work that Keith Cohen and I did in the laboratory. To view a stenotic lesion or a hole in the heart, you have a choice of either making an incision in the right ventricle either vertically or transversely, or trying to see the abnormal condition through the atrium. The atrium is not satisfactory except in very specialized cases. So we did some experiments which showed that a vertical ventriculotomy in the right ventricle cut through coronary arteries and also weakened the right ventricle so it didn't contract as well as it would if we made a transverse incision parallel to the blood supply to the right ventricle. I think this led a lot of people to use the transverse incision in the right ventricle. Some people haven't ever used it, but that's characteristic of heart surgeons. They decide what they want to do, regardless, sometimes. [both laugh]

Hughes: Do you remember when that was?

Gerbode: It was in the early sixties.

Hughes: Was it your practice to make films?

Gerbode: I made a lot of films. I still have a lot of films and nobody looks at them anymore of course.

Hughes: Were these prepared for meetings?

Gerbode: Meetings and local lectures. They were very expensive to make too. Historically, I think they'd be quite interesting to somebody.

Hughes: How many do you suppose there are?

Gerbode: Oh, I guess there are about five very good ones.

Malpractice

Hughes: Would you like to move on to malpractice?

Gerbode: Well, that's a very disagreeable subject, but I guess we ought to talk about it.

Hughes: I have some fairly innocuous questions to start out with.

You had quite a large folder on malpractice and I found a pamphlet which is called, "Malpractice and the Physician," which was printed in 1951 by the Committee on Medico-legal Problems of the AMA. It was later also published in the Journal of the American Medical Association. I gather that the report was made in response to a striking rise in malpractice claims. I remind you, this is 1951, long before I thought malpractice was a real problem. It characterizes malpractice as "a contagious disease of the social body." The report stressed the importance of a good doctor-patient relationship in avoiding malpractice claims. Did any of your education, either as a medical student or later, prepare you for malpractice?

Gerbode: As far as I know it was never mentioned either in medical school or in my postdoctoral training. It increased remarkably a little bit later than 1951 because of the contingency fee. We, in this country, allow a contingency fee to the lawyers, something which is illegal in England and Canada. The contingency fee means that the lawyer agrees to take for himself 40 or 50 percent of whatever the award is, which is a tremendous opportunity for him to get wealthy in a hurry.

Hughes: Now, this isn't just in the field of medicine is it?

Gerbode: It was medicine to begin with. Now a strange thing is happening and the lawyers are suing each other. Also, they're suing a lot for devices. For example, if a valve fails, they'll sue for a million dollars or if some other instrument didn't work the way it was supposed to, they'll sue about that.

Hughes: They sue the instrument maker?

Gerbode: Yes, sometimes the doctor too for having used it. And they also are suing the doctor for a lot of other things which they never thought of before. For example, if you don't tell the patient all the possible complications of a serious nature that might occur with an operation, if that complication arises and you didn't tell him about it and make a record of it, he will sue you saying well, I didn't know it was so risky; I didn't know that was a possibility. One of the local heart surgeons in San Francisco was sued for a million dollars and lost the suit because he didn't mention that paralysis might occur with a certain kind of operation.

Hughes: This AMA committee report went on to make the point that the majority of all malpractice claims are found in "unwise comments or criticisms of physicians with regard to treatment given to patients by other physicians."

Gerbode: That's right. It's a very dangerous thing for a patient to be told by another physician that the first physician really didn't know what he was doing or made a mistake. That's an open invitation to sue the first physician.

Hughes: Did you ever have any problem along those lines?

Gerbode: I didn't have anything happen that way as far as I know, but I've been sued three times. No surgeon who's doing a lot of serious work, either cardiac or otherwise, escapes being sued. No one's ever won an award against me.

The Salgo Case, 1957

Gerbode: The first case, which was the famous Salgo case,* we lost in the first round and the award was for \$212,000, as I recall. The malpractice attorney, Fitzgerald Ames, was walking around the town hardly believing that he'd won \$212,000. Of course, these days, that's nothing. But this was the first time he'd ever won a big case, so he was completely mesmerized by this amount of money because he of course was going to get 40 percent of it. However, the appellate court reversed that decision and threw the case out completely.

*Salgo v. Leland Stanford, Jr., University Board of Trustees. The term 'informed consent' was used for the first time in this case.

Hughes: If you don't mind, why don't you backtrack because that's a very interesting case which was published verbatim in the Journal of the American Medical Association.

Gerbode: Yes, it was an historic case because it involved the activities of a resident in a hospital following orders requested by a staff member. Well, this patient came to me with very serious peripheral vascular disease to find out whether he would benefit by an operation. We did a test which is called an aortogram. It entails putting a needle in through the back--now we can put it through a tube up an artery--and injecting dye to show the extent of the circulation. I requested the test be done by the xray department and the actual test was conducted by the xray department and by a resident.

Hughes: Was that common practice?

Gerbode: Yes, it was common practice. The resident may have been a fellow at that time; he was certainly an advanced resident or a fellow. He performed the test perfectly as far as we could find out. But Salgo, the patient, developed a paralysis afterwards. So the assumption was that the needle was put in the wrong place; the dye was injected next to the spinal cord which caused the paralysis. Well, we had many people look at the films and decided that the needle was in the right place; the dye was injected in the aorta and not around the spinal cord. However, the malpractice lawyer made a great thing of this and assumed that the physicians were all in collusion. Even the judge, whom I met in the hall during the case, remarked to me, "I kept thinking about my daughter getting a spinal anesthetic for [having a] baby and what might have happened to her," which shows you how much brains this fellow had. Actually, this judge was a political appointee, a kind of a payoff for some good he did to somebody else, and he was a very stupid man which was pointed out by the appellate court later.

In any event, Salgo remained paralyzed and his family tried to get tons of money out of everybody. When the case was finally thrown out, I think I offered to help him financially, but I was advised not to do this while the case was still pending because it would be an admission of guilt.

Hughes: Your lawyer advised you not to?

Gerbode: Yes.

Hughes: There was another aspect to the case too, I believe. The suit made three charges. The first was that you should have performed the aortogram yourself, and you answered that by saying that it was common practice for a trained resident to do the aortogram.

Gerbode: Yes, that was accepted practice.

Hughes: Another charge was that the manufacturer's recommended dosage of the contrast fluid, which was urokan, was exceeded.

Gerbode: I don't believe that's true. I think he gave the regular standard dose which we had been using [previously].

The other thing that was an issue was res ipsa loquitur, the fact speaks for itself. In other words, the fact that something unusual happened meant that something unusual was done, and the fact that it happened meant that there was guilt somewhere.

Hughes: There was negligence.

Gerbode: So that was one issue and this was something that was beginning to become a very big issue in the medico-legal aspect of California. When this case was reversed, the whole issue of res ipsa loquitur was pushed back quite a good deal. It has gradually crept in again since then.

The other issue was if a doctor ordered a test which was done by a resident, was he responsible for it if something bad happened. This, of course, affects the whole residency program everywhere in the United States. The custom is that residents and fellows do these diagnostic tests all the time. It's the only way you can run a big service. This is where the University of California came into the picture because they realized the implications [of the case for] residency training. So they were very much on our side and put up money to support my case.

Hughes: How did it stand after the case? People that aren't very well trained have to be supervised, do they not?

Gerbode: They have to be supervised. The issue is not quite closed yet. It's certainly possible legally now for a physician to ask a resident or a fellow to do a test and if something very bad happens, then the whole issue is of course raised. But the fact that something happened just because it was a resident or a fellow doesn't mean that there's guilt associated with it.

Hughes: You wouldn't have a house officer doing an aortogram would you?

Gerbode: Yes, we certainly would.

Hughes: How are those things worked out?

Gerbode: You see, every physician on a staff knows the ability of a houseman. If he thinks the houseman is capable and has the ability to do something, it's very possible he'll ask him to do it.

Hughes: In a court of law that would stand up if you could prove that the man did have the ability?

Gerbode: Yes. I was having dinner in an Italian restaurant and Fitzgerald Ames, the lawyer, was running for judgeship in San Francisco. He came through the restaurant asking people to vote for him, passing out cards. He came up to me and I gave him a glassy stare and he quickly turned in the opposite direction. [both laugh]

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Hughes: The third charge was that you had failed to warn the patient of the risk of the procedure, namely, the aortogram.

Gerbode: Well, this particular complication in doing the aortogram was so extremely rare it never occurred to me that it would even happen. What probably happened was that some of the dye got into the collateral circulation to the [spinal] cord and, because he had such terrible arteriosclerosis, produced a thrombosis in one or two arteries that were supplying the cord. Well, I've never seen this accident since then; I never saw it before, and never read about it. So it wasn't anything I would have warned somebody against.

Hughes: Why was the case originally decided against you? Was it because the judge applied this doctrine of res ipsa loquitur?

Gerbode: That's one reason. The other reason was that they just didn't believe all the expert testimony. They just assumed that because something bad happened that somebody did something wrong.

Hughes: Why did the California District Court of Appeals reverse the decision?

Gerbode: They said that no one had proved that we had done anything wrong.

Hughes: You appealed it.

Gerbode: Actually the law office appealed it.

Hughes: Then the California Supreme Court made the decision final by refusing to review the decision of the appellate court.

Gerbode: Yes.

Hughes: The prosecuting lawyer had referred it to the supreme court?

Gerbode: So it was thrown out.

Hughes: What was the reaction of the medical profession to this case?

Gerbode: Oh, they were scared about the [original] decision because that meant that if a house officer, a resident or a fellow did anything that was ordered by a physician, and if any little thing went wrong, that the doctor and the hospital would be sued.

Hughes: Was the medical profession aware that this trial was going on, or was it only afterwards when it was published?

Gerbode: No, they were aware of it going on. Very much so.

Hughes: What about the legal profession?

Gerbode: Oh, I think they were watching it because of the doctrine of res ipsa loquitur which they wanted to promote as much as they could because it meant more business for them.

Hughes: Just to summarize, the questions that were raised in this case were, of course, the doctrine of res ipsa loquitur and the responsibility of the senior man for the man not quite so senior. Then also there was the question, are you necessarily experimenting whenever you exceed the manufacturer's suggested dosage? Was that actually an issue in the Salgo case?

Gerbode: I don't remember it being an issue, but the way you'd solve that would be to find out what the custom was in other places where they were doing angiograms or in our own place.

Hughes: Were there any hospital or medical procedures that you changed as a result of the case?

Gerbode: No, we continued to do everything about the same way.

Consent Forms

Hughes: The consent forms--?

Gerbode: In more recent times, however, all these consent forms came into being. We had to be very careful to explain everything to the patient or his relatives beforehand and to make a note of it in a chart.

Hughes: You mean after this case.

Gerbode: It wasn't until a number of years later that this came into being, not so much because of my case, although I guess it had something to do with it, but because of other cases where something unfortunate happened and the doctor hadn't warned [the patient and his family] about this being a possibility. There was one such case here in San Francisco where a surgeon did not tell the family that paralysis might occur in correcting a coarctation of the aorta and he was sued for a million dollars and lost.

