

Interview with Frank Cerra

Interviewed by Associate Dean Ann M. Pflaum
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Frank Cerra - FC
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AP: This is Ann Pflaum. I'm interviewing Dr. Frank Cerra. Dr. Cerra is senior vice-president for the Health Sciences. He came here in 1981, but will be describing for us some major events for us of the university over the last five decades. I will turn the microphone over to Dr. Cerra.

FC: Good morning—even though it's afternoon. [laughter] I guess I'll be discussing primarily the Medical School over the last fifty years in the context not only of the University of Minnesota but I think medical schools in general. There are a bunch of themes that recur upon which I think one can understand the development of the discipline of medicine and, in particular, the School of Medicine at the University of Minnesota.

I guess, the first of these themes is going from what was, essentially, a barbershop profession to a highly skilled, evidence-based profession. I use the meaning of the word profession in a very specific, almost term of art, way, where there is a very clearly defined body of knowledge that is recognized as belonging to this particular group, for which there are standards of performance and upon which there is an ethical basis for the practice.

I think the second theme that will develop in my comments really has to do with the care delivery of health or what you might call the marketplace. I will use those two terms interchangeably because I think you call them one or the other depending on where you're sitting. Inside the institution, we don't like to talk about marketplaces because it's a business concept and it doesn't feel right to us because it's not part of our culture and tradition; but, in fact, health professional schools live in and respond to and, hopefully, lead the marketplace. The marketplace is where health care is delivered and, hence, the term care delivery system. That is a major player in all health professional schools and in, particularly, the marketplace because we train the professionals that work in that marketplace, such as the doctors. But, the marketplace has a life of its own in the delivery of the care. Minnesota started the transition from what, prior to the 1970s, was a fee-for-service delivery system. If you had a problem, you went to see the doctor. The doctor, hopefully, helped you—I'm going to push it back to the mid 1960s, I guess, pre-Medicare—and you paid a fee for the service, the same way when you bought

a hammer, you'd pay the hardware store guy however many dollars it was for the hammer. That was the fee-for-service delivery system. There are a bunch of forces that changed the marketplace, that have to do with discovery, innovation, the development of new knowledge, the development of new technologies to diagnose and treat, the pharmaceutical revolution and, then, Minnesota's unique contribution, which is the concept of managed care in its earliest form, being the health maintenance organization [HMO], that began here in the late 1960s and early 1970s and transformed the marketplace until, eventually, it went in and it sat on the dean's office and said, "You need to change. You're not meeting our needs. We're not going to pay you anymore for the additional cost of doing education and research," which was a process that began in the late 1980s and early 1990s.

These sort of themes, I think, consolidate the incredible change in going from a system of suction cups to what is the highest tech medical care in the world, where, if you can get into the care and delivery system, it's the best care in the world and going, from the science that made that transition and developed what we have today, into a marketplace that is now driving it in the opposite directions. Those are the kinds of things that I think need to be traced and in the process to talk about this particular medical school. I intend to be fairly candid in these comments so they may need some editing. [laughter] But, I think it's important to be candid.

I want to go back now to the 1950s. The 1950s is an era where we finally have a really good Medical School. It's working in an environment of innovation and creativity or the potential for that. It's working in a state that I think promotes the development of innovative and new approaches to doing things. It's in the context of a report that came out in the early part of the century called the Flexner Report that really had a profound influence on the practice of medicine, taking it from a very loose sort of cacophony of apprenticeships into something that is, as we understand today, a highly structured training environment that is designed to take students from knowing nothing to making them into, hopefully, compassionate people that can diagnose and treat disease as well as promote wellness. Everything it takes to become a diagnostician, to do differential diagnosis, make a diagnosis, and use a combination of judgment and evidence to achieve a differential diagnosis that you, then, really work through by a series of hypotheses that are, then, tested in various ways, be it physical exam to sophisticated tests and achieve a diagnosis for which there is, then, a therapy or a group of therapies delivered, which can range from prevention to the actual cure of a disease, such as many of the antibiotics that we use to treat infections. Flexner drove that and talked about the need for the work force that was necessary and the standards by how they ought to be trained.

