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Study Trip to Vanderbilt University Medical Center
November 29 & 30, 1999

Study Team:

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Introduction

Led by Harry Jacobson, M.D., Vanderbilt University Medical Center is intent on creating what could become a realistic model for academic health centers in the age of learning. Jacobson combines an entrepreneurial business approach (including creating new businesses) with a strong commitment to address variability of practice and to develop evidence-based medicine. The goal is to make health care both effective (better outcomes) and efficient (utilization management). Furthermore, VUMC has strengthened its research mission. Long-term research foci are neurosciences, structural and developmental biology, and genetics.

Jacobson is supported by a strong leadership team including William Stead, M.D., Director of the Informatics Center, who has led the development of an innovative IT system that includes order entry (WIZorder), indications when medicines are wrongly prescribed, and an on-line medical record, developed to allow data mining for outcome studies and utilization management. VUMC is building the IT system itself rather than contracting to software firms. They are integrating legacy systems and combining clinical, financial, and administrative data. Paul V. Miles, MD, Chief Quality Officer and Robert Dittus, MD Director of Internal Medicine are leading the education process toward evidence-based medicine and shared processes. VUMC is creating an Institute for Health Care Improvement integrating the schools of medicine, business, law, engineering, and nursing. The foci will be education, policy, health systems research, and operations.

However, VUMC has a ways to go to realize the vision. The major gaps reported have to do with service to patients, accountability and evaluation of

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performance. However, interviews with and surveys of the clinical chairs show considerable variability in their acceptance of the vision.

Vanderbilt Medical Center

The newly organized Vanderbilt University issued MD degrees to 61 doctors in 1875. Early in the 20th century, Vanderbilt University School of Medicine received large grants from the Rockefeller family, and from Andrew Carnegie and his foundation which had funded the Flexner study and report in 1910. These funds enabled VUSM to carry out Flexner's recommendations and today VUSM is a major academic health center which includes the School of Medicine, School of Nursing, and graduate programs in pharmacology, biochemistry, molecular physiology, and biophysics. There is a MD / Ph.D. program for students aspiring to a career in academic medicine and medical research. The School of Nursing and the Owen Graduate School of Management offer a MSN / MBA degree to prepare nurses for high level management roles in health systems. There is also an MD/MBA program.

The Vanderbilt Medical Center is part of the university campus a mile and a half from downtown Nashville and includes a free-standing Psychiatric Hospital, a Rehabilitation Hospital, and ground has been recently broken for a third medical research building (which will have a combined academic, clinical, and engineering focus) and a free-standing $165 million Children's Hospital. The Vanderbilt Clinic houses more than 85 specialty practice areas, clinical laboratories, a center for comprehensive cancer treatment, and a day surgery center. There is a Veterans Administration Medical Center on campus as well.

Within the large Medical Library, housed in an award-winning modern building, is an active and innovative Informatics Center which is a federally designated Integrated Advanced Information Management System (IAIMS) test site. The medical library staff guide the development of VUMC's web pages and the Informatics Center partners with researchers in the Division of Biomedical Informatics, which has 16 people, and the Information Management Department to innovate the delivery and use of health information to Vanderbilt and the larger regional community.

Dr. Stead reports they are using the data to transform clinical practice in two major ways. 1. Collaborative Care Pathways. All of the care teams study the sources of variability and develop plans for improvement. This has led to 40-50% cost reductions, increased positive outcomes, and reduced morbidity and mortality in certain areas. 2. WizOrder. This system has led to the elimination of "some absurd patterns of ordering". The ordering system now covers all orders, not only spot orders as in many medical centers.

VUMC is one of six Veterans Administration created Quality Scholars Program sites. In many of these sites the quality initiative is nursing-driven, VUMC is involving the doctors specifically because of their scholarship paradigm, and has convinced many that quality and IT are legitimate topics for scholarship. VUMC is also creating a Center for Quality Research. Up to date quality processes will be built into the new Children's Hospital.

VUMC is active in technology transfer from its medical research, informatics and clinical practice as evidenced by the spin-off of nine biomedical companies in recent years. Proctor and Gamble has donated to VUMC $43 million of intellectual property in the form of almost 100 patents covering novel cyclooxygenase II antagonists.

The School of Medicine receives 5,000 applications each year, and admits 104. Its student satisfaction ratings have been the highest in the country for a number of years. The Graduate School is one of only ten in the country with an Interdisciplinary Graduate Program; 18 percent of graduate students are from underrepresented minorities.

VUMC has recently (1998) developed an alliance with Meharry Medical College. The goal is to improve health care in Nashville, particularly to the underserved and disadvantaged. The alliance also includes joint courses, appointments for Meharry faculty at Vanderbilt and vice-versa, and joint student leadership.

VUMC has an active School of Nursing and nursing is integrated into the functioning of the medical center. Marilyn Dubree, R.N., the Chief Nursing Officer and Director of Patient Care Services, directs the operation of the patient care centers which report to her like a COO. Since May, she has hired 275 nurses through aggressive recruitment including job fairs and increasing nurse salaries. Dean Colleen Conway-Welch says the School of Nursing recruits among retiring military officers and convinces many that advanced practice nursing is a challenging and worthwhile second career. Advanced practice nursing requires a MA, training in evidence-based clinical practice, and how to understand data and the IT system. The School of Nursing graduates 200 advanced practice nurses a year, 12% are male (vs. 6-7% nationally), and 12% are minorities (vs. 6-7% nationally).

The medical center dominates Vanderbilt University. Of $1.5 billion total revenue $1.1 billion comes through the medical center. Of 13 thousand university employees, 10 thousand are at the medical center. VUMC leadership has been financially successful. It avoided the mistake of buying practices. Its 661-bed hospital has been profitable, with an 80 percent occupancy rate. The hospital negotiates aggressively with payors. The financial IT system shows the cost structure for each DRG, allowing them to attack the top 15 cost areas and the

supply chain. Hospital revenue growth was 9 percent last year. Uncompensated care is only 5 percent, which is low compared nationally. VUMC investments are doing well. Income this year before depreciation and taxes will be between $24 and 30 million. Net revenue growth was 16 percent last year.