Hughes: There is an article in this same folder by a surgeon by the name of Adelstein--it's called, "What Price Malpractice Insurance." He actually included some consent forms which are very, very specific; the particular operation is designated and the possible risks resulting from that operation. Were your consent forms this detailed?

Gerbode: I don't think we had consent forms when I was sued on this Salgo case. I think all we did was sit down with the family and describe what we were going to do and why the test was necessary. But later on consent forms became very much a matter of practice and were required. We either had to have a consent form or make it quite clear in the record that you had explained everything to the patient or his relatives about what might happen.

Hughes: And you did do that even before you had the consent forms?

Gerbode: I did it, but I didn't have anything signed or anything written down about it.

Hughes: This is fairly early, this sample consent sheet. It was published in the Los Angeles County Medical Association Bulletin in 1957.

I came across a letter from W.G. Bigelow who is a prominent cardiovascular surgeon in Toronto. He wrote to you in February 1960 with some legal questions relating directly, I think, to the Salgo case although he doesn't say so. "You will recall our discussion

Hughes: regarding the unfortunate legal problem you had as a result of an aortogram and at that time you told me the key to the trial was whether or not this man had the dangers of the investigative procedure explained to him. Following my discussion with you, we had a special consent form drawn up in which the patient signs to the effect that he has had the dangers explained to him." That was fairly early; that was February 1960.

Then Bigelow goes on to say: "Have you any general observations on the matter of legal responsibility in some of the more complicated cardiovascular investigative procedures such as left heart catheterization, aortograms, etc.?" Can you reconstruct what you would have answered?

Gerbode: Didn't I write him?

Hughes: It wasn't in the folder with this letter.

Then he asks: "Do you think the courts are likely to hold the surgeon responsible if he delegates this to a responsible senior resident, for example, who has the status of a staff man who does not legally require supervision? Or is this the responsibility of the hospital who employs him?" All that had been fairly definitely answered by the reversal of the Salgo case, hadn't it?

Gerbode: Yes. Another thing we incorporated in the consent form later was a statement that I had explained to the patient that I might assign parts or all of the procedure to somebody else. As a matter of fact, according to the consent form, I could turn the whole case over to somebody else. If something bad happened, they'd have to show that the fellow was totally incompetent.

The Captain of the Ship Doctrine

Hughes: Bigelow's last question is: "Do you think that in an open heart procedure the authority must be delegated to the anesthetist as one group and the individual running the pump as another to such a degree that they should be held responsible? Or do you think that the ultimate responsibility for all these individuals is the surgeon's?"

Gerbode: I don't recall patients having sued the men running the pump unless some obvious thing happened to the extracorporeal circulation, like bubbles getting into the circulation. Anesthesiologists are frequently sued.

Hughes: Even back then?

Gerbode: Yes. Even now, I think anesthesiologists get charged more for malpractice insurance than [other types of medical specialists].

Hughes: When did that change come, because in the very early days the surgeon was responsible for the actions of the anesthesiologist.

Gerbode: Yes. Now they usually sue everybody, but it may start with the anesthesiologist.

Hughes: Do you remember having talks with your heart team about malpractice?

Gerbode: Oh yes, we discussed these cases and discussed the rising incidence of malpractice cases all over the country, much more in California and New York than anywhere else. We became known in California as being a malpractice prone state, and some doctors just wouldn't practice here for that reason.

Hughes: Why California and New York?

Gerbode: Well, there's so many kookie people in California. [both laugh] So our medical insurance was more expensive here than it was in, say, Nevada or Arizona.

Hughes: It used to be that the so-called captain of the ship doctrine applied to surgical practice. The surgeon was responsible for all those assisting him until he left the operating room. This doctrine has changed recently because of the increasing specialization of the operating team. Courts now require that a definite relationship exist between the surgeon and others before the captain of the ship doctrine can be applied. Do any of these changes affect the surgeon's responsibility in terms of the actions of the cardiovascular team?

Gerbode: No, I think people are still inclined to hold the surgeon responsible for anything bad that's happened unless it's an obvious thing that was done by another member of the team, like failure to keep the heart-lung machine running or having the anesthesiologist give too much or not enough anesthetic or giving something intravenously which he shouldn't have given. These things happen once in a while. In any suit they usually sue everybody. They sue the doctor in charge of the operation, the anesthesiologist in that case, and the hospital. In a teaching institution they sue the university as well. It doesn't cost any more to sue for a billion dollars than it does for ten cents.

The University of California and the Salgo Case

Hughes: When was the Salgo case? Nineteen fifty-four, wasn't it? How did the University of California get involved?

Gerbode: I think somebody simply told the University of California that this was an extremely important case [having implications for] their residency programs.

Hughes: You said they put up money.

Gerbode: The regents put some money into the pool to help pay for legal defense for the case. They weren't part of the suit, but they were certainly part of the effort to win the suit.

Hughes: Who was your lawyer?

Gerbode: The lawyer was a fellow named Smith who was hired by Hazard and Company who are malpractice lawyers for the California Medical Association.

Expert Witnesses

Hughes: In the trial of most malpractice cases, the evidence of a doctor's negligence must be established by the testimony of another physician--the so-called 'expert witness'. Were there expert witnesses in your malpractice cases?

Gerbode: There are physicians who say they're expert witnesses. Of course, the jury doesn't know what an expert witness is supposed to know. They're so stupid. So there are physicians who can be hired by a malpractice lawyer to take any stance he asks them to take. They fly under false colors all the time.

Hughes: This is now-a-days?

Gerbode: Even now. The medical profession usually calls in very good expert witnesses. The juries always think that they're in collusion with the guy that's being sued, so it's a difficult thing to handle.

Hughes: In the Salgo case, was that your lawyer's responsibility to choose the expert witnesses?

Gerbode: Yes, he got good expert witnesses.

Hughes: Didn't he ask your advice?

Gerbode: Yes. We had conferences: What do you think about asking so-and-so to testify and I'd say yes or no.

Hughes: How does the expert witness decide whether there was negligence or not?

Gerbode: Well, what [the lawyers] would do is show all the material to the expert witness and then ask him if he'd like to testify. In other words, they get an opinion about what he thinks about the case before he's ever asked to testify.

Hughes: Do physicians like this role?

Gerbode: They don't like it, but they do it usually because they may be in the position next time [of being sued], so they might as well be a good boy and help.

Hughes: In October 1962, Charles Hufnagel, a prominent cardiovascular surgeon at Georgetown University Hospital wrote to ask you to be an expert witness in a malpractice suit in which Melvin Belli was the prosecutor. You replied that you were frequently out of town and hence it would be better to ask one of your associates. I think you referred him to [William] Kirth to be an expert witness. Was that the real reason or was it because you really didn't like being an expert witness?

Gerbode: I never have liked being an expert witness and I have been a few times. I can't remember what the problem was at that time. I do travel a lot and I may have wanted to go to an international meeting at that time. What was the year?

Hughes: October 1962.

Gerbode: I can't remember but I know that Bill Kirth did act as expert witness once in a while.

Pre- and Postoperative Consultations

- Hughes: Since you were in the vanguard of cardiovascular surgery, many of the operations you were performing were comparatively new. How did you walk the line in regard to giving the patient a full explanation of a new procedure and the risk of alarming him unnecessarily?
- Gerbode: I always took a lot of time to explain these things to the patient. Very often it was the family because there were so many children being operated upon. We'd have diagrams showing what the lesions was, and then I'd show them what I intended to do. If it was a new procedure, one that hadn't been done very often, I'd tell them so. But I also had one big advantage, and that was I knew the risk of the child retaining the abnormality. I knew what the life expectancy was. The expectation was that if I corrected it, they would have a normal life expectancy. So that's a pretty strong argument. I could tell them what the mortality rate was also. Sometimes I didn't know, but I could guess at it.
- Hughes: Medicine is not an exact science. When an operation or a procedure did go wrong, how did you handle the situation with respect to the patient and/or the family?
- Gerbode: Well, if we lost a patient in the operating room or immediately thereafter, I would simply say that I thought the reason was whatever I thought it was. I always had the family stay in the hospital during the operation. I always talked to them right after the operation and told them the prognosis, what we found, what we did, and what might happen.
- Hughes: Was there always an autopsy?
- Gerbode: I would always ask for an autopsy.
- Hughes: Was that usually granted?
- Gerbode: I would say it was granted more than half the time.
- Hughes: So you were trying to learn from your mistake, if there had been a mistake?
- Gerbode: Yes.

Malpractice Insurance in California

Hughes: You mentioned the high cost of malpractice insurance in California. Do you think there have been effects on the practice of medicine and surgery in this state other than keeping certain people away from practicing here?

Gerbode: Yes! I think it's increased the cost of medicine because the average physician or surgeon will order tests which would be otherwise unnecessary because he wants to be sure he'll be covered. He'll order more xrays and tests than often required. He does all these things to protect himself from the lawyers and from the patients who are litigiously-minded.

Hughes: Is there any solution other than eliminating the contingency fee?

Gerbode: That's the biggest thing. If we had no contingency fee, a great many lawyers just wouldn't take cases.

Hughes: Do you have anything more to say about malpractice?

Gerbode: No.

The California Medical Association and Medical Liability

Hughes: In 1971 the California Medical Association published a pamphlet called "Professional Liability." The list of commandments on how to avoid malpractice claims had grown to twenty-eight. The previous pamphlet put out in 1956 had listed twenty-three commandments. Some of the commandments, such as avoiding criticism of the work of other doctors and the need for keeping "ideal" medical records, were repeated in 1971. The report recommends that a physician sensing dissatisfaction in a patient or his family should always ask for a consultation. Such consultations, according to the pamphlet, afford great protection against a suit. You've already said that you put this into practice; you discussed the case fully with the patient.

One thing the report says: "All injections and medications should be given under the doctor's supervision." I was wondering, given the severity of many cardiovascular operations, was it always possible for you to supervise medications especially in emergency--

Gerbode: It certainly was not!

Hughes: Why would a booklet put out by the California Medical Association make such a blanket recommendation?

Gerbode: I don't know who wrote it. But it's impossible to have every intravenous injection, for example, supervised by a physician. Nurses do a lot of them.

Hughes: There's one of these fourteen so-called commandments which I'll read to you. "In a treatment of a patient, there must be no experimentation without the explicit and informed consent of the patient, and then only when there is sufficient reason to believe that such experimentation offers greater potential for benefit to the patient than currently acceptable modes of treatment."

In the late 1930s and later in the postwar years when you were establishing yourself as a surgeon, do you think the surgical team was ever tempted to perform operations that might not have been specifically to the good of the individual patient but had a good chance of advancing the whole field of cardiovascular surgery?

Gerbode: No, I don't think so. That's really saying that doctors would use the patient for experimental purposes, and I don't think we ever did that. We did operations which were certainly experimental, but we explained to the family that, let's say, this particular device had never been used before, that the background for using it was pretty good and what we thought the reasonable success rate might be.