Minnesota, in its wisdom, recruited Owen Wangenstein. Owen Wangenstein opened up the doors for the development of what one might call the medicine of today. He did it in a couple of ways. I should point out that he was the chief of Surgery and, as a point of fact, Surgery led this development in the Medical School. That's an historical fact. Owen Wangenstein led the charge, supported by the administration at the time. Owen Wangenstein stood for excellence. He standardized the training. He demanded that the residents learn the disciplines of research and that that was a part of their life. He did that by demanding that they spend time in the research lab and live with the basic scientists. There was a guy around at that time by the name

of Maurice Visscher in Physiology who had the same philosophy and the two of them began to form the team. At that time, many or most of the Surgery residents who went through this program actually ended up with Ph.D.s in Physiology. This was the beginning of the academic medicine track and it raised the standards of education to extremely high levels relative to where they were and created a different ethic and created an environment of innovation.

This leads to the second thing that Owen Wangenstein delivered. Today, we call it translational medicine. When I trained, we called it *going from the bed to bench and bench to bed*. You use a clinical problem to define your hypothesis. You develop the basic science to explain it and in the laboratory at the bench, you, then, convert that into the new treatments and you take it back to the bedside and you test it. That's what we, today, call the translational pipe line from basic science to new therapies. If you look at the Academic Health Center, that's what we do the best. We're a world leader in that and remain a world leader in that. That's really Owen Wangenstein.

Now, Owen Wangenstein began to get into other areas, so to the third characteristic. He began to ask the question, "Gee, shouldn't we be asking some questions when we try out new procedures on patients?" He, in effect, became the Internal Review Board [IRB], which is what we would call it today. Then, there was an environment of creativity that it existed at this time for innovation in patient care that I don't think you could ever duplicate because the regulatory environment wouldn't allow you to do that today. I'll leave it to the historians to figure out where the balance of the scales of justice should reside, so to speak, and make that judgment. I view myself as a reporter of my own observations as to what took place.

AP: Could you just expand for a minute . . . when you say the regulatory environment wouldn't let you do that?

FC: I'll give you an example. Many of the techniques of open heart surgery were done without what we would call today, IRB approval. There was a clinical need. There was a rational basis developed in the Basic Science Laboratory, then, in the Animal Laboratory, and if it worked, it was taken back to the patients. There was some communication with the patients, but, basically, one went ahead and did the surgery and Professor Wangenstein was the ethical oversight for whether or not that was appropriate to occur. That's what happened. So, all of the advances in open heart surgery, the development of the pump oxygenator, the techniques of valve surgery, everything today of modern heart surgery, grew out of Owen Wangenstein and the people that were here. I don't know if I can remember all of the names: certainly, [Richard] Varco, certainly [C. Walton] Lillehei, certainly [] Stewart. There's another guy, who I actually trained with at the Chicago V.A. [Veteran's Administration], but I can't remember his name. There's a core of these people that really did these and it all went from the clinical problem. Cecil Watson came in Medicine and Lewis Wannamaker in Infectious Disease, who studied rheumatic fever . . . those sorts of things. Much of what is in today's heart surgery came out of Minnesota.

The seeds for the next generation were laid here and that was in Robert Goode. He began to work in Immunology and set the stage for the era of the 1960s and 1970s, which I would describe as the era of transplantation and we'll come back to that.

At this time, the other piece that's probably important to talk about is the patient base was either self-pay—there was very little in the way of insurance—or they were what, at that time, were called indigent patients or what we used to call service cases. These were people that couldn't pay and needed care. If they would come to the clinic or the hospital, they would receive that care and most of that care was all delivered free. It was delivered free in the hospital. It was delivered free by the docs [doctors] and it was care that was directly delivered by the residents. Out of that grew much of what you saw in the MASH [Mobile Army Surgical Hospital] units that developed in World War II and the Korean War. Out of that came much of the innovation and surgical technology, surgical technique, medical technology, and the routines of academic services in teaching hospitals.

AP: May I stop you again for a clarification? I'm not following the relationship between the MASH units and the type of patients.

FC: It was the people that delivered the care.

AP: You mean it was the residents?

FC: Yes.