Managed care has only been in the Nashville region for about six years, and there is little capitation in that market, which is mostly fee for service. The Vanderbilt Medical Group, an operating but not a legal entity, was created several years ago as hospital admissions started dropping. VMG's revenue has grown recently at 8-9 percent annually. The practice is profitable and provides a 5 percent Dean's tax for education, 5 percent to the Vice Chancellor and 10 percent for infrastructure. Physicians incomes compare well with national averages.

Creating the VMG has been more difficult than expected. Some doctors wanted a separate legal entity that would negotiate with the hospital. Independent arrangements can still be pushed through by aggressive doctors. For example, a surgeon got a separate company set up, and while the VMG runs it, there is currently no role for the department which supplies the resources to the company. There are also larger administrative systems that have to be worked out, for example, the billing system mixes departmental and VMG revenue. However a billing team has been established to study national best practices.

VUMC is focusing on issues of access and the patients' experience. They have a Secret Shopper program and customer satisfaction metrics that have highlighted problems in getting appointments, signage, and the need for a single phone number to make front-end entry easier for patients. Such efforts have shown results. On a recent Nashville consumer survey VUMC moved from 3rd to 1st.

Researchers receive rebates of indirect costs based on success in generating research funds. Furthermore, Jacobson has a $1.5 million pot, called the Discovery Grant Program, that he uses to fund promising and high risk innovative research. The first million yielded $8.5 million in NIH grants. Vanderbilt is currently twenty third in NIH grants, as research revenues increased last year by 26 percent. However we were told by one skeptical doctor in the research infrastructure that since NIH has been doubling its funding of research most research centers are receiving increases and VUMC today, like several years ago, is still 23rd. The goal is both to reach the top ten and to grow spin off companies from the knowledge generated. With Jacobson's focus on what he calls the "wasted stream of intellectual capital," of ideas produced by the faculty but not used, the number of patents has increased three fold.

The Study

We interviewed twenty-four leaders over a period of three days. We also received 35 gap surveys, including surveys from 14 clinical chairs, eleven of whom were not interviewed.

The survey results (Appendix C) show that the main gaps for both VUMC executives and clinical chairs include patient service, holding people accountable, and performance evaluation. However, while the executives indicate high importance and gaps in the use of clinical pathways, utilization management by physicians, and learning from best practice, the chairs consider these elements less important. Both groups note a gap in developing trust.

At the top, Jacobson and his team are trying to move VUMC to the age of learning. They have had notable successes in addressing variability. The use of pathways has cut length of stay for prostate surgery and other conditions. But the clinical departments are still essentially feudal fiefdoms, and some chairs still seem to be in a craft mode of production. Furthermore, the Vanderbilt Medical Group (VMG) is essentially a virtual organization. It has a CFO for billing and rather powerless Chief Medical and Chief Operating Officers. Up until now, the Dean has had no direct relationship to the group practice, but there are plans to change this with the incoming new Dean.

The resistance to the vision by faculty is both economic and ideological. Some physicians, such as orthopedic surgeons, want to maintain an “eat what you kill” approach to income maximization. Others argue that Jacobson’s emphasis on attacking variability will result in “cook book medicine.” We also heard complaints that Jacobson explained his strategy too much in terms of the economic benefits, without sufficiently emphasizing what is best for patients.

While nurses play a significant role at the VUMC, there is, said one nurse, still evidence of an “MDolatry". Consequently, there is a program for doctors who evidence “trended behavior” of disrespecting the role of nurses as full partners in health care. These doctors are diplomatically steered into educational modules, and if necessary into counseling. Nonetheless, nurses not only are important in clinical care, they do much teaching. In addition, there is a collaborative group of doctors and nurses who study and direct how to facilitate advanced practice nursing into the medical center, which Dean Conway-Welch states may be the only academic health center in the country to do this. In the clinical area, another nurse was frustrated by the cutback in meeting time for nurses because of stringent financial controls.

The Leadership of Change

Harry Jacobson, MD has been Vice Chancellor for Health Affairs since late 1997. He has been a professor and chair of Nephrology since 1985 when he came from Southeastern Dallas. He was proceeded as Vice Chancellor by Ike Robinson, MD who is credited with putting VUMC on the road to the first tier with an emphasis on both quality and growth.

Jacobson combines a medical and research background with strong entrepreneurial competence. He founded a company, Renal Care, that went public. He believes the medical center can gain income from new businesses and so far, there are about nine in the works, including, notably, Web EBM [Evidence-Based Medicine] which is partnered with Duke, Emory, Washington University (St. Louis) and the University of Oregon Health Sciences Center.

Jacobson's leadership style was described to us in terms of his strengths and weaknesses.

According to those we interviewed, Jacobson's strengths include his vision, business understanding, openness, and infectious optimism. One executive said, "He is expansionistic, outward looking and optimistic. And he responds to good ideas." He is credited as being an excellent recruiter. However, some of the leaders criticize him for sometimes being too optimistic, promising too much, and acting too quickly. A departmental chair said, "He's very impulsive, sure of himself. He thinks out loud." An executive said, "Harry is unable to resist solving problems, so people go directly to him. His actions sometimes undermine his vision." One person said Jacobson was "too nice, he doesn't demand enough accountability." Another said he was "too intimidating" meaning "people are reluctant to challenge him." Another said, "he doesn't encourage negative feedback." Another said, "he creates cognitive followers, not emotional followers."

We see Jacobson as an exceptionally competent leader who is trying to bring VUMC to the forefront of academic health care organizations. Of course, every leader has particular strengths and weaknesses. But Jacobson's leadership challenge is not one of changing his personality but rather one of dealing with chairs who resist change.

One department chair said: "Harry presents an exceedingly strong vision. Whether it can be achieved is another question. He is often ahead of the crowd and impatient when they don't keep up."

While Jacobson has strong supporters among the chairs, some are not convinced by Jacobson's vision. And as one executive told us, "The source of power here is the chairs. They need to agree."