XIII FURTHER COMMENTS ON EARLIER TOPICS

[Interview 20: October 3, 1984]##

Recent Problems at the Medical Research Institute

Hughes: Dr. Gerbode, several years ago, in the early 1980s, there was a political upset at MRI, the Medical Research Institute. Could you tell me about that?

Gerbode: We have two basic points of view which are more or less opposite to each other. One is that some of the people in the institute feel that we should have a strong scientific director. Another group feels that we don't need to have any strong scientific direction, that the institute directors and the scientists themselves can determine their direction. My view has been....[tape interference] I believe the better attitude would be to have somebody on standby to offer advice, counsel, when requested, and to keep an eye out for research people who would like to move into our group. Having decided that we might want a particular group or an individual or a laboratory, then, it takes money and a certain amount of logistic arrangement to get the person moved into the organization.

Hughes: Would you hope the scientific director had a medical degree?

Gerbode: I think he'd be better off if he had a medical degree although a Ph.D. could do the job too. These days, the combination of a Ph.D. and M.D. is very desirable, although not essential. I think of the two an M.D. has more breadth than a Ph.D., so I would favor that.

When we had this big discussion a few years ago, the people who were in favor of not having a strong scientific director won. They got more votes and therefore, they appointed Mr. [James] Ludwig who is known in the community for fund raising for the ballet and

Gerbode: for the zoological society. He was selected because he was an affable, pleasant person. I told him that I didn't think he was the proper person for the job because he didn't know anything about research. As time went on he also claimed that he was not hired to raise money, that he was not a fund raiser. Well, he had raised money for the ballet and for the zoological society, so he did have experience along those lines. In addition to those things, he also was very active in running the downtown garage. [tape interference]

The SKIVS [Smith-Kettlewell Institute of Visual Sciences] people under Dr. Jampolsky are the ones who don't want to have strong leadership in MRI as a whole. They are always anxious to....[tape interference] SKIVS should pay an overhead rate [for membership in MRI] even though the money comes out of their endowment funds. They should pay the going rate which currently is about 72 percent. We don't know that they do that, nor do we know what they spend their money on. It makes it sort of an abnormal situation.

Hughes: Is that legal for an element in an institution to retain secrecy in that way?

Gerbode: Yes, it is. They have to file a report in Sacramento stating what they've done with their money, and we could get that report if we wanted to, but we might be accused of snooping if we did. It's available because it's a public institution. Presently we have a long-range planning committee appointed under Sidney Unobsky, who is a wonderful guy, and Bill Creson, who is also a very intelligent and active person. They have been working for about a year on a plan which could be used for long-range planning at MRI.

Hughes: How were they chosen?

Gerbode: Mr. Ludwig had something to do with appointing them, before he was asked to resign. But I think the institute directors really determined who would be most desirable on the job.

Hughes: Why were those particular men chosen?

Gerbode: Because they are very interested in MRI and they are very intelligent and willing to look at all aspects of it and render an unbiased opinion about what should be done.

Hughes: What are their backgrounds?

Gerbode: Mr. Unobsky is a very successful private investor. Mr. Bill Creson is the chairman of Crown Zellerbach Corporation, which is an enormous company.

Hughes: Because of their backgrounds, I would assume then that they're looking at the institute mainly from the standpoint of efficiency and financial organization.

Gerbode: They're looking at it from the point of view of what we should be emphasizing within the institute. In other words, should we bring in other research groups to broaden the base of research? They're also looking at the role of what we call the science council as to whether or not it should have jurisdiction over certain aspects of administration which it has assumed in recent years. It's questionable whether it should be exercising any authority in those fields at all. Also they're looking at what sort of top leadership we should employ. In other words, do we want a strong scientific man at the head of MRI with organizational ability and interest and knowledge, or do we want just a bookkeeper kind of a person?

Hughes: What sort of criteria would they use in making such a decision?

Gerbode: I guess it really has to do with their final decisions about long-range planning.

Hughes: Is that decision very much tied in with what the federal government is funding?

Gerbode: Yes, it is because 80 percent or more of our money comes from the government. We have to compete for it. Certainly there's no use trying to do research which is not adequately funded anywhere. You can't do that.

Another big question which is up for review is whether or not the institute should remain entirely separate from the hospital. We originally put [the institute] together in such a way that the hospital would not influence the type of research or the people doing the research and would not be responsible for policy in spending [research] money. There are some people, I believe, who feel that maybe the research should be under the overall administration of the hospital.* My view is that the trustees of the hospital and certainly the chiefs of service in the hospital are not particularly knowledgeable about research. In fact, the present chiefs of service really don't do any research and rather feel that it's not a necessity in a private hospital complex like ours.

*What Dr. Gerbode refers to as the board of trustees of the hospital is actually the board of trustees of Pacific Medical Center.

Hughes: That's always been the feeling at the hospital group, has it not?

Gerbode: There has always been that feeling. From the very beginning, they resented very much our spending one hundred and fifty thousand dollars to support partially construction of the research building [MRI] which is now worth about three million dollars.

Hughes: There are, of course, in this country many institutions that have this combination of a hospital plus a research institute. Do you think that in general there is a tension between the two?

Gerbode: Usually where they're together in one complex it's in a university setting, a medical school setting. There are some private hospitals that do have research programs run by the staff of the hospital, but generally speaking the clinical staff in any private hospital is not particularly interested in research. They're interested in practice, more practice.

Now we're building a whole new office building in the [Pacific Medical] Center for a hundred doctors, and none of those doctors in that building who occupy space there have been selected because they're particularly interested in their particular specialities.

Hughes: Is that because the hospital board has been in charge of selection?

Gerbode: No, the [hospital] staff selects the doctors, and they're more or less in favor of having successful practitioners, and it should be that way too. It's an extra dividend if somebody comes in and likes to do a little research on the side. That's great. But it's hard to find people like that. They would much rather have a big private practice. Money is a very important factor in life. No question about it. [both laugh]

Possible Affiliation of Pacific Medical Center and Children's Hospital

Hughes: I know you've spoken about the Pacific Medical Center possibly affiliating with Children's Hospital. Is this part of the scheme that's being work on?

Gerbode: It's being discussed very seriously now. We have a joint committee of Children's and PMC which has been meeting almost on a weekly basis trying to work on the guidelines of how an amalgamation of the two hospitals might be beneficial for both. Some of the issues that are

Gerbode: bothering the committee now are who will be selected to be the chief officers of the two combined hospitals. People are very jealous of their perogatives, so they wouldn't want to have this person or that outfit be the chief executive officer or the president.

There is also the more sticky problem of duplication of services. Currently, Children's Hospital wants to start cardiac surgery and cardiac catheterization. This would be in direct competition with PMC which has a big cardiac service going already. We want to start a cancer therapy program with irradiation. Children's Hospital has one already, and they don't like the idea of our having one too.

Hughes: Is that the purpose of the linear accelerator that's going in at PMC?

Gerbode: If we did it, we would have to get a linear accelerator. So these are very sticky questions which will have to be solved in the next few months.

Hughes: Does Children's have any appreciable research going on?

Gerbode: They have funds for research and they have a small research laboratory. As far as I know, they only have one serious research worker over there and she's in immunology. I tried to have her come with us, but they offered her more money and more space, so she went over there. I haven't heard how she's doing. There are some other clinical people who have quite a bit of research money tucked away here and there, but as far as I know they don't really do much with it.

Hughes: So the amalgamation with Children's wouldn't particularly affect MRI.

Gerbode: Actually, it would be beneficial for MRI to have whatever Children's Hospital research efforts might be to work through MRI or in connection with MRI--make that a joint effort. But that hasn't even been discussed yet, so I don't know what will happen.

Recent Problems (Continued)

Hughes: Is there a time limit placed on the survey of MRI?

Gerbode: No, there's no time limit, but they're getting pretty near the end.

Hughes: How has the institute been doing with interim administrators?

Gerbode: Well, we run right now with a business office. We have one vice president in administration, [Mary Woolley], but she's not very knowledgeable about research. She's knowledgeable about seeing that everybody obeys the rules which have been established by the board or by the science council. She's not the kind of person who can think of what we should be doing in research the day after tomorrow. There are some people who feel that she's enough and that the place can be run by what amounts to a hotel concept.

Hughes: What do you mean by a "hotel concept"?

Gerbode: [MRI would] charge people for working there, which it does now, and have everybody pay their bills and let them determine on their own what kind of research they're going to do.

Hughes: That doesn't make a very cohesive institution.

Gerbode: It isn't very good. The hospital runs very well now because they have a president in charge of the whole thing who is extremely knowledgeable, very talented at handling people. I'm talking about Bruce Spivey. Under his presidency, they made a lot of major advances and constructive improvements. We could do the same at MRI if we got the right person. I don't know what's going to happen.

Hughes: Because the scientific vacuum at the top at the moment, do the science council and the institute directors assume more importance?

Gerbode: The institute directors do to a certain extent, but actually the science council has been running things more than it should be. It assumed control of space; it assumed control of appointments and a lot of other internal political things, which I think it should not be doing. I personally think the science council should be looking at the science in the place and saying, we need more of this kind of science, or we need to get some people in doing this kind of work to complement what we're doing already, and we should go out and find them and get them to move in with us. That's what you do when you're building up a faculty in a medical school.

Hughes: Does the science council have the power to change the direction of an institute's research?

Gerbode: It probably doesn't. It has the power to assign space. It should make constructive criticisms of the kind of research which is being done in the various institutes. But it doesn't do that. It will exercise a political position now and then.

- Hughes: I know you modeled MRI (or the Institutés of Medical Sciences as it was in those days) more or less after the Rockefeller Institute. Did it have something comparable to the science council?
- Gerbode: Yes, it has a science group; I have forgotten what it's called. But they've always had a scientific director at the top.
- Hughes: A strong one.
- Gerbode: A strong person who is science-oriented. The infrastructure was very simple and the bylaws and the rules and regulations were on a few pages in very simple words. I tried to keep it that way in our place too, but it's gotten more complicated than I think it needs to be right now.
- Hughes: The Rockefeller has always had a very strong director at the hospital and another individual who is a very strong director of the institute.
- Gerbode: That's right. They've always had somebody at the top who is extremely knowledgeable about research and helping a person get on with his research and complementing his research by getting other people to work with him.
- Hughes: Getting back to the situation at MRI, can you remember what the arguments were for having a nonscientific director?
- Gerbode: [chuckles] Yes, the argument was that the institute directors know pretty much what they want to do with their research and they should be left alone to do it on their own. I think the rest of the arguments are kind of weak, and I think they have to deal with apprehension on the part of at least one institute that it didn't want to have anybody too strong around who might say something about the way it runs its show and maybe also something about the amount of money it has and how it's used.
- Hughes: I can understand that viewpoint coming from SKIVS. But there must have been people in the other institutes that were going along with this viewpoint in order for it to pass. How could they see that as an advantage?
- Gerbode: They caved in because of political pressure. The other strong institute over there is the Institute of Behavioral Medicine. They had money for hypertension research for quite a few years. Now they have a lot of money for alcohol research, and therefore they are quite solid financially. It's run by Ph.D.s in psychology and

Gerbode: they really don't have too much interest in what anybody else is doing. It's too bad because they're strong financially. A lot of money is put into alcohol research.