AP: Why would that . . . ?

FC: The residents would, basically, deliver care pretty much independently.

AP: Would that make it better? Would that make it more forward looking?

FC: I leave that for history to judge. But, that's what happened and everybody thought it was an incredible experience. It was the *see one, do one, teach one* era. That made for very independent thinkers, very strong entrepreneurial physicians who went on. The legacy of Wangenstein, I would describe as the [Sir] William Osler equivalent. Wangenstein did for American medicine in this era what Osler did in his era. He created this and brought order and brought standards in those kinds of things.

I should say the other difference at this time, when there were indigent care services, is there was a major participation by the community physicians at the University Hospitals. I remember the hospital I trained at and the programs at the State University of New York at Buffalo. My staff, when I was a resident, were almost always community docs. Community surgeons would come in. You'd call them and say, "I've got a case here. I need to operate." Then, they would come in every day or every other day and make rounds with you. So, there was a [unclear] input but really the residents called the shots on these services.

The years of the 1960s brought a lot of changes and I guess the continuance of innovation, I would say. One of the big forces that affected American medicine, particularly in academia, got formed in 1962 with the institution of the National Institutes of Health [NIH]. This was through

general medical sciences and child health and human development. I'll weave that in and out; but, that created the federal money that supported research. Right up until today, it is *the* dominant player for basic and applied research in the United States. It's really out of that effort that the money to promote creativity and innovation and the development of research as a true discipline became what it is today. It permitted the development, if you will, of the kind of medical schools we have today, where you can have large basic sciences. It got us beyond the primary disciplines of anatomy and physiology into what is today cell biology, molecular biology, genetics, genomics, preventive health and wellness. All of that stuff grew out of the investment that the federal government made in the National Institutes of Health and was put in fertile ground in the medical schools at the time and allowed the creation of the academic physician. There was one other piece in the latter part of the 1960s that I'll come back to in a minute.

The innovation theme under the Wangenstein era continued. In 1963, the first kidney transplant by Dick Varco. In 1966—I'm reading these; I don't have this stuff in my head—was the first pancreas transplant by Richard Lillehei. In 1968, the first bone marrow transplant by Bob Goode. Then, in 1967, the baton in Surgery was passed to John Najarian who made transplantation what it is today: in kidneys by expanding it to diabetics, by expanding it to children, by doing the clinical work that defined the immunosuppressant protocols, by again, marrying basic science with clinical science in the basic science translational pipe line, his marriage with Bob Goode in the creation of the understanding of the immunology of transplantation and the next generation of anti-rejection therapy, which is really what made transplantation a reality for patients. Mortality rates dropped. Organ survival improved and patient quality of life improved and we had the development of ALG [Antilymphocytic Globulin]. I'll come back to that.

At the same time, Family Practice was begun here. This was, basically, a state mandate. I want to say a few words about this because in the late 1960s and early 1970s, many things went into play that I'm trying to mention that have come to roost in the 1990s and have come home. Family Practice is another one. As a matter of fact, this was established as a discipline. The idea was that the Medical School had moved more and more into specialist training and we need to promote the family practitioner. This was the beginning of that [unclear] and what's more, Minnesota had a rural problem that it needed to fix: it needed more docs in the community. So, we'll put some state money in. In return, we want you to train the people that practice in rural Minnesota. In fact, Family Practice did that. It became the largest family practice program in the country, but it was set up in a very interesting way. Family Practice was set up as a series of satellite affiliates where each one that was established was affiliated with a local hospital, so, you've got one right next to the Methodist Hospital. Those primary care deliverers referred their patients to those local hospitals, not back to University Hospital. So, the fact that we had the largest primary care training program in the country was countered by the fact that those patients did not come to University Hospital. At this time, in the 1960s, remember we're still primarily fee-for-service. Third party payments are just beginning to come in with Blue Cross-Blue Shield. To be real honest about it, the clinical chairs, at that time, and the hospital, at that time, really didn't feel that they needed to support the development of primary care inside the hospital and

that the hospital ought to become a speciality hospital. So, they didn't make it really fertile ground for Family Practice to come there and work. Have I made that point clear?