The chairs' resistance can be seen in relation to the quality initiatives and service improvement. Chairs are not convinced about evidence-based medicine. One chair rejected pathways as ignoring the fact that "some physicians do the same thing differently" and "some teams are good while others are not." Chairs resented Jacobson's emphasis on efficiency and cost savings. Said one, "Harry believes that the entrepreneurial spirit will lead to the best care. I'm not sure about that."

As for service, one executive of the practice asked, "Do the chairs really want to be a group practice or a collection of fiefdoms?" Chairs have signed onto the slogan of "Our patients come first!" but according to an executive, "they don't walk the talk." He went on to say that patient access is not sufficient. There are high rates of physician cancellation. Patients get little help in scheduling tests and visits to specialists.

There is no departmental ownership of the VMG. Most departments treat it as a medical service organization rather than a multi-specialty group.

Tools for Change

A leader such as Harry Jacobson has four kinds of tools he can use to facilitate change. These are:

- Incentives based on measurements
- Structure - who reports to whom
- Education - using information to increase understanding and to convince people that change is necessary
- Recruiting the right people and replacing the wrong ones.

Jacobson is using all these tools.

Data-driven Systems

One of Jacobson's first initiatives as Vice Chancellor was to get an accounting firm to restructure Financial Services into a Financial Department. He put CFOs into the hospital and the medical school since they only had billing clerks before, and COOs into the clinic and hospitals. Each of the three hospitals now has a CEO. Jacobson points out that many hospital CEOs came up through nursing, but often these administrators do not have the right skill set especially as it relates to financial issues. Jacobson's CEOs get along with doctors and understand the numbers.

Next Jacobson hired a financial analyst and made sure that finances were tracked closely and communicated. Every third week each month there is a "Numbers Day" in which Jacobson and his team go over all the financial data from the previous month. While his intent to build data-driven systems is clear, he admits, "We're in transition. We've done a funds flow analysis in order to gainshare with the departments. We have divided into patient-care centers (business units) and each does an annual plan. The main hospital is the cash cow, we move $35 million a year into the clinic to support the cost of practice. All departments are at break even or profitable now. The Chairs are required to operate their departments in the black. Its a requirement. How? We use productivity data systems, and rightsizing. If we can't be first or second in our market we rightsize it for its educational purpose."

Jacobson is also championing systems to reduce variability in two specific ways: variability of physician practice and issues of utilization management.

Utilization management is addressed by numerous means. One is using WizOrder to control variability of ordering with regular graphs per test, for example for LCBG, Chest X-Ray, or EKG, showing reductions over time, with these indicators discussed regularly in departments and larger meetings. The process of involving doctors in utilization management has three phases: first the department or clinical leaders make verbal requests, "control costs"; after several months of ordering data gathering, there is a focused review of ongoing daily orders and discussions with the doctors; finally several months later standing orders are eliminated and doctors are allowed to order one day only. Through this process over a period of a year, LBCG's went from approximately 115,000 / month to 41,000 / month. Another means of addressing variability in utilization management is to have doctor and nurse teams look at how to achieve better, standardized, more cost efficient care pathways.

Incentives

Jacobson has instituted an incentive system for the top thirty VUMC leaders, which will also be employed this year for the chairs and center directors. The top tier managers can gain 30 percent over base pay; the second tier 25 percent; the third tier 20 percent and the fourth tier 15 percent. These increases are based on four or five measures they can influence. For each goal there are three ascending measures: threshold, target, and reach. For example, one goal for the CFO is to increase contract rates over 1999: threshold is 8%, target is 9%, reach is 10%; a senior executive has a goal of completing a redesign of access: threshold is by June 30, target is by April 1, reach is by February 1. On the educational and clinical side, examples are the Dean has the goal of increasing under represented faculty: threshold is 2-4 new faculty, target is 5-8, reach is nine or more; a physician leader is to complete a perioperative redesign: threshold by April 1, target by March 1, reach by February 1. On the

research side: the head of research is to increase the number of interdisciplinary grants: threshold is 2-3, target is 4-6, reach is more than 6.

The chair of Medicine, Eric Neilson, MD has instituted an incentive system for his department of 125. Individuals are required to decide that they will spend 80 percent of their time in either clinical or research work and 20 percent in the other activity. He believes this focusses activity and allows measurement in terms of RVUs, grants and publications. At the present time, 28 faculty members have 85 percent of NIH grants.

However, we were told that all the other chairs reject Neilson's approach and that it has alienated some members of the Department of Medicine. However, the Department, which chronically operated in the red, now operates in the black. One chair argued that morale was eroded by Neilson and that chairs should determine salary on the basis of "the whole person." Measurements should be used as guidelines, but no more than that. Of course, while this approach might prove more humane than pure measurements, it also increases the feudal power of the chairs.

One chair cautioned that monetary incentives alone would not change convictions. He and others noted that Jacobson has appealed to peoples' minds but not their hearts.

Structure

Jacobson believes that having the Chief Medical Officer of the VMG report to the new dean, Steve Gabbe, MD, formerly chair of ObGyn at the University of Washington may make a significant difference in moving the faculty. Since no one has effectively evaluated Chairs, he will have this be part of the new Dean's role. Jacobson says "The Dean is the CEO of the faculty. I'd like my position to be the full-time Chairman of the Board. I need to put together a management team to stay on target with the plan, let them run with it, and develop relations with the community. My role is strategy and the strategic plan, conflict resolution (which can not be done by the President of the University who does not know the medical center), outreach, raising money, and politics (going to Washington)."

However, this assumes that chairs do not make end runs to go directly to Jacobson. It also requires that the new dean has the ability to educate and persuade.

Education

Jacobson counts on information and measurements to educate, but in our experience physicians need a lot of dialogue that deals with their concerns. One

chair stated that physicians need education to use evidence. They need to learn how to think in new ways.