Hughes: At the moment.

Gerbode: Well, it's a five-year grant.

Hughes: What about after five years?

Gerbode: They've usually renewed them. They did with hypertension. That went on for ten or fifteen years.

Hughes: Do you want to finish the story by telling what happened to Ludwig?

Gerbode: The trustees were not very happy with Ludwig's performance as president of MRI. Over a year ago they told him they thought he ought to do more fund raising, and he said he wasn't hired to do fund raising. They also felt that he wasn't really spending the time on developing MRI. He was spending too much time on the ballet, the zoological society, and that downtown garage, and doing it all out of the office in MRI. He had a telephone and everything there and the secretaries. That meant that he was probably giving us about one quarter time.

Hughes: What was the contract?

Gerbode: The contract was at least 50 percent of his time. The board of directors told him a year ago that it wished that his performance would be more along the lines which it had hoped, but he didn't change anything at all. So after a year it went back to him and said, things haven't changed very much and we think maybe we ought to get some new blood in.

Hughes: This is the institute board?

Gerbode: The executive committee of the board made the determination. I've always been suspected of being politically behind any big thing like this because of being the founder and prominent in MRI's development. But I didn't enter into this picture one bit. The trustees did that themselves, and I'm glad they did. Unfortunately, there were several women on the board whom Ludwig had brought in, and therefore they were more or less personally obligated to him. When he resigned, they resigned too. That's all right.

Hughes: How many people resigned?

Gerbode: Two.

Hughes: Have those places since been filled?

Gerbode: One has been filled; one will be filled.

Hughes: How is that done?

Gerbode: It's done by a trustee making a recommendation to a nominating committee. The nominating committee looks over the nomination to see if the nomination is in compliance with what is expected of that position. If it is, then they will suggest it to the executive committee.

Hughes: Is one of the main criteria expertise in financial matters?

Gerbode: No, I think getting along with people and seeing that the image of the institution is kept good in the eyes of the community. Very often it requires organizational ability. If they want to have a fund raising dance or something, they have to have some ladies in order to do that, and the various institutes [do] too. For example, the arthritis group under Bill Kuzell has a lot of strength in the community because arthritis is a very prevalent disease. When they had a party for the arthritis institute [the Kuzell Institute for Arthritis Research], it was very successful. Certain ladies raised a lot of money.

One of the new institute directors is Gail Schlesinger. She's married to Mr. Schlesinger who used to be my across the street neighbor. She's a very, very capable administrative person. She's very active in the group which is sponsoring research among college scientists. She'll do a lot, I'm sure.

Two of the people who resigned were on the Children's Hospital board, and that, in their minds, posed a conflict of interests because Children's Hospital has to raise 40 million dollars. That's about as much as a person can do, to have one big interest like that. As soon as there was a little bit of a problem at the top, they quickly used that as an excuse to get out--which is all right.

Hughes: You talked earlier about the competition between the cardiac programs and the cancer therapy programs at both hospitals. How are things like that resolved?

Gerbode: That's going to be a very tough one because the doctors involved won't like it. I've said all along that although they can discuss amalgamation at a very high level among the trustees, when it actually comes down to deciding that a given specialty should be given preference in one hospital rather than the other, this involves the doctors right away, and they don't like it.

Hughes: How are such decisions made in the first place?

Gerbode: Some of these things now are determined by a state committee. For example, to start a new open heart surgery unit in San Francisco, they have to get a certificate of need. They have to establish that there is a need for another heart unit. Unless they get it, they can't do it. I don't think anyone has really raised that question yet with Children's Hospital. But with us, you see, we simply started doing [open heart surgery]. I developed a team and did a lot of experimental work and finally got Crippled Children's [Service] to designate us as being somebody they'd pay to do their cases. So we were in business. Nobody else was doing it.

Heart Transplantation

Hughes: When Presbyterian decided to do heart transplants did that require state approval?

Gerbode: No, it required approval of the trustees. They are not being paid by insurance carriers for this work yet. [A few sentences of repetitious material were omitted here.]

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Gerbode: Tissue typing of kidneys is broadcast through a computer network. There is a latent period of a certain number of hours for kidneys to be moved by air from one place to the other and used. [The system is] working very well and eventually the same thing will be true with hearts. It's already in operation to a certain extent, but it will become even more organized in the future.

Hughes: Do all units doing heart transplants subscribe to that computer program?

Gerbode: In northern California, there are only two programs doing heart transplants.

Hughes: Don't the hearts come from all over?

Gerbode: They're made available mostly in California and Nevada, I would say. There are kidney transplant units in almost every state, so [kidneys] tend to stay in that same state or general geographic area.

Hughes: It would seem, from the stories that one hears of heart patients waiting for very long periods for a heart, that it would be well to extend the system to the nation.

Gerbode: Yes, but it's very costly. It costs a minimum of \$75,000 to do a heart transplant. If complications arise, it may even be \$100,000.

Hughes: I mean the retrieval system, locating hearts.

Gerbode: Along the Atlantic seaboard, where they have three or four very active heart transplant programs, there's fiendish competition for the hearts. They almost fight over them. I can see where that might eventually occur here too.

Hughes: Isn't that in the end determined by the tissue typing?

Gerbode: That is a determinant, but I think the relatives of the donor heart have a lot to say about where the heart's going to go. But they are usually so upset by the fact the patient has died, they don't really want to enter into the question of where the heart will go.

Hughes: Do you think the Bay Area, because it has a terribly high ratio of doctors to patients, might be on the vanguard of the changes that are occurring in American medicine?

Gerbode: I think we're pretty much up at the front of things in many areas-- no question about it. Some of the traditional areas in the East are not quite so outstanding as they used to be. The Mayo Clinic, for example, used to have a very dominant role in the Middle West. It's still very dominant from the point of view of general service, but people don't necessarily just go there anymore. They go to Cleveland and Detroit and Topeka, Kansas and a lot of other places rather than to the Mayo Clinic, because insurance covers them wherever they go, and they'd rather be closer to home, and the doctors are good. But a lot of people still go to the Mayo Clinic because they think that the place is so big and great that mistakes won't be made and they can always say that they've been to the Mayo Clinic for a decision, for whatever that's worth. People are still going to Lourdes.

Hughes: Well, is there any more to be said about MRI or anything else?

Gerbode: I think that's about as much as we need to say right now.

Family Background and Early Education##

[Interview 21: November 14, 1984]

Hughes: There are things that you left out about your parents, when we talked before, and I was wondering if you could tell me a little bit about their education, occupations and personalities.

Gerbode: Well, my father was trained in Saxony to be a contractor and he came over [to the U.S.] with his foster father who was his uncle. He came to Placerville because the first Frank Gerbode had established a gold mine outside of Placerville. My father very quickly got into the business of building small factory towns and the various things necessary for gold mining and also for tree farming. He built several saw mills, for example, for the people up there who were cutting down trees for lumber and I think he was quite successful at it. Of course, I was still a child and I don't remember any part of that. They decided to move to Sacramento when I was three years old. So my awakening that I can remember [chuckles] occurred some time later. I can remember the first day my father took me to school. I know he got me all dressed up. He even bought me a hat to wear [laughs]. Why, I don't know.

Hughes: Was it the local--

Gerbode: It was the local elementary school in Sacramento. It was a beautiful old red brick school. I can even remember my worry about whether I should ever learn how to tell time because this was very quickly brought into the picture in school and I should have learned how to tell time before that, but I hadn't.

Hughes: Did you start at kindergarten?

Gerbode: Yes.

Hughes: Why did your parents decide to move from Placerville to Sacramento?

Gerbode: I think [my father] saw that he had built everything that he'd like to build up there. He built several small towns and mills and things like that, and he covered the ground pretty well. I guess he figured he might as well get out. So he moved to Sacramento where he started doing the same thing on a smaller scale--contracting to build houses or business places. I guess he was reasonably good at it. Whatever he did he did to absolute perfection; I know that.

Gerbode: As time went on I went through elementary school and started going to high school in Sacramento. Meanwhile my sister, who was quite a bit older than I, had decided she wanted to be a businesswoman. So she took business courses and learned how to be a very efficient businesswoman and learned all about the paper business. Zellerbach Paper Company and Blake, Moffitt and Town both wanted her to take over their fine paper business. She worked for Zellerbach for a while but finally Blake, Moffitt and Town gave her a better arrangement, so she worked with them. This was also an inducement for my mother and father to move to Sacramento because my sister and my mother and father were very close and very compatible.

Meanwhile my brother--(Did I tell you about that before?).

Hughes: About the drowning?

Gerbode: About drowning.

Hughes: Yes.

Gerbode: And my older sister about her dying?

Hughes: Yes.*

Gerbode: This actually brought the family closer together because these were two very shocking things to happen. I think maybe it was partially responsible for my mother and father hanging onto my sister and me a little.

I would characterize my father as being a very strict, honest hard-working man. He did a great many things as a contractor. He did it himself. He did all the calculating, bidding and planning himself, working late at night. He'd rather do it himself than to hire somebody to do it.

Hughes: Did he have people working for him?

Gerbode: Yes, when he started building something, he'd get a crew together.

Hughes: And it was always the same crew?

Gerbode: No, he'd hire different people.

Hughes: Did he speak English with an accent?

*See p. 2.

Gerbode: No, he didn't. He spoke very good English.

Hughes: And you spoke English in your family?

Gerbode: Yes. My mother spoke very good English too. It was a very closely knit family life. My mother was not the kind of a person to go chatting around the neighborhood with friends. She kept pretty close to home. As a matter of fact there was a kind of tradition in the family that you never discussed family affairs with anybody [outside the family]. I find that some of the members of my family are the same. They just don't like to wash their linen in anybody else's yard. I guess I'm the same way. If I'm in trouble I try to work it out myself.

My mother was an extremely loving person. She was very affectionate and very attached to her family. I think her children and her husband were the most important things in her life. She always wanted to know where I was as a small boy, what time I was going to be home and so forth and so on. She always dressed me immaculately. Sometimes it was a little embarrassing to be always shiny and bright when some of the other kids weren't so shiny and bright, but I had no choice. This was the way I was told I should be.

I guess in grammar school I was a little bit on the shy side, although I did join the Boys Scouts and went on scouting expeditions. I never got to be an Eagle Scout because after I became a first-class scout I tired of the whole program and didn't want to do it anymore. Besides I got malaria on one of these trips and almost died. We were camping out near the Sacramento River. Obviously, I was bitten by an Anopheles mosquito and got malaria and, I think, almost died. I can still remember the hallucinations I had during the high fever episodes.

Hughes: How old were you?

Gerbode: I guess I was ten or eleven.