AP: Yes.

FC: This comes back to roost later on.

B.J. Kennedy became the father of medical oncology, established this great relationship with the Masons, which still goes on today in the Masonic Cancer Center. Bone marrow rapidly became a nationally recognized transplant service along with the kidney and, as you know, now liver, pancreas. This environment of creativity was here and it became fueled, now, by the creation of Medicare in the late 1960s.

What Medicare did was it guaranteed a source of revenue for all those uninsured patients that we used to call indigent. This transformed medical schools in a very short period of time because you could now have faculty deliver care to those patients and generate a source of revenue that supported medical schools. You now have here the creation of another force that came back to roost in the 1990s because medical schools grew and they grew into this incredibly productive research machine, clinical training machine, and educational machine. They were the repositories of the innovation of the new surgical techniques, the new medical techniques, the clinical research knowledge and everything emanated from the teaching hospital, eventually, down into the community. So, as the techniques of open heart developed, they, then, moved out into the community as they became more routine, until, today, you can get a coronary artery bypass in any really good community hospital. That all used to happen at teaching hospitals in the 1960s and 1970s. So, medical schools grew. They hired faculty. They trained faculty. NIH was coming in. You can see how those forces begin to come together.

What also happened inside universities is this clinical revenue stream that was being used to support education and research and was earned by the faculty of the medical school and had to be given to the medical school led to the development of regents' policies on private practice, but more importantly, led university administrations to sort of take the position, we don't need to put as much of our state money over there because they have a source of revenue they can earn. This was the beginning of using clinical revenue to support the education and research functions of the medical school. So, that sort of led to a bunch of other changes. As the full-time faculty grew and indigent patients were now covered by insurance, there was less need for community docs to be involved in the hospitals and the community docs got forced out of the hospitals. The town/gown conflicts got created and what's more important, the era of isolationism began where medical schools and teaching hospitals began to become more and more isolated from the care delivery system, i.e., the community. Those problems sort of began.

Inside the medical schools, the [unclear] of the clinical departments developed. At that time, to be a chair, one of the primary criteria was you've got to fill up so many beds in the hospital and do so many procedures. You were the clinical leader. So, you brought in patients and you generated a lot of revenue and deans were weak. You can sort of see the seeds being set here

for what happened in the 1980s and 1900s. Again, a lot of private philanthropy—the Hill Foundation . . . you could sort of go on there—and, finally we have the development of the Academic Health Centers, which was really forged out of a partnership between the legislature and the Board of Regents and, eventually, the first vice-president for Health Sciences, Lyle French, who really developed Health Sciences. In other words, if the “U” took advantage of the federal funding opportunities and Health Sciences was responsive to the needs of rural Minnesota and primary care, the state would make an investment in Health Sciences. That was the quid pro quo. Legislation . . . I’m not going to go into this. I’ll just mention it. It’s the Hill-Burton Act of 1964, the Professional Education Assistance Act of 1963, the Health Manpower Act of 1968, and all of those sorts of things.

In the 1970s, the innovation continued. That’s sort of a theme, this theme of the development of new products, of new drugs, of new devices, with the eventual evolution of the Medtronics and the St. Judes and the creation of Medical Alley, the bio-implantable pumps, artificial blood, heart transplantation, ALG, kidney transplants in infants, bone marrow transplants, etcetera, etcetera, just enumerable numbers, and the Medical School being recognized as one of the top in the nation. All of the buildings got built, I think, that you see here today. Also, the Rural Physician Associate Program [RPAC] got developed . . . creative, innovative, thought to be ahead of its time. Now, I think most people recognize it as a quality standard to be envied and, in effect, discovered the formula that if you want to put docs in rural Minnesota, first, you recruit them from rural Minnesota, then, you train them and, then, they’ll go back there. That’s in fact, what RPAC has done. It’s been incredibly successful and has now been extended into the Rural Health Program for today.

AP: That’s the program where a part of those students spend two years at Duluth?