Without dialogue with physicians, leadership will be unable to deal with the resistance to evidence-based medicine. Dialogue shows the nature of this resistance. If it is an expression of the craft tradition, this calls for different leadership action than if there is merely a lack of understanding. Also, the resistance may express legitimate issues that need to be addressed and may modify the approach to change. For example, at Intermountain Health Care (IHC), dialogue led to simplifying processes.

Dialogue is the only sure way to educate clinical chairs who are not convinced by the campaign against variability of practice. To be sure, it takes time. But it is well worth the investment.

Recruitment

One clinical chair who fully supports Jacobson's vision believes that in the past chairs have not been chosen for leadership capability. While this has not been such a problem in the craft world of master - apprenticeship relationships, it becomes a major problem in the age of learning. Chairs need to combine clinical and research understanding with business and communication competencies. This chair does not believe that traditional chairs can change. He is convinced that chairs are needed who fit the new profile.

One executive told us "many doctors feel powerless in today's health system and grasp for whatever gives them a sense of power to protect themselves." Jacobson believes that the education of the next generation of doctors in evidence-based medicine is what will fully transform medicine. He is beginning the foundations for that culture today. How vigorously should Jacobson pull his organization into the future? One physician executive said he needs to go slowly: "If Harry forced people they would become disaffected and leave." Another of the key leaders of change said, "I have to trust Harry on how fast the ocean liner has to turn. And I believe I can trust Harry to do what's right. He's always been right."

List of people interviewed at Vanderbilt University Medical Cen-

Harry R. Jacobson, M.D.
Vice Chancellor for Health Affairs

Joel G. Lee
Executive Director, Medical Center Communications

J. Richard Wagers, Jr.
Senior Vice President and Chief Financial Officer

Norman B. Urmy
Executive Vice President, Clinical Affairs

Paul V. Miles, M.D.
Executive Director & Chief Quality Officer

Eric G. Neilson, M.D.
Chair, Department of Medicine

G. Roger Chalkley, D. Phil.
Senior Associate Dean Biomedical Research, Education & Training

Deborah C. German, M.D.
Senior Associate Dean of Medical Education

Robert P. Feldman
Associate Vice Chancellor, Medical Center Development

Mark L. Penkhus
Executive Director & Chief Executive Officer, Vanderbilt University Hospital

Robert S. Dittus, M.D.
Director, Division of General Internal Medicine

Phyllis Ekdall
Chief Financial Officer, Vanderbilt Medical Group

Mark A. Magnuson, M.D.
Professor, Molecular Physiology, Biophysics and Medicine

Lee E. Limbird, Ph.D.
Associate Vice Chancellor, Research, Health Affairs

Marilyn A. Dubree, R.N.
Director, Patient Care Services & Chief Nursing Officer

John E. Chapman, M.D.
Dean, School of Medicine

David R. Posch
Chief Operating Officer, Vanderbilt Medical Group

John S. Sergent, M.D.
Professor of Medicine and Chief Medical Officer

Craig Carmichel
Director of Finance, Academic & Research Enterprises

William W. Stead, M.D.
Associate Vice Chancellor, Health Affairs
Director, Informatics Center

Colleen Conway-Welch
Dean, Nursing School

Martin Sandler, MD
Chair of Radiology

Arnold Strauss, MD
Chair of Pediatrics

Stephen Entmen, MD
Chair of Obstetrics and Gyneology

Gap Survey Used at Vanderbilt University Medical Center

These are elements of a modern health system. Consider each one.
How **important** is each one for the success of your system?
At what **level today** are you achieving each of them?

	IMPORTANCE (low … high)	LEVEL TODAY (low … high)
Strategies		
• Patient service is our highest priority.	1 2 3 4 5	1 2 3 4 5
• Population needs and the market shape our clinical programs.	1 2 3 4 5	1 2 3 4 5
• Physicians share leadership functions with other professionals.	1 2 3 4 5	1 2 3 4 5
• Our research and education strengthen the clinical enterprise.	1 2 3 4 5	1 2 3 4 5
• We continuously improve the cost and quality of our services.	1 2 3 4 5	1 2 3 4 5
• We learn from best practices.	1 2 3 4 5	1 2 3 4 5
Systems That Support Strategies		
• Utilization management is shared by all physicians.	1 2 3 4 5	1 2 3 4 5
• Information systems support physician decision-making.	1 2 3 4 5	1 2 3 4 5
• Physicans use clinical pathways and guidelines.	1 2 3 4 5	1 2 3 4 5
• Individual performance is evaluated regularly.	1 2 3 4 5	1 2 3 4 5
Leadership Approach		
• Communicates a vision	1 2 3 4 5	1 2 3 4 5
• Practices openness	1 2 3 4 5	1 2 3 4 5
• Coaching	1 2 3 4 5	1 2 3 4 5
• Empowering	1 2 3 4 5	1 2 3 4 5
• Resolving conflicts	1 2 3 4 5	1 2 3 4 5
• Developing relationships of trust	1 2 3 4 5	1 2 3 4 5
• Inspiring	1 2 3 4 5	1 2 3 4 5
• Holding people accountable	1 2 3 4 5	1 2 3 4 5
Structure		
• Systems of Excellence / product lines	1 2 3 4 5	1 2 3 4 5
• Group practice	1 2 3 4 5	1 2 3 4 5
• Health Plans	1 2 3 4 5	1 2 3 4 5
Shared Values		
• Service	1 2 3 4 5	1 2 3 4 5
• Profitability	1 2 3 4 5	1 2 3 4 5
• Ethics	1 2 3 4 5	1 2 3 4 5
• Innovation	1 2 3 4 5	1 2 3 4 5

Survey Results- Vanderbilt University Medical Center

Mean Importance & Gaps

	Leaders N=21		Clinical Chairs N=14	
	Importance	**Gap**	**Importance**	**Gap**
We Learn From Best Practices.	4.76	1.62	4.29	1.29
Utilization Management is Shared by All Physicians.	4.44	1.50	4.00	1.29
Physicans Use Clinical Pathways and Guidelines.	4.50	1.44	3.93	0.64
Service as a Shared Value	4.85	1.40	4.79	1.57
Holding People Accountable	4.86	1.57	4.57	1.50
Individual Performance is Evaluated Regularly.	4.70	1.80	4.14	1.36

MICHAEL MACCOBY, Ph. D.
DIRECTOR

Study Trip to University of Rochester Medical Center
April 12-15, 1999

Study team:

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Barbara Lenkerd, PhD
Richard Margolies, PhD
Doug Wilson, PhD
George Casey

Introduction

The university of Rochester Medical Center is composed of five entities: School of Medicine and Dentistry, School of Nursing, Strong Memorial Hospital (with 750 beds), University of Rochester Medical Faculty Group and Eastment Dental Center. There are about 1,000 full time faculty members, 2,500 full time staff and 550 residents and fellows. Of 400 medical students, 100 are graduated each year. There are about 35 primary care groups with about 30 physicians in each.