Hughes: What was the treatment?

Gerbode: It was symptomatic treatment. I know we didn't have any of the drugs that are currently being used. If they gave me anything I can't remember what it was.

Hughes: Did you spend much time with your father?

- Gerbode: Yes, I did. He taught me how to fish and to hunt. We'd go off in the mountains together. It used to be very aggravating to me that he could always walk farther and longer and steeper than I could. [both laugh] He was a very slow walker, but very deliberate. I had a very hard time keeping up with him even as a young man.
- Hughes: Did he carry on those activities once they moved to Piedmont?
- Gerbode: Yes, we decided we'd rebuild the old miner's cabin in the mountains when I was seventeen years old. We camped out for several weeks while we rebuilt that log cabin. It was very, very hard work.
- Hughes: Were you using material from the property?
- Gerbode: We chopped down the trees right from the same place and we had to "snake" them down to the site. We floated some of them down a little creek which was along the side of the cabin, and then, we had to pull them out. Green logs are awfully heavy.
- Hughes: Just the two of you?
- Gerbode: Yes. So we had to figure out ways of putting ropes around them and putting them up on some sawhorses so they could be trimmed to fit properly between the other logs. But we did it all and the place still stands.
- Hughes: Did you use the cabin after that?
- Gerbode: Yes, we used it for a while. But the one who used it more than anybody was Philip, my younger son. He loved it and he used to go up there whenever he could with some friends and camp out, hike around there. We had it pretty well outfitted with a good wood stove, kerosene lights, and a good fireplace which my father and I rebuilt during that same period.
- Hughes: There was no electricity?
- Gerbode: No, you were just way off in the middle of the forest. In fact, my brother, when he was a young man, shot a bear outside the cabin [laughs].
- Hughes: Did you do well all the way through school?
- Gerbode: I don't know how I stood relative to other children before high school. I think I was probably in the upper third, but I certainly wasn't the most brilliant student in class. I know the teachers

Gerbode: liked me and one teacher used to insist on walking with me [from] school. Her name was Miss Fleming and she was very round and very hard-working and very hard on children if they didn't learn their ABCs perfectly.

Hughes: Why did she take a special liking to you?

Gerbode: I don't know. She just liked me. She wore perspiration pads. Have you ever seen those?

Hughes: Yes [laughing].

Gerbode: I used to be terribly intrigued with why she would have to wear perspiration pads. She was a good teacher.

So then we come to high school. I started in Sacramento High School and for some reason I just didn't like it. I [didn't] feel as though I was going to get good enough grades there to get into college. Meanwhile, I decided I wanted to be a doctor.

Hughes: What decided you?

Gerbode: I think I decided to be a doctor because I wanted to be independent. I didn't want to have a boss. My father wanted me to be a businessman. (Didn't I mention that before?)

Hughes: Yes, and you went to business school.*

Gerbode: Yes, and took some jobs and did very well and saved quite a bit of money. I decided that I wanted to get out of that high school. I saw that the percentage of graduates from that school who got into good universities was very low. Meanwhile, my sister had moved down to San Francisco, so I decided that I should come here and go to a private school.

Hughes: With the idea of getting into college.

Gerbode: Yes. My sister very kindly said, come and we'll give you a room in our apartment, and so I did. Then I found a private school and took private instruction and took the college board examinations.

Hughes: You found the school without your parent's help?

Gerbode: Yes.

*See p. 6.

- Gerbode: They advertised it as Raymond School of Individual Instruction. I [made] a few inquiries about them and found that they took only two or three students at one time and did a lot of concentrated teaching. They got me a little old guy for an English instructor who went through classic English literature with me and made me learn all about Shakespeare and Milton and everything.
- Hughes: Were most of these students boning up for the college entrance exam?
- Gerbode: Yes. There were only two other students there at the time. It was a very concentrated way of doing it. Then I took the college board examinations and passed them easily and was admitted into the University of California right away.
- Hughes: Had it always been a given that you would go on to college?
- Gerbode: I just decided myself that I was going to do it.
- Hughes: Your parents didn't care one way or the other?
- Gerbode: Well they said, that's fine. My mother thought being a doctor was going to take me too long; it was going to be too hard. She felt that I could draw and that I should be an architect.
- Hughes: Did you ever really consider that?
- Gerbode: Only for about five minutes [both laugh]. So anyway, I guess you've heard about my going to the University of California?
- Hughes: Yes, you've told that story.
- Gerbode: I was very grateful to my sister for taking me in down here when the family were still in Sacramento. Then they moved to Piedmont.
- Hughes: It was just the two of you?
- Gerbode: No, she was married at that time. She had a very nice husband and he had a fatal coronary about five years after they were married. He was only forty-five or so when he had a coronary. She never remarried.
- Hughes: But she did continue in the paper business.
- Gerbode: Yes, she became an expert on fine paper. She knew exactly where all the fine paper could be bought and what it was to be used for, for publishers who need fine paper for books and reproductions.

Hughes: How long did you go to the Raymond School?

Gerbode: About a year and a half.

Hughes: Was that a hard adjustment? It was the first time you'd been away from your parents.

Gerbode: That didn't bother me very much. I was really determined I was going to do this and it was all-consuming.

Hughes: Did you not have much extracurricular life?

Gerbode: No I didn't. I didn't know anybody. I didn't really care. When I was admitted to U.C., they immediately began to rush me for the fraternity life over there and I didn't like what I saw at the fraternity rushing parties. They weren't bad, I just didn't like them.

Hughes: There were fraternities at Stanford as well, were there not?

Gerbode: Yes, the same thing happened when I went there, but I decided I didn't want to do that either, so I stayed in the dormitory, Old Sequoia, which is a famous great big barn of a place, but I loved living there and I liked the men that were there too.

Hughes: That's a bit out of character considering your later membership in many societies.

Gerbode: There's quite a difference between surgical societies and fraternities.

Hughes: A fraternity certainly consumes more of your life.

Gerbode: If you join a fraternity, you're locked into those twenty or thirty fellows in that house and you have to more or less live their lifestyle. But if you join the Pacific Union Club or the Bohemian Club you're left alone; you do what you want to do. You can use it or not use it and nobody makes you do anything.

Hughes: Is that enough about your family?

Gerbode: I think it is.

Surgical and Medical Societies

The American College of Surgeons and the American Surgical Society

Hughes: I was looking again at some of your memberships in various medical and surgical societies. What is the distinction between the American College of Surgeons and the American Surgical Society?

Gerbode: Well, the American College of Surgeons is very large. It has thousands of members. To get in you have to have proper training in surgery, go through a residency program, and you have to submit a certain number of operations that you've done, including the results of the operations.

Hughes: You have to pass your [surgical] boards as well?

Gerbode: You didn't have to pass the boards. Now you do. The American Surgical Association is the top surgical society in the country. You're nominated by somebody for that and invited to go to a meeting or two. If you have something good to present at a scientific meeting your chances of getting in are much better. I was proposed by Professor Reichert at Stanford who was the one who wanted me to be a neurosurgeon. I was taken in right away; I was very lucky.

Hughes: Was that unusual to be proposed so young?

Gerbode: Maybe it was a little, but there were others about my same age who were taken in at that time.

Hughes: Is there any competition between the two organizations?

Gerbode: Oh no. They complement each other.

The International College of Surgeons and the International Society of Surgery

Hughes: Then I have the same sort of questions about the International College of Surgeons and the International Society of Surgery.

Gerbode: Not the International College of Surgeons. That is a no-no society. [laughs] It was founded by a fellow in Chicago and they made everybody they could possibly think of members just by sending

Gerbode: them a certificate. They would hardly let you resign they wanted you in so badly. They did this all over South America and Europe. They now have thousands of members of all kinds and descriptions of surgeons.

Hughes: You are not a member?

Gerbode: I wouldn't join. It's a second-rate organization.

The International Society [of Surgery] is a prestigious organization. It is the oldest international society of surgery and it's been in existence for a long, long time. Originally, it was composed almost entirely of professors and assistant professors in medical schools. Since then, we've broadened the eligibility requirements so anybody who belongs to a major surgical society in his country can apply.

Hughes: Is membership automatic?

Gerbode: They have to go through a membership committee. I would say maybe only 40 percent are admitted.

Hughes: On what basis are they accepted?

Gerbode: Publications, presentations at meetings, research, teaching assignments in medical schools, proven track record in surgery.

Hughes: Do you need a sponsor?

Gerbode: You have to have two sponsors. I spent a lot of time with that society. I think I told you about that didn't I?

Hughes: Yes, I remember you were president.

Gerbode: I was president of the North American chapter and also president of the whole society.

Hughes: When you sponsor a physician for any sort of medical society are the criteria that you just mentioned the ones that go through your mind?

Gerbode: Well yes. I think when you're in this business as long as I've been in it, you know what the organizations are looking for and you can tell them whether the person has these qualifications or not.

Hughes: Is there much variation?

- Gerbode: Yes, there is some. Some men spend a lot more time in the laboratory doing research, some are very good cutting surgeons and they like to operate every day. Some men are disagreeable characters. [both laugh]
- Hughes: So you wouldn't necessarily recommend a research man for a cutting society.
- Gerbode: Oh yes, you would.
- Hughes: With the purpose of broadening that?
- Gerbode: Yes, I know a number of surgeons who became full professors who spent most of their time in the laboratories writing papers and in the operating room they were rather poor. I know two. One of the most famous ones in this country is a lousy surgeon. He had resigned from the chair in an Eastern university, but he's pretty good at doing research.
- Hughes: Presumably that was his claim-to-fame.
- Gerbode: Yes.
- Hughes: I noticed that there are two types of members of the International Society of Surgery. One is called "associate" and the other, "titular."
- Gerbode: Yes, we are eliminating the associate membership. Gradually, we're either dropping the associate members who didn't turn out to be so good or advancing them to a titular membership.
- Hughes: When you say, "didn't turn out to be so good," you mean in terms of publications?
- Gerbode: No, their overall accomplishments.
- Hughes: How do you drop somebody diplomatically?
- Gerbode: Associate members get tired of staying that way and resign, don't pay their dues. It's a passive thing.
- Hughes: The International Society of Surgery was founded in 1902, but the North American chapter did not become strong until a considerable number of years after that. American surgeons such as Evarts Graham, Alton Ochsner, Alfred Blalock, Owen Wangensteen and Frank Gerbode are accredited with strengthening the North American chapter. Why did Americans become interested in the International Society of Surgery?

Gerbode: Well, because the Americans, I being one, decided after the war that we had to be involved with the rest of the world in surgery and to exert some force in an international society. We had people coming along doing very good research and writing good papers and we felt that they should be on the program of the semi-annual meeting and able to hold office. We had to try to change the organization of the office in Brussels which was almost impossible to do.

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Gerbode: During the war there wasn't very much activity in these societies. Europe was disrupted from 1938 to 1945, for seven years. So everything pretty well stopped until after the war.

Hughes: Had Americans been active in the society before the war?