FC: They spend their third year, about forty students, in various communities around the state of Minnesota. They, literally, live with primary care family practitioners primarily. They go to the clinic. They go to the hospital. They work with them. Then, they’ll take some structured rotations, like, they’ll take a month of surgery or six weeks of surgery. Then, they come back and they finish up their fourth year. That’s the essence of the program. The Rural Health School sort of compliments that. It gives them the opportunity to go back into the community for student and, eventually, residency training.

Now, if you sort of follow these themes to their logical extension, you’ve got the real development of excellence in research. You’ve got productivity like this country has never seen before and, as I say, you’ve got the development of big time device technologies supporting the economy of the state of Minnesota. This relationship with the private sector continues today.

Several things began to change in the 1980s. I’ll say it this way: you had the development of stronger and stronger department chairmen, who were all doing good. They were developing new technologies, new drugs. They were translating new research into new clinical care. Mortality rates were plummeting. Success rates in diseases were what people had never seen before. The understanding and the development of the new molecular revolution happened. Except, we

missed the boat and we didn't make the investment in molecular science. We got left behind on that one. People didn't think it was necessary, for whatever reasons, and some of our best were recruited away and we didn't keep them. That's a process we're now undoing in the 1990s. I'll sort of come back to that.

The regulatory environment began to change. There were new regulations on clinical research and how clinical research could be performed, and the role of institutional review boards, and the kind of oversight that needed to be on test articles, and the development of the Phase I, II, and III testing for drugs by the Food and Drug Administration, and the federal government's regulatory approach to grants, put in more and more of the regulations for how grants ought to be managed. I'm going to come back to that later on. This is just all that was happening.

The other force that was happening was the managed care marketplace. The force that became active there is even though managed care says, in its rudimentary form, "We're going to be responsible for the health of a population, and we're going to promote health and treat the disease, and we're going to drop the costs and we're going to do it in a cost effective manner, and we're going to add value, which means not only reduction in cost but an improvement in the quality of care, and we're going to do that by managing how the care is delivered using such tools as evidence-based medicine and best practices." That, in a nutshell, is what managed care is about. This marketplace began to become equated with cost reduction and managed care began to say, "We're not going to pay for the cost of education. We're not going to pay for the cost of research. We're only going to pay for the cost of care." In short, there's no portion of the premium dollar for education and research support. In short, University Hospital, you're going to have to compete with community standards if you're going to get contracts for patient care. I said something very important there. I said the word "contract". What happened in the managed care marketplace is consolidation of the delivery system until, right now, 80 percent of it is controlled, basically, by four groups who put out contracts for patients that determine where patients can and can't go, for what providers, and at what cost that's going to be, and they determine, if you will, the basket of care delivery goods that they will pay for, and they'll determine when and how they pay for a new therapy or if they pay for a new therapy. What happened was that the university had such a good brand name that nobody felt really compelled to change it. We were still able to get contracts. We had the high-end market in transplants and [unclear] blood. We didn't do much in the 1980s and until well into the 1990s. So, I would describe those forces as coming to roost.

There began to be more and more restrictions placed on physicians on how they could interact with hospitals and care delivery systems through the Medicare laws. Mind you, Medicare did one other thing that's important to understand. Medicare, in the early 1970s, was revised so that it began to pay for resident and fellow education. That was dominated by hospital-based training and it was paid for by a complicated formula, so much per head per Medicare bed, etcetera, etcetera. So, graduate medical education and the big expansion of specialists happened really as a direct result of the Medicare law and the ability to pay for those residents to take that additional training. So, they would do their four years of undergraduate. Then, they would do for years of medical school. Then, you had to do a minimum of three years of residency training

to get licensed. Now, the state of Minnesota says you can get licensed after a year of internship, but you can't get credentials in a hospital without having your boards. The minimum boards is in family practice and that's three years. Internal medicine is three years. Specialist training, such as cardiology, is in addition to internal medicine training; it's another three years. So, it's important to understand that. At that time, we had about 1200 to 1200 residents and fellows, 880 medical students. In fact, at that time, the medical student class size was actually reducing. That was the Shelley Chou Committee. I can't remember . . . the numbers went from 280 a year to 240, because it was obvious there were too many docs going into the system. The regulatory climate became more enhanced. There really wasn't a program inside the university to deal with it, at that time. The culture here was one of relying on trust that appropriate conflicts would be exposed and would be dealt with by administrative measures.