The center is consolidated under the leadership of Jay H. Stein, M.D. who reports to the Provost and President of the University of Rochester.

The Study

The team interviewed 38 people, including the chief administrators of the health center, hospitals and services; dean and chairs of the School of Medicine and Dentistry; primary care physicians who are part of the system; and community partners (see Appendix A). Interviews averaged forty-fixe minutes to one hour and explored views of past, present and future goals, evaluations of the system and its leadership, the individual's leadership style, relationships among the participants.

Practically all of the interviewees were eager to share their views and aspirations. People at URMC were helpful and friendly. We had promised a session to share our tentative conclusions, and this took place the morning of our next to last day.

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The interviewees also filled out the gap questionnaire that includes elements of a health system for the age of learning. (Appendix B) This questionnaire has been taken by academic health center leaders at a workshop sponsored by the Association of Academic Health Centers (AAHC) on March 30 in Washington, DC. We were able to compare the largest gaps at Rochester with those of the AAHC group. (Appendix C)

The feedback session was organized in terms of how interviewees saw the past, present and future and our evaluation of what we had learned.

Past

Rochester had an illustrious past. The SOM&D was founded in 1925 and was one of the first "Flexner models" in the U.S. It was among the top 15 medical colleges in the 1980s, but began to decline. NIH research funding fell from 14th place in 1988 to 29th place in 1995. There was a lack of coordination between the SOM and Strong Memorial Hospital each of which had CEOs who reported to the president of the university. Decisions were made consensually, often resulting in mediocrity. One person called it a "genteel anarchy." There was a comfortable, friendly spirit, but this hid differences that were never resolved. Chairs were chosen on the basis of low cost rather than research excellence.

On the positive side, Paul Griner, MD, CEO of Strong had successfully instituted programs to cut costs, had begun quality initiatives, and started a regional network. However, despite islands of excellence, Rochester's future was not bright.

The city of Rochester had become known nationally in the 1980s for cooperation among hospitals in order to control costs. Each hospital limited its areas of specialization, so that all would not have to buy costly technology. This cooperation broke down in the early 1990s as the Kodak corporation, formerly a supporter of cooperation, changed its views to advocate market competition as a means to control costs.

In 1995, a new president of the university, Thomas Jackson recruited Stein as Senior Vice President and Vice Provost for Health Affairs Medical Center and Strong Health CEO. Stein was thus able to integrate the two parts of the system.

Before Stein, planning involved a collection of wish lists from the various departments. Stein focussed planning on revitalizing the system by building excellence in research, education, and medical treatment in selected areas. Ground was broken for a four story $73 million building which would house a new Rochester Institute for Biomedical Sciences with centers for Ageing and

Developmental Biology, Vaccine Biology and Immunology, Cancer Biology, Cardiovascular Research, Oral Biology, and Human Genetics Molecular Pediatric Diseases. The plan called for recruiting 50 first level scientists and 200 high-skilled technicians and support staff. The total cost of the first stage of the research portion of the strategic plan including the building and start-up costs for new faculty recruitment is $113 million. A 10-year $400 million plan has been approved by the University. So far, $25.8 million has been raised.

Stein's strategy was to make Rochester's research and medical education world class, with the view that this would raise the whole institution, including the clinical capability.

The Present - Leadership at Rochester

There is wide agreement that Jay Stein was the type of leader required to reverse the decline and re-energize the institution, at least in the short run. Stein instituted an open planning process. While faculty had opportunities to present their views, most of those we interviewed believe that Stein's purpose was to gain agreement and support for his vision. Stein is often described as a "benevolent dictator", but his lieutenants pointed out that he is open to good arguments and willing sometimes to change his views.

Stein reasoned that to move the institution forward, it was necessary to focus URMC's limited resources into a limited number of programs that could be excellent rather than spreading them evenly across the enterprise at the cost of mediocrity. He saw that the best chance for success was to build on existing strength and energy and recruit where necessary. This principle was accepted by the faculty before the priority areas were selected.

As one senior executive stated, once the new centers were chosen, their leaders "were given flexibility, resources and protection by Dr. Stein. It is also true that others who requested resources were not given all they may have needed."

Stein has a driving need to be a winner and to make Rochester a winner among academic health centers. The many photographs on the walls of his office testify to his passion for golf and identification with winners in this highly individualistic sport.

Almost everyone agrees that Stein's speed, determination and somewhat dictatorial style were needed to bring the system together and propel it forward toward excellence.

Although Stein is not a process person, he uses good facilitators to compliment his style. These include the academic dean and COO. They moderate his impulsiveness and are intermediaries with others. Stein is more likely to listen to an idea if it first goes through Peter G. Robinson, the COO. Robinson also balances Stein's emphasis on gaining clinical market share with a focus on URMC's role in the improvement of community health.

Lowell A. Goldsmith, MD, the Dean of the SOM & D is receptive and empathic. Goldsmith patiently listens to the faculty's complaints, but he is fully committed to implementing Stein's vision.

Steven Goldstein, General Director and CEO of Strong Memorial Hospital spends 30 percent of his time with employees. He says his goal is to create a very open environment. Everyday he will have a breakfast, lunch or dinner with a group of employees. In these meetings he asks the question, "Are there things you see that are not the best of care?" He encourages people to speak. He takes notes and follows up. He wants employees to feel they can make a difference. He has also fired employees who showed a lack of care for patients, sending a loud message.