Gerbode: I think they were frustrated with it being largely a Belgian based organization and their inability to get any sense out of the office.

Hughes: Was that the only international group that a surgeon would be likely to join?

Gerbode: There were specialty organizations too. Orthopedists had an international organization. But all this international business really came into full flower after the war starting in '46. From then on there was a great deal of movement of surgeons back and forth between countries and appearing at meetings in Germany and Italy and France and England, getting to know people, and that's how it all got going. The whole business of vascular surgery came after the war. All those [vascular] societies were postwar societies. The specialities were postwar specialties.*

Hughes: Clarence Dennis, who was president of the North American chapter, wrote to a doctor, W.F. Baker, in August 1974 and said, "The need has arisen to provide assurance to the membership committee and the members of the North American chapter of the International Society of Surgeons that only men of the highest professional and ethical qualifications are taken into membership." Do you remember if there were specific problems that provoked the feeling of need for that assurance?

Gerbode: Yes, you see as soon as a society becomes important then a great many people want to join it and that would make Clarence Dennis say something like that.

*The following section on the International Society of Surgery was moved for the sake of continuity from a later portion of this interview.

Hughes: So it wasn't that there were particular problems with individuals?

Gerbode: No, I think it was that many people immediately wanted to join, because if you belong to these societies that's an indication to the public at large and to other doctors that you're good on a hospital staff.

Hughes: I noticed that there were regional divisions of the North American chapter. Were they largely set up to vet potential applicants for the region?

Gerbode: No, I think they were set up so they could have regional meetings. The American College of Surgeons has regional chapters all over the country and they have spring and fall meetings of the local members and put on pretty good programs.

Hughes: Do most of the members go to the meetings of the International Surgical Society?

Gerbode: The attendance has been pretty good. I'd say that maybe between half and two-thirds of the registered members attend the meetings.

Hughes: In 1977 you wrote a series of letters to American surgeons saying that you would sponsor their membership in the International Society of Surgery. Why was the society actively soliciting membership?

Gerbode: We decided that we ought to enlarge the membership and so we selected people who were proven people and usually academic people who were of the calibre we thought would be suitable for this society and so we actually invited them to join.

Hughes: Before that it had been left much looser?

Gerbode: An individual [would] think, well I'll propose Joe.

The International Cardiovascular Society

Hughes: How does the International Cardiovascular Society fit into the picture?

Gerbode: Well, it was started after the war too. It came out of [the] International Society of Angiology which was an organization mainly interested in varicose veins, venous problems, and to a certain extent in the beginning with arterial problems. But you must remember that even good xrays with dye injected into vessels was all really developed after the war.

Hughes: So angiology wasn't really a specialty before the war.

Gerbode: It wasn't a specialty. It was started, but it really hadn't gotten very far. The simple repair of an artery, let us say, severed through a stab wound, was not done very broadly. The techniques were not known. Using vascular grafts to repair arteries damaged by shrapnel or bullet wounds really was not put into widespread use until after the Vietnamese War. There were a few surgeons over there who decided to repair arteries in the field.

Hughes: Yet the techniques were there.

Gerbode: Oh, the technique was there. Alexis Carrel showed you how to do it, but it's like everything else, it takes twenty years or more for things to be applied that have been discovered or developed.

Hughes: Grafts were being used in established medical centers, weren't they, before the Vietnamese War?

Gerbode: No, they weren't. You must remember that cloth grafts are postwar. The first grafts made out of cloth were made out of nylon stockings. We can thank people like Mike DeBakey for getting industry interested in the problem of making dacron fabric vessel replacements and cloth for patching holes in hearts. As soon as industry can see that they're going to make money, they'll go right to it.

Hughes: How did DeBakey go about that?

Gerbode: He just got to know them and talk to them and said, this is what we need. They had good knitting machines, particularly in the South. They could knit things with fine thread, which was important.

Hughes: Did it have to be finer than they were used to making for women's wear?

Gerbode: It was finer than many things, but it didn't have to be ultra-fine.

Hughes: Anything more to say about societies?

The Society of University Surgeons

- Gerbode: Oh, I could talk forever about them. [interviewer laughs] Every one is different you know. Take the Society of University Surgeons which I joined before the war. This is a society to bring all the young surgeons together who want to have academic careers and have proven ability to teach and want to stay around the universities and do research and teaching. They have a meeting every spring always in a university somewhere.
- Hughes: We talked previously about the fact that Britain was very late in combining cutting surgery, as you call it, with the research lab. Did they eventually develop academic organizations that--
- Gerbode: Yes, in the last fifteen years English surgeons have decided that the academic surgeons should more or less be required to do research. So in each of the teaching hospitals they have a professorial unit to distinguish it from the ordinary units which are run by consulting surgeons. These men are called professors who run the professorial units and they always have laboratories. They always have young people doing research.
- Hughes: Do they usually just do that rather than clinical work as well?
- Gerbode: No, they do both.
- Hughes: But a consultant wouldn't necessarily be able to--
- Gerbode: A consultant wouldn't do research. He might write some clinical papers, but he would very rarely go in the laboratory and do research.
- Hughes: Does that mean the research surgeon is very much the minority?
- Gerbode: The surgeons doing research in England are much fewer in number than the ones who are consultants.
- Hughes: Is that true also of the continent?
- Gerbode: Yes.

The Postwar Growth of Cardiovascular Surgery

Hughes: A question on a different topic: In 1964, Arthur Selzer, chief of medical cardiology at Presbyterian tried to organize a training program for nurses in the field of cardiovascular diseases. Did he actually do this?

Gerbode: I don't know if he did or not. We trained a lot of nurses in intensive care, but we did it mainly by having some very fine senior nurses who knew the business very well teach the younger girls more or less on a hand-to-hand basis.

Hughes: This must have been an aspect of the growth of cardiovascular surgery and cardiology.

Gerbode: Yes. The whole thing was an explosion starting in the late fifties and early sixties. Everybody realized [cardiovascular surgery] was very important, so we had to develop new methods of taking care of sick people, new methods of making a diagnosis, and new methods of treatment.

Hughes: And training programs?

Gerbode: And training programs were necessary.

Hughes: When do you think all that started?

Gerbode: Training programs in cardiac surgery started in the late fifties.

Hughes: At isolated centers?

Gerbode: Yes, at isolated centers because there weren't very many centers which had a program going.

Hughes: And was this mainly funded by NIH?

The Fellowship Program in Cardiovascular Surgery

Gerbode: A combination. I had a training program which was funded for about five years or more by NIH. The stipends were ridiculously low, but the young men were in there because they knew that if they went through a program like that they'd get a good job afterwards. I simply paid some of the men I had in training. I simply put them on a stipend based on my professional income.

Hughes: That was unusual.

Gerbode: No, I think there were a number of surgeons in the country who did that.

Hughes: The idea being to move the specialty forward?

Gerbode: Yes, and to train people in the field. There's a great satisfaction in training somebody and seeing them learn how to do something and then do it well.

Hughes: Did young people see the opportunities very quickly?

Gerbode: Oh yes! They could see them very clearly. In my training program for every fellow I appointed I probably had four applicants. I had a very simple rule which was different from the rules which most academic surgeons had. They were obligated to keep American people in their program and usually ones that came right out of their universities. I decided that I was going to take the best men regardless of where they came from. That explains why I had so many people from Europe and the rest of the world. Every one turned out to be a winner. If I'd had to take them out of our own [institution] I don't think I would have had so many winners.

Hughes: Are there any other changes that we should talk about connected with the explosion of cardiovascular surgery?

Gerbode: Well, the whole business of diagnosis has undergone enormous changes. Right now we have techniques to make diagnoses that were not even thought of fifteen years ago.

Hughes: Are you thinking of nuclear magnetic resonance and that kind of thing?

Gerbode: Yes.

Hughes: Are those usually taught as an aspect of the residency program?

Gerbode: Oh yes.

Hughes: It's built into the residency program.

Gerbode: [Yes], the young men who are going on in cardiology have to know these techniques.

A Letter to Costas Tountas, 1974

Hughes: Another topic: In 1974 you wrote a letter to Professor Costas Tountas. I will quote one paragraph: "I appreciate having your invitation to be a guest at the International College of Surgeons meeting, but I must refuse. The main reason is that, as you probably know, the ACS and the ISS are running on opposite tracks to the ICS and don't like each other. As I am involved with both of these other societies it would put me in an ambiguous situation. Frankly, being very active in the ICS makes it almost impossible to go far with the ACS." What specifically were you seeing as problems?

Gerbode: I'll give you a very simple explanation. If a young man joins the International College of Surgeons and is not a member of the American Surgical Society, the chances are that it would be very hard for him to get in the American Surgical Society. Part of that is just snootyism, egoism, but it is a fact.

Hughes: Do individuals ever fight if they are not accepted for membership?

Gerbode: There's no recourse.

A Letter from Norman Shumway, December 1976

Hughes: One last letter. This was written by Shumway in December 1976 and I'll quote: "When I see today's so-called cardiac surgeons performing a little epicardial routine so confidently and for such great financial reward, I think back to those days in the beginning when the problems were almost insuperable. But fortunately at the helm were men up to the terrible stresses demanded from real pathfinders. How do they say, after the explorers come the exploiters?" Why did he refer to cardiac surgeons as "so-called"?

Gerbode: Because they could only do an AC [aortocoronary] bypass operation. If you gave them a congenital heart to repair they wouldn't know how to do it.

Hughes: Is that due to lack of experience?

Gerbode: Well, it's much harder. It requires much more skill and knowledge. You shouldn't probably record this, but there's a surgeon here in town who does an AC bypass every day and is worth millions by now

Gerbode: just doing this simple operation. He's very skillful at it. But if you gave him a congenital problem, say a tetralogy of Fallot, a blue baby operation, he wouldn't be able to do it at all.

Hughes: Yet the training would include a broad spectrum of experience, wouldn't it?

Gerbode: Yes, they have to go through a residency to pass their board examinations. On paper, they're supposed to know about everything. But there's a lot of difference.

Hughes: Shumway also referred to the "terrible stresses" demanded of the real pathfinders.

Gerbode: Well, that's true. It was hard on you to try to figure out what was inside that heart when you looked at it for the first time. The living heart beating is entirely different than the one you see in pathology, the one that's been pickled.

Hughes: That's one small area where you must have been at a tremendous advantage having worked so much in the dog lab.

Gerbode: Oh yes. I did over 300 dog operations before I touched a human and it made a lot of difference.

Hughes: How did British surgeons in the early days do it?

Gerbode: [chuckles] They just stumbled through it. Some were very good surgeons and they just kept doing it until they got good at it.

Hughes: The last phrase that Shumway used: "After the explorers come the exploiters." You're referring to your AC bypass friend? [Dr. Gerbode nods] That's the end of my questions. Is there anything that you want to say about anything?

Gerbode: Oh, how about some lunch. [both laugh]

End of interview.