I think that sort of opens the door for getting into the ALG piece and that sort of played itself out in the 1990s. I'm not going to replay all of that. I'm going to give you my own views on that whole thing. I think, at the time, had the case report forms been filled out and turned in and had there been a culture and an environment that promoted that and saw that it got done and provided oversight, I think it could have got done. I think it was probably resolvable in its early stages and, then, for a variety of reasons, some of which I understand and some of which I don't, it got blown up into a different series of proportions and the rest is sort of history. Eventually, it sorted itself out. Just to continue that into the 1990s, the university got put on a special designation as exceptional, had its expanded authorities removed, a lot of court activity. There was, finally, a settlement for \$32 million and, hopefully, this fall, we've done enough with the new process of grants' management that we can come off designation and have a return of our expanded authorities.

Out of that, I think, the institution learned some lessons. By that, I don't mean just the administration. I mean the faculty and the staff of the institution, the university community. I would describe those lessons as: (1) there must be oversight and accountability; (2) there has to be clear definition of roles and responsibilities and who is doing what; (3) there has to be very clear consequences for non-compliance and the resolve to enforce them; (4) there has to be the appropriate tools and, in today's parlance, I would say, dominated by electronic tools to permit the process of research to happen in a reasonable way, and for the administration to exercise its oversight authority and to take appropriate action where necessary. The fact of the matter is, if you don't do that in today's environment, you'll be disbarred from participating in the federal programs of grants and for that matter of patient care, because the same rules apply to clinical research.

I think what that means is that in the 1990s, we've evolved a very different role for deans and department heads. In the past, there was never any emphasis put on management skills. I think the lessons and the demands, if you will, of the 1990s and into the next century is that those jobs will have major management and administrative functions, just as the chair of Surgery no longer spends 90 percent of his time in the operating room. If he can spend 25 percent of his time in the operating room, he's doing well. I make no judgment as to whether this is right or wrong.

It's what we need to do for the university to survive and to maintain this top-class research enterprise and cutting-edge clinical care, etcetera.

The managed care effect began to hit as integrated health systems began to be formed and at this time, remember, there are no trade secrets in medicine. You make a discovery, you pass it out into the community. So, once we developed the skills of heart surgery, we trained the residents and fellows that now practice at North Memorial, Methodist, Abbott Northwestern, and all the other sites that do open heart surgery. We trained our own competition, which is not something a normal business would do. But, we're a public land-grant institution and that's our mission.

So, increased competition for patients to go elsewhere, the managed care attitude that we're not going to pay the extra margin for education and research, and, very frankly, an attitude that we don't need to really compete in the marketplace because the university brand will carry us led to a hospital that probably began to respond too late in going from a hospital to a health system and in the ability to manage its costs. The point I'm trying to get at is these incredible numbers of external forces, which the university had to learn how to respond to. We were way ahead of the pack nation-wide because of the degree and the rapidity with which managed care matured in our marketplace. If you look at these historical forces, we had become progressively separated from the care delivery system. Now what happened is because of the reductions in patient referrals to the university docs and University Hospital, our ability to maintain faculty competency, our ability to continue clinical research for which we had international fame, and our ability to train residents and fellows became jeopardized because we didn't have the patient base and, ultimately, the ability of the Medical School to finance education off clinical revenue began to go away and the house of cards began to crumble.

If you put this in the context of the tenure debates and the whole process of tenure and the other force which was the reorganization of the Biological Sciences, you now have this incredible turmoil of change that's been going on in the university, but, primarily, in the Academic Health Center and, primarily, the Medical School over the last five or six years to the point where it's a miracle we survived—in my opinion.