He has to deal with a faculty whose status is based on NIH grants, publications and the ability to attract the best residents. Their focus on patient care is uneven. The best way to influence specialists, Goldstein finds, is through pride. There were improvements in patient care after he started posting surgery results for each physician, average length of stay, infection rates and cost per case.

One of the first research institutes (RIBS) is cardiology, directed by Bradford Berk, MD who was recruited from the University of Washington. The institute includes such interdisciplinary research as vascular development, eschemic mechanisms of injury, molecular genetics, cancer and tissue formation. Besides basic science, the institute includes clinical research (trials) and a cardiovascular clinical product line. This involves a continuum of care: patient education, prevention of disease including community programs, diagnostic services, treatment including a new heart transplant service, and rehabilitation with a fitness club available to patients at low costs.

The cardiovascular institute plans to develop its own data based system on the Inter-Mountain model that will facilitate outcome measurements and the development of critical care pathways. The cardiology division includes 18 faculty members, 14 fellows, an administrator and clerical staff. Berk is recruiting 7-8 faculty members in basic science for the institute. He also teaches and practices in the coronary care unit. As he says, he is "that elusive triple threat." This means he is active in research, education and clinical practice, and that his

leadership style is mainly by example. He uses performance goals and "I try to incent."

The whole range of styles can be found among the chairs, from the autocratic to the maternal (e.g. Elizabeth McAnarney, MD, Chair of Pediatrics) to a well developed management system in orthopedics with open financial information, including salaries which are based on productivity. However, there is little cooperation among the chairs. "The faculty is a loose confederation of clinical fiefdoms."

The Educational Vision - The Double Helix

Another star recruited by Stein is Ed Hundert, MD, Senior Associate Dean for education. Hundert, a brilliant graduate of Yale (summa in mathematics and history of science), Oxford (the top first in Philosophy, Politics and Economics) and Harvard Medical School, is a psychiatrist and was assistant dean of education at Harvard voted by students the best teacher three years in a row, and in line for a full professorship.

Hundert came to Rochester because Stein promised to support his innovative, perhaps revolutionary is a better world, design for medical education.

The purpose of the Double Helix, Hundert states, is to educate physicians to think scientifically and become reflective practitioners in the sense that George Engel, MD, the retired professor of psychiatry at Rochester proposed 25 years ago with his biopsychosocial model. (Engel now in his 80s has been a consultant to Hundert). The Double Helix goes beyond the Harvard problem-based approach which Hundert points out does not integrate basic science with clinical experience. He sees Harvard as still basically Flexnarian, using problems to teach basic science. Students there start doing clinical medicine in the second semester of the second year. In contrast, the Double Helix starts with a four week education about the scientific method, evidence-based practice, epidemiology and biostatistics. Students learn to find and assess scientific and clinical literature. They learn to ask and answer questions patients ask such as "What do I have?" "How do you get it?" "What is the best way to treat it?" "What does it cost, and how can it be paid for?" Students start doing clinical medicine in the first year, combining, for example, the study of the anatomy of the knee with a clinical examination which is taped and critiqued by teacher, student and patient. Throughout the four years, there are five overarching themes: prevention, nutrition, ethics and law, diversity, (understanding the world of the patient), and financing. Students will be tested on scientific and clinical knowledge, clerkship and understanding the themes.

Hundert's revision is based on a recognition that no student can learn all there is to know in an age of continual change and new knowledge. They must learn to learn and to deal with the complexity of scientific, social, economic and political aspects of medicine and health care. The Double Helix is also designed to facilitate learning by repeating its content and themes at deeper and deeper levels throughout the four years.

Hundert has some enthusiastic volunteers for teaching. Others will teach, because they want to keep the title of assistant professor. Teaching will be evaluated, not on the basis of good performance, but rather according to student learning.

Issues for the Future

Inevitably, the strategic plan results in feelings of resentment by those faculty members who have not been favored. Furthermore, there is concern that the stars recruited by Stein and Goldsmith are free agents who can be lured away by better offers and who do not necessarily have any loyalty to Rochester. However, it can be argued that the better Rochester becomes, even if some stars leave, it will still attract the best people and also develop good people. That is the experience of companies that develop good managers.

In the past, URMC had a policy of community cooperation and involvement. There is still cooperation with community health services, and medical students provide services for the poor. However, the new emphasis is on competition, increased market share, and build-up of an IDS with the buy-up of primary care practices. Right now, the primary care groups are losing money, and there is only a 60 percent utilization rate (when a practice is bought, a salary is guaranteed for 3 years, but they find an immediate drop in productivity of 30 percent.) The PCPs we interviewed seek better links with URMC through information technology, at least. They want IT to provide lab reports, research access, e-mail with system members, and electronic patient records with direct updates on patients. They also ask for more efficient billing and collection systems. Some of them are eager to move to the age of learning, treating patients as partners. But the URMC leadership is not doing much thinking in this direction. The IT was described to us as "Stone Age." Stein is not convinced of the strategic importance of systems that support clinical decision-making, but he is coming to the view that web technology can be used to develop more informed patients with the ability to participate more actively in caring for themselves.

Although they have been buying PC practices, Stein sees an integrated clinical delivery system as of secondary importance, at best. "It is not predictable. I would like 60% of the market we want and have it profitable. We'll pick the product lines. We do better with inpatient complicated things." For example,

Rochester has put together a new program in heart transplants. They are the Rochester leaders in high risk neonatal care, burn treatment, and cardiothoracic care. Using their reputation and belief in their superior quality, URMC is unapologetic about charging more than the local competition. Although they work at cutting costs, they are not competing on price.

Stein wants to compete with the Cleveland Clinic and University of Pittsburgh, not Rochester community hospitals.

The President of the HMO, Preferred Care, said "The University does not need to be a low cost operator. They have the best care perception, good local press, research and clinical leader image and the only OB and pediatric neo-natal care in town. They also have Strong Children's Hospital."