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Brochure on the Gerbode Endowed Chair



(Gerbode Endowed Chair brochure, continued)

The Power of an Idea

A distinguished medical educator, pioneering heart surgeon, and research scientist for more than forty years, Frank Gerbode, M.D., has had a major impact upon the progress within the field of heart research. His innovative work has brought about improved surgical techniques, newer and more efficient instrumentation, and research projects designed to improve man's knowledge of heart disease. Furthermore, Dr. Gerbode has influenced the lives of hundreds of young physicians, and his "graduates" have become some of today's most eminent surgeons and medical scientists.

Few men's lives illustrate so dramatically the power of an idea. In 1959, Dr. Gerbode advanced his plan to establish a more viable approach to medical and scientific research with the organization of the Institutes of Medical Sciences and the formation of the Heart Research Institute at the Pacific Medical Center in San Francisco. In 1979, the Frank Gerbode Medical Research Foundation was created in his honor to augment the research activity at the Institutes of Medical Sciences which he began two decades earlier.

Frank Gerbode, M.D.

Frank Gerbode was born February 3, 1907, in Placerville, California. He was a student at Stanford University, graduating cum laude in 1932. He received his medical degree from Stanford Medical School in 1936.

Dr. Gerbode completed his residency in surgery at Stanford University Hospitals. His teaching career began in 1940 at Stanford Medical School. From 1942 to 1945, Dr. Gerbode served with the 59th Evacuation Hospital in the African and European Theaters. In 1945, he resumed his teaching and research at Stanford Medical School. He rose to the position of Chief of the Department of Cardiovascular Surgery at Stanford Hospital in San Francisco and retained that appointment until the hospital moved to Palo Alto, California. He then became chief of Cardiovascular Surgery at Presbyterian Hospital in San Francisco.

(Gerbode Endowed Chair brochure, continued)

His career in medicine can only be described as phenomenal. His many contributions to heart research, education, and clinical practice are reflected in the quality of former residents and fellows, as well as in the more than three hundred research papers, monographs, and textbook chapters he has authored. For many years Dr. Gerbode has been in demand as a speaker at clinical, research, and educational meetings and seminars, and he has been a member of numerous national and international medical committees.

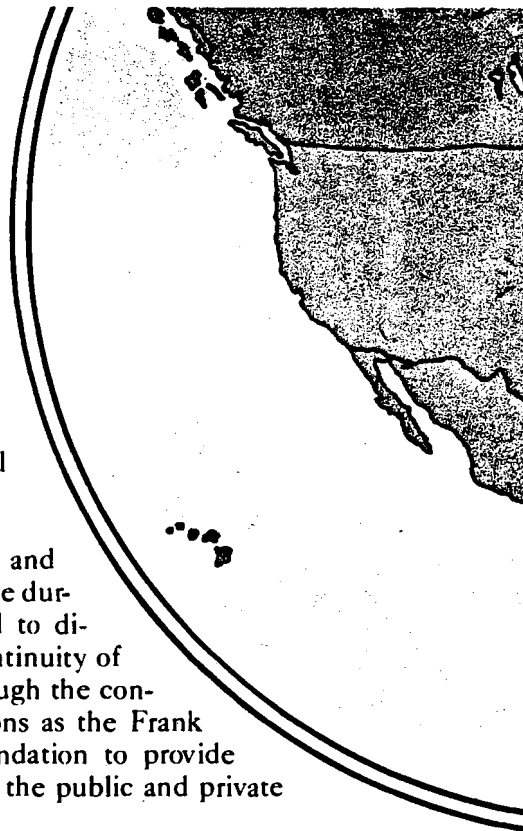
Dr. Gerbode was a principal founder of the Institutes of Medical Sciences (IMS), insisting that it be established as a separate corporation. He recognized twenty years ago that research can flourish independently, without medical school or hospital control. This vision has been the essence of the IMS for over two decades. Now, under Dr. Gerbode's guidance, many of the research projects at the IMS are setting standards for excellence which other research programs throughout the nation strive to emulate.

The Gerbode Endowed Chair

The establishment of the Gerbode Endowed Chair is a significant contribution to medicine for it promises continuity of research in today's most challenging areas of medical science. It will help to generate a flow of funds to support pilot research projects. It will create training opportunities for future research scientists. It will make income available for educational meetings. And, most importantly, the Gerbode Chair will allow the Frank Gerbode Medical Research Foundation to provide security for investigators who function under research grants. Thus, while honoring a great man within his lifetime, the Gerbode Chair will be an investment in human resources and an extension of the power of the idea of Dr. Gerbode.

The concept of the endowed chair is not new. It has served an important function in many colleges and universities across the country. However, the concept of an endowed chair within a *private, nonprofit research organization* is not only new, but exists today

(Gerbode Endowed Chair brochure, continued)



only at the Frank Gerbode Medical Research Foundation.

Federal funding for medical and scientific research has been variable during recent years and is expected to diminish over the next decade. Continuity of research can be assured only through the continued ability of such organizations as the Frank Gerbode Medical Research Foundation to provide regular unrestricted income from the public and private sectors.

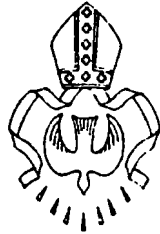
With the establishment of the Gerbode Endowed Chair, the Frank Gerbode Medical Research Foundation will be able to generate a steady flow of funds and direct this flow toward the improvement and maintenance of quality research efforts.

It is a fitting tribute to create an endowment in Dr. Gerbode's name that will support the humanitarian interests to which he has devoted his life.

**Frank Gerbode Medical Research Foundation
Pacific Medical Center
2340 Clay Street, Annex 309
San Francisco, CA 94115
(415) 567-0585**

*The printing of this brochure was made possible by gifts from
Mrs. Harley Stevens of San Francisco, CA
Bio-Response, Inc. of Wilton, CN
William Harvey, a division of C.R. Bard, Inc. of Santa Ana, CA*

A Service of Thanksgiving
for the life of
Frank Gerbode, M. D.



14 December 1984

11.30 a.m.

Grace Cathedral
San Francisco

(A Service of Thanksgiving, continued)

*The order of service begins on page 469 in
The Book of Common Prayer.*

Hymn 473

Dawn

High o'er the lonely hills
Black turns to gray,
Birdsong the valley fills,
Mists fold away;
Gray wakes to green again,
Beauty is seen again,
Gold and serene again
Dawneth the day.

So, o'er the hills of life,
Stormy, forlorn,
Out of the cloud of strife
Sunrise is born;
Swift grows the light for us;
Ended is night for us;
Soundless and bright for us
Breaketh God's morn.

Hear we no beat of drums,
Fanfare nor cry,
When Christ the herald comes
Quietly nigh;
Splendor he makes on earth;
Color awakes on earth;
Suddenly breaks on earth
Light from the sky.

Bid then farewell to sleep:
Rise up and run!
What though the hill be steep?
Strength's in the sun.
Now shall you find at last
Night's left behind at last,
And for mankind at last
Day has begun!

Psalms 121, 23 (pp.473,476-King James Version)

Readings from Holy Scripture

Wisdom 3:1-5,9

Romans 8:18,19,28,34,35,37-39

John 14:1-6

Hymn 467

Eventide

Abide with me: fast falls the eventide;
The darkness deepens; Lord with me abide:
When other helpers fail and comforts flee,
Help of the helpless, O abide with me.

Swift to its close ebbs out life's little day,
Earth's joys grow dim, its glories pass away,
Change and decay in all around I see;
O thou who changest not, abide with me.

(A Service of Thanksgiving, continued)

I need thy presence ev'ry passing hour;
 What but thy grace can foil the tempter's power?
 Who, like thyself, my guide and stay can be?
 Through cloud and sunshine, Lord, abide with me.

Hold thou thy cross before my closing eyes;
 Shine through the gloom, and point me to the skies;
 Heav'n's morning breaks, and earth's vain shadows flee:
 In life, in death, O Lord, abide with me.

The Prayers (p.480)

The Commendation (p.482)

Hymn 352

Diademata

Crown him with many crowns,
 The Lamb upon his throne;
 Hark! how the heavenly anthem drowns
 All music but his own:
 Awake, my soul, and sing
 Of him who died for thee,
 And hail him as thy matchless King
 Through all eternity.

Crown him the Son of God
 Before the worlds began,
 And ye, who tread where he hath trod,
 Crown him the Son of man;
 Who every grief hath known
 That wrings the human breast,
 And takes and bears them for his own,
 That all in him may rest.

Crown him the Lord of life,
 Who triumphed o'er the grave,
 And rose victorious in the strife
 For those he came to save;
 His glories now we sing
 Who died, and rose on high,
 Who died, eternal life to bring,
 And lives that death may die.

+

+

+

Officiant	The Venerable C. Julian Bartlett Dean Emeritus of Grace Cathedral
Organist	Mr. John Renke, Associate Organist and Choirmaster of Grace Cathedral

(A Service of Thanksgiving, continued)

FRANK GERBODE, M.D.
February 3, 1907--December 14, 1981

Today we celebrate and remember with thanksgiving an accomplished and world renown citizen and friend. San Francisco and California have been proud to claim him for their own, but Frank Gerbode was really a world citizen. Born in Placerville, he received his baccalaureate and medical degrees at Stanford University. In due course, he married Martha Alexander, of blessed memory, a native of Oakland, and who, in her own right, was a widely beloved and public spirited benefactor. They are survived by four children, Maryanna G. Shaw, Frank A. Gerbode, John Phillip Gerbode, and Penelope G. Jay. There are nine grandchildren: Joseph Alexander Shaw, Lionel Albert Shaw, Sara Marley Shaw, Colin Robert Gerbode, Ian Phillip Gerbode, Sharon Jane Gerbode, Ian English Hopper, Kevin Nicholas Gilpin Hopper, and Jessica Ashley Gerbode.

Frank Gerbode's medical training was at Stanford and Highland Hospitals and at the University of Munich. He became internationally recognized as a pioneer in medical research and in the development of a heart valve bypass technique and in open heart surgery. A founder of the Medical Research Institute and the Heart Research Institute at Pacific Medical Center, he trained many students from other countries who came here because of him.

It would be impossible to enumerate in the space available his many credentials, citations and awards: for nearly 35 years he served in 16 research, consultant and medical positions; engaged in 22 professional activities; was elected to 37 medical societies at home and abroad; received 25 distinguished honorary awards and 3 honorary degrees; served on 5 medical editorial boards and had 5 hospital affiliations.

During World War II, Dr. Gerbode served as Major and then Lt. Colonel in the Army Medical Corps, and received 6 combat medals and a Unit Citation.

In memory of such a man, we bow our heads in thanksgiving and in honor. May he now rest in peace and may light perpetual shine upon him. Well done, thou good and faithful servant.

The ushers have been invited from the medical community, from the Bohemian Club, and from the Chit Chat Club.