A few words about the Biological Sciences . . . It became very clear that biology was spread all over the university. We had five departments of Biochemistry. We had a separate school of Biological Sciences. Most of the poop, if you will, was in the Medical School. Ninety percent of the NIH money was in the Academic Health Center and 90 percent of that is in the Medical School. This is where the research happens. This is what drives the engine. It's not to say the other health professional schools aren't important. They clearly are; but, the Medical School is really the engine of the Academic Health Center. It's one of the three major sites that make up the university in terms of its volume. If you took the Medical School, the Institute of Technology, and CLA [College of Liberal Arts], you've got 80 percent of the university. You can argue about which of those three is the bigger piece. I don't think I want to get into that. That's a different issue. All the way along, the administration borrowed from Peter to pay Paul. The indirect cost that the Medical School earned on NIH went to form and seed in the Institute of Technology. That got it on its feet. In the early 1970s, there was some support that came

from CLA to support the Medical School. In return, the Medical School has paid that back a thousand times over.

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[Tape 1, Side 2]

FC: . . . that the clinical revenue is what was relied on and the ability of the Medical School to generate research dollars is what was relied on to support the Medical School. Clinical dollars began to dry up. It also became apparent that this disconnect of the educational system from the care system was a real problem because we were turning out a product that wasn't quite matched to the care delivery system. It wasn't into team care. It didn't have a lot of tools of evidence-based medicine. It wasn't in the interscholastic relationships. It wasn't promoting preventive health and wellness and a whole host of other things and we needed to fix those things.

There are a whole bunch of things that went into place to respond to this. We sold the hospital to Fairview and established a relationship with them where they manage the hospital and we still control research and education. That's actually beginning to work. The hospital is solvent; it's not losing money. In the first six months of 1999, the hospital is not only *on* operating budget, which means it's turned a profit, it's above its operating budget by almost \$1 million. Number two: we went from eighteen different practice plans in the clinical departments to a single integrated group practice that is now beginning to compete effectively in the marketplace at marketplace benchmarks and is using marketplace incentives. So, mind you, the docs switch operating systems. They go from their lab where they operate on one system to perform research into the clinic where they're forced to operate in a cost effective manner meeting community benchmarks if they're to get contracts. The fact that we now got the state health plan select contract and the business coalition contract are just two tangible examples of that. We reorganized the Biological Sciences—I never actually finished this—where the Basic Sciences and the Medical School completely reorganized combining with the other university departments and we now have new Basic Science departments that are discipline oriented. You can see this turmoil doesn't end. All of this has to have a new structure that is guided by the new functionality. So, that's the third big piece. Number four is a complete administrative restructuring—which we're only about half done with—making the processes that support the programs efficient, effective, service oriented and responsive to the programs. That's now going on at a university-wide level called Enterprise. The whole grants management thing . . . I mentioned before that the implementation of that is moving along very well. That's the fifth response. The sixth response, the move into the foray of interscholastic education is beginning. And the seventh big strategic objective is to develop a source of funds to pay faculty who teach with a revenue stream that's designed to pay for teaching. The first piece of that, we actually got this year in the Education and Research Endowment that was set up out of the tobacco money by our legislature and governor. For that, they deserve a national recognition. It was innovative and it was bold and it wasn't easy. [laughter] This is the first time we actually will be able to pay the faculty in the clinical departments education dollars for education work. It's the beginning. We've got a long way to go. It's going to take several years to work all that out.

The other thing that happened is the faculty in the Medical School shrunk about 18 or 19 percent over the last four or five years. Now, you'd think that would create a positive cash flow for the Medical School; but, you have to understand the managed care effect is reducing the clinical revenue base at twice the rate at which the faculty are contracting. So, there was still a deficit in the Medical School.

The budgets are now balanced. The schools are solid. We're now able to recruit in areas of emphasis and this is point seven in this strategic plan that was laid out. It's now become very clear, by the work of the faculty, where they think we ought to be going in research, where they think we ought to be going in education. We're now successfully recruiting the top shelf people to lead those charges. That clearly says we were contracting in other areas and I think that that's absolutely true—mostly good. I think we've contracted in some areas we're going to have to rebuild. Pediatric Neurology and Cardiology are two examples. I think those processes are underway. I think the morale is better than it was a couple years ago. We've still got a long way to go, but I think this is well on its way, this place, to being what it was, being a leader, and being a very innovative producer of new technology, new therapies, new treatments; but, it still needs a lot of work.

Did I cover it?

AP: You sure did.

[End of Tape 1, Side 2]

[End of the Interview]

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