In the late 1980's Strong, under Paul Griner's leadership, developed a regional network to help consolidate its referral base. That network now includes partnerships with hospitals and physicians in 57 sites in the rural counties surrounding Rochester. In 1997 Strong Partners Health System was created to formalize the affiliation of Highland Hospital and its long-term care components. Faculty specialists cooperate by making regular visits and primary care doctors refer patients to the Rochester Medical Center. This system provides about 60 percent of URMC's profit.

Strong employees have "fast track teams" to work on operating guidelines. This approach evolved from the quality (TQM) initiative which produced many committees unrelated to operational priorities. Although there are some clinical outcome and utilization measures, the chairs are skeptical about their meaning and significance ("We get tougher patients." "We do more C-sections, because some of our patients are professional women who find them more convenient.") Furthermore, there is concern that publishing these measures might attract a negative response from state regulators who in making comparisons, would not take account of URMC's more difficult patient population.

The development of clinical pathways depends on support by individual chairs. Some, more than others are convinced of their importance.

The survey we administered was filled in by 35 people and showed some large perceived gaps. The gap in trust reflects our observation that URMC is not a well-developed social system. It lacks processes for dialogue among chairs, participation in governance, and learning from its own best approaches to leadership. There is a significant gap in "recognizing accomplishments." Stein stated to us, "I am not a process person," and while he uses process people, a number of chairs feel left out.

Other gaps focus on coaching and teaching skills and universal involvement in continuously improving the cost and quality of service.

It is important to state that these gaps are similar to those of 14 leaders of Academic Health Centers surveyed at their meeting on March 30, 1999 in Washington, D.C. We believe they are due in large part to the semi feudal organization of academic health centers which allow wide differences in approach to leadership and organization within fiefdoms.

A number of people, especially the younger primary physicians, feel a disconnect between the academic system with its culture of status and an attempt to build a modern integrated delivery system.

Some of the community leaders we interviewed hoped that URMC would play more of a leadership role in developing wellness programs for the city.

The leadership of URMC sees its future challenges in adapting to the rapidly changing and unpredictable clinical market, gaining funding for research and growing clinical research as a source of revenue, and securing increased time commitment from the faculty for the double-helix curriculum.

To summarize, URMC under the leadership of a visionary innovator seeks to achieve greatness in research and a revolutionary medical education. On the clinical side, the CEO of Strong Memorial Hospital attempts to strengthen a patient focussed culture. However, he must deal with independent departments of specialists with different approaches to service. The PCPs feel alienated from the academic-specialist world and believe an IT system could improve relationships and strengthen the IDS. However, URMC leadership focusses on expanding market share based on its reputation for specialty care.

List of people interviewed at the University of Rochester Medical Center

Nancy Bennett, MD, MS
Monroe County Health Department

Bradford Berk, MD
Chief, Division of Cardiology
Director, Cardiovascular RIBS

Marc Berliant, MD
Community Physician

Howard Berman
CEO, Excellus
Blue Cross/Blue Shield

Leo P. Brideau
President and Chief Executive Officer
Strong Partners Health System, Inc.

Richard Burton, MD
Chair, Department of Orthopaedics

David Dobrzynski, MD
Community Physician

Lowell A. Goldsmith, MD
Dean, School of Medicine and Dentistry

Steven I. Goldstein
General Director and CEO, Strong Memorial Hospital and President, Highland Hospital

Joe Gomez, MD
Community Physician

Michael Goonan
Chief Financial Officer, Medical Center

David Guzick, MD
Chair, Department of Obstetrics/Gynecology

Arthur Hengerer, MD
Chair, Department of Otolaryngology

Vicky Hines
Associate Dean, Administrator and Finance
School of Nursing

Ed Hundert, MD
Sr. Associate Dean, School of Medicine and Dentistry
Walter Johnson, MD
Community Physician

Sally Leiter, RN
President, CEO of Visiting Nurse Service and VP for Home Care and Care Management for Strong Health

Raymond Mayewski, MD
Chief Medical Officer
URMC

Elizabeth McAnarney, MD
Chair, Dept. of Pediatrics; Professor, Pediatric Adolescent Med.

Edward A. Messing, MD
Professor and Chair, Department of Urology;
Associate Director, Cancer Center

Thomas Mooney
President, Chamber of Commerce

Charles Murphy
Director, Medical Center Human Resources

Betty G. Oppenheimer
Director, Strategic Planning

Robert Panzer, MD
Chief Quality Officer, Strong Health

Kathleen Parrinello
Senior Director, Hospital Operations

Thomas Pearson, MD, PhD
Chair, Community and Preventive Med.

Alice Pentland, MD
Chair, Department of Dermatology

Charles Phelps, PhD
Provost

D. Jerome Powell
Director, Information Systems Division

Peter G. Robinson
Vice President, Medical Center
and Chief Operating Officer
Leonard Shute
Senior Director of Finance, Strong Memorial Hospital

Brian Steele, MD
Community Physician

Jay H. Stein, MD
Senior Vice President and Vice Provost for Health Affairs; Medial Center and Strong Health CEO

Anthony Suchman, MD
CMO, CEO, Strong Health Managed Care Organization

Larry Tabak, DDS, PhD
Senior Associate Dean, Research Institute of Biomedical Science

John Urban
President, Preferred Care

Michael J. Weidner
Vice President, Primary and Long Term Care
Strong Health

Patricia Witzel
Senior Director, Nursing Practice

Gap Survey used at University of Rochester Medical Center

These are elements of a Health System for the Age of Learning. Consider each one.
How **important** is each one for the success of your system?
At what **level today** are you achieving each of them?