APPENDIX F

Invitation to the Frank L.A. Gerbode Research Building Dedication

*The Trustees of the Medical Research Institute
of San Francisco*

*at Pacific Presbyterian Medical Center
ask you to join them at the dedication of the
Frank L. A. Gerbode Research Building*

11 am

Tuesday, May 21, 1985

2200 Webster Street, San Francisco

Invitation to Frank L.A. Gerbode Research Building
Dedication Ceremony and Dinner-

The
**FRANK L. A. GERBODE
RESEARCH BUILDING**

Will be dedicated
11:00 a.m. Tuesday, May 21, 1985
2200 Webster Street
San Francisco

The Trustees of
The Medical Research Institute
of San Francisco
at
Pacific Presbyterian Medical Center
request the pleasure of your company
at a
Dinner Dance
Stanford Court Hotel
Tuesday, May 21, 1985
7:00 p.m. - Cocktails
7:45 p.m. - Dinner
To celebrate the dedication and naming
of the Institute's Research Building
in honor of
FRANK L. A. GERBODE

(Dedication Ceremony and Dinner Invitation, continued)

BENEFIT COMMITTEE

Mrs. Thomas J. Perkins, Chairman

<i>James H. Billings, Ph.D.</i>	<i>Mr. William R. Mackey</i>
<i>Roy B. Cohn, M.D.</i>	<i>Mr. & Mrs. John Ward Mailliard III</i>
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<i>John E. Connolly, M.D.</i>	<i>Mrs. Stephen McKeen</i>
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<i>Mrs. Jane H. Fuller</i>	<i>Alan B. Scott, M.D.</i>
<i>Margot Green, M.D.</i>	<i>Mrs. Maryanna G. Shaw</i>
<i>Mr. Lawrence Hamilton</i>	<i>Norman E. Shumway, M.D.</i>
<i>Frederick G. Hudson, M.D.</i>	<i>Bruce E. Spivey, M.D.</i>
<i>Arthur Jampolsky, M.D.</i>	<i>Mrs. Harley Stevens</i>
<i>Nicholas Johnson, M.D.</i>	<i>Mr. Sidney Unobskey</i>
<i>Mrs. Charles B. Kuhn</i>	<i>Dr. & Mrs. George Z. Williams</i>
<i>William C. Kuzell, M.D.</i>	<i>Mr. & Mrs. Alfred S. Wilsey</i>
<i>Mr. & Mrs. William B. MacColl, Jr.</i>	

RESOLUTION

WHEREAS, the Medical Research Institute Board of Trustees has respectfully requested by means of a resolution passed at their Board of Trustees meeting of February 19, 1985, that the Pacific Medical Center Board of Trustees give its "early and favorable attention to dedicating and naming the research building at 2200 Webster Street the Frank L.A. Gerbode Research Building in honor of MRI's esteemed founder, long-time President and revered member of the campus community;"

AND WHEREAS, this action has the support of the members of the Frank L.A. Gerbode family;

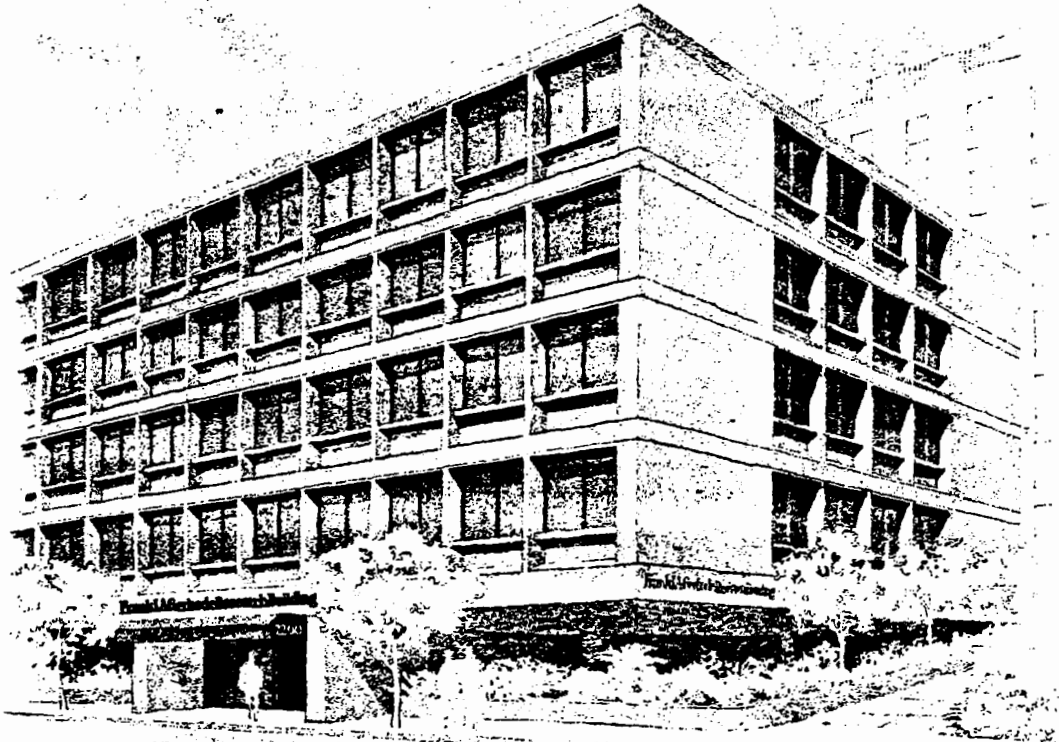
AND WHEREAS, this matter has been reviewed and approved by the Pacific Medical Center Executive Committee of the Board of Trustees;

BE IT THEREFORE RESOLVED, that the Medical Research Institute Building at 2200 Webster Street be renamed and designated the Frank L.A. Gerbode Research Building in honor of Pacific Medical Center's and the Medical Research Institute's fellow Board member and revered member of the campus community.

BE IT RESOLVED FURTHER, that the officers of Pacific Medical Center are authorized, empowered and directed to do any and all things necessary and appropriate to implement the above-described naming and dedication.

APPENDIX H

Announcement of Frank L.A. Gerbode
Research Building Dedication



Frank L. A. Gerbode, M.D. has been honored world wide for his distinguished career in cardiovascular surgery and lifelong dedication to research. Dr. Gerbode pioneered the development of a heart lung oxygenator and in 1954 led the team that performed the West Coast's first open heart surgery. He served as chairman of the Pacific Presbyterian Medical Center's Department of Cardiovascular Surgery from 1960 to 1979. As a trustee of Pacific Presbyterian Medical Center, Dr. Gerbode was instrumental in achieving such noteworthy goals as the construction of the Research Building and the new Presbyterian Hospital.

Dr. Gerbode was a founder of the Medical Research Institute of San Francisco (MRI) located at Pacific Presbyterian Medical Center. At MRI Dr. Gerbode established major cardiac research and education programs and served as Director of MRI's Heart Research Institute. He served MRI as President for 19 years and continuously as a trustee.

The legacy of Dr. Gerbode is endowed with surgical fellows inspired by his teaching, researchers guided by his insights, grateful patients healed through his care, colleagues spirited by his leadership and a community enriched by his kindness and generosity.

Frank L. A. Gerbode Research Building
dedicated May 21, 1985
Medical Research Institute of San Francisco
at Pacific Presbyterian Medical Center
2200 Webster Street
San Francisco, CA 94115

Program of Frank L.A. Gerbode Research Building Dedication Ceremony

FRANK L. A. GERBODE RESEARCH BUILDING

*2200 Webster Street
San Francisco, California*

Dedication - May 21, 1985

Welcome and Introduction of Honored Guests

*Ms. Mary Woolley
Chief Administrative Officer
Medical Research Institute*

Dedication Remarks

*Mr. Sidney Unobskey
Chairman, Board of Trustees
Medical Research Institute*

and

*Mr. George Ditz, Jr.
Chairman, Board of Trustees
Pacific Presbyterian Medical Center*

Salute to Frank Gerbode, M.D., the Medical Research Institute and Pacific Presbyterian Medical Center

*Supervisor Louise Renne
Representing Mayor Dianne Feinstein and the City of San Francisco*

Tribute to Frank Gerbode, M.D.

*John J. Osborn, M.D.
Trustee Emeritus
Medical Research Institute*

Response on Behalf of the Gerbode Family

*Ms. Maryanna Gerbode Shaw
Trustee, Pacific Presbyterian Medical Center*

Benediction

*The Venerable C. Julian Bartlett
Dean Emeritus, Grace Cathedral*

(Program, continued)

Following four years of dedicated efforts by Frank Gerbode, M.D. and his colleagues in the community, the Research Building at Pacific Presbyterian Medical Center was opened in 1964. U.S. Surgeon General Dr. Luther L. Terry's dedication speech addressed the ideals which continue to characterize Pacific Presbyterian Medical Center and the Medical Research Institute's commitment to excellence.

"This country's health requirements are such that we must continue to support and expand essential, high quality medical research and associated activities wherever investigative competence makes that action purposeful. The new research laboratory which we are dedicating today, is such an institution. It has been fortunate in recruiting new, top-notch researchers — its research staff has tripled since 1961. And the significant research being conducted here will expand measurably when your future multiple disciplinary basic research laboratory adds its weight to the already formidable investigative program underway.

Your Board of Trustees and your inspired professional staff have made it possible for Presbyterian to offer a personalized service wholly organized and effected by Bay Area residents. This ideal has characterized Presbyterian from its very beginnings, and I know it will continue to be one of its strongest guidelines in the future. The measure and quality of community responsibility that I see reflected here should be a source of great pride to each of you."

We are privileged today to re-dedicate and name the Research Building at Pacific Presbyterian Medical Center in honor of Frank L.A. Gerbode, whose clinical and research career and sense of community responsibility epitomized the founding principles and long range goals of the Pacific Presbyterian Medical Center and the Medical Research Institute.

• • • • •

Frank Gerbode, with his special talents, energy and spirit, that brought so much honor to Pacific Presbyterian Medical Center and to the Medical Research Institute, will always be a force and part of us. Frank kept PPMC and MRI alive, and he was a most important individual in our survival over the past two decades. He was a truly unique person whom we will miss very much, indeed. By naming this building in Frank Gerbode's honor and memory, we can assure that the legacy of his work and talents will always be with us.

*Bruce E. Spivey, M.D.
President/Chief Executive Officer
Pacific Presbyterian Medical Center*



PAN-PACIFIC SURGICAL ASSOCIATION

NEWS BULLETIN

An inter-disciplinary surgical association representing the following surgical specialties:
Anesthesiology • General Surgery • Neurosurgery • Obstetrics & Gynecology •
Ophthalmology • Orthopedic Surgery • Otolaryngology Head & Neck • Plastic Surgery •
Thoracic/Cardiovascular • Urology

Volume 7, No. 4

Official Publication of Pan Pacific Surgical Association
Founded in Honolulu, Hawaii Aug. 14, 1929

December, 1985

What I Remember About Frank

In the September issue of the News Bulletin, members were asked to write a personal remembrance of Dr. Frank Gerbode for publication in the December issue. Those remembrances may be found on the following pages.



FRANK L. A. GERBODE, M.D.
1907-1985

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