	IMPORTANCE low high	**LEVEL TODAY** low high
Strategies		
Service is our highest priority.	1 2 3 4 5	1 2 3 4 5
• Our culture, attitudes, and behavior support service.	1 2 3 4 5	1 2 3 4 5
• Our goal is to exceed expectations for service and cost by good management.	1 2 3 4 5	1 2 3 4 5
• We provide compassionate care that is appropriate and effective.	1 2 3 4 5	1 2 3 4 5
• We work to improve the health of individuals and communities.	1 2 3 4 5	1 2 3 4 5
• Population health needs and the market shape and size our clinical programs.	1 2 3 4 5	1 2 3 4 5
We function as a physician-led system that integrates all the elements of health services.	1 2 3 4 5	1 2 3 4 5
• Physicians are leaders as well as care-givers.	1 2 3 4 5	1 2 3 4 5
• Physicians share leadership functions with other professionals.	1 2 3 4 5	1 2 3 4 5
• We collaborate with other organizations in order to better serve individuals and communities.	1 2 3 4 5	1 2 3 4 5
We are a learning organization.	1 2 3 4 5	1 2 3 4 5
• Our research and education strengthens the clinical enterprise.	1 2 3 4 5	1 2 3 4 5
• We continually work to better understand the health needs of individuals and communities.	1 2 3 4 5	1 2 3 4 5
• All of us are involved in continuously improving the cost and quality of our services.	1 2 3 4 5	1 2 3 4 5
• We learn from and with other organizations.	1 2 3 4 5	1 2 3 4 5
We value people as partners for success.	1 2 3 4 5	1 2 3 4 5
• We invest in people's development.	1 2 3 4 5	1 2 3 4 5
• We give people appropriate responsibilities that make full use of their capabilities.	1 2 3 4 5	1 2 3 4 5
• We provide meaningful rewards.	1 2 3 4 5	1 2 3 4 5
• We recognize accomplishment.	1 2 3 4 5	1 2 3 4 5
• We develop relationships of trust.	1 2 3 4 5	1 2 3 4 5

These are elements of a Health System for the Age of Learning. Consider each one.
How **important** is each one for the success of your system?
At what **level today** are you achieving each of them?

	IMPORTANCE low high	**LEVEL TODAY** low high
Systems That Support Strategies		
• Utilization management	1 2 3 4 5	1 2 3 4 5
• Information systems that support physician decision-making	1 2 3 4 5	1 2 3 4 5
• Call center	1 2 3 4 5	1 2 3 4 5
• Clinical pathways and guidelines	1 2 3 4 5	1 2 3 4 5
• Continuous improvement	1 2 3 4 5	1 2 3 4 5
• Periodic evaluation of individual performance	1 2 3 4 5	1 2 3 4 5
Style of Relationship Among and By Leaders		
• Interactive dialogue	1 2 3 4 5	1 2 3 4 5
• Openness	1 2 3 4 5	1 2 3 4 5
• Systems Thinking	1 2 3 4 5	1 2 3 4 5
• Coaching / teaching	1 2 3 4 5	1 2 3 4 5
• Accountability	1 2 3 4 5	1 2 3 4 5
• Teaching	1 2 3 4 5	1 2 3 4 5
Skills		
• Leadership	1 2 3 4 5	1 2 3 4 5
• Financial	1 2 3 4 5	1 2 3 4 5
• Medical	1 2 3 4 5	1 2 3 4 5
• Teaching	1 2 3 4 5	1 2 3 4 5
• Research	1 2 3 4 5	1 2 3 4 5
• Human Resources	1 2 3 4 5	1 2 3 4 5
• Marketing	1 2 3 4 5	1 2 3 4 5
• Information Technology	1 2 3 4 5	1 2 3 4 5

These are elements of a Health System for the Age of Learning. Consider each one.
How **important** is each one for the success of your system?
At what **level today** are you achieving each of them?

	IMPORTANCE low high	**LEVEL TODAY** low high
Structure		
• Systems of Excellence / product lines	1 2 3 4 5	1 2 3 4 5
• MD - administrator partnership	1 2 3 4 5	1 2 3 4 5
• Health Plans	1 2 3 4 5	1 2 3 4 5
• Support Services (e.g., HR, IT, Marketing, Finance)	1 2 3 4 5	1 2 3 4 5
Shared Values		
• Service to patients	1 2 3 4 5	1 2 3 4 5
• Service to students	1 2 3 4 5	1 2 3 4 5
• Service to colleagues	1 2 3 4 5	1 2 3 4 5
• Service to the university	1 2 3 4 5	1 2 3 4 5
• Service to the community	1 2 3 4 5	1 2 3 4 5
• Ethics	1 2 3 4 5	1 2 3 4 5
• Fiscal responsibility	1 2 3 4 5	1 2 3 4 5
• Innovation	1 2 3 4 5	1 2 3 4 5

Values at Work Survey

How well does each statement below describe your approach to work?	**Not at all**	**A little**	**Some what**	**Very well**
A You approach your work as an expert. You want to provide high-quality work and to exercise your skill and competence.	1	2	3	4
B You approach your work as a helper. You want to help people.	1	2	3	4
C You approach your work as a defender. You want to defend against those who do not respect the values essential to a good organization, and you want to protect those who do practice these values.	1	2	3	4
D You approach your work as an innovator who knows how to play the game of business. You want to win by making the organization more successful.	1	2	3	4
E You approach your work as the means to a self-fulfilling life. You want to further your own development at work.	1	2	3	4

Which of the above approaches to work are most important to you?

(Please circle the appropriate letter.)

First Choice	A	B	C	D	E
Second Choice	A	B	C	D	E

URMC Leadership (N=35)

Most Important

- Leadership skills
- Accountability
- Medical skills
- Service to patients
- Research skills
- Research and education strengthen clinical enterprise

Biggest Gaps

- Meaningful rewards
- Recognize accomplishments
- Information systems that support physician decision making
- Relationships of trust
- Service as highest priority
- HR skills

AHC Leaders (N=14)

Most Important

- Innovation
- Providing compassionate care that is appropriate and effective
- Leadership skills
- Medical skills
- Fiscal responsibility
- Information technology

Biggest Gaps

- Information systems that support physician decision making
- Everyone involved in continuously improving the cost and quality of services
- Coaching/teaching skills
- Relationships of trust
- Human Resource Management

Community Doctors -

Added Value Desired

- Being part of URMC - learning and teaching
- Efficient billing/ collection system
- IT support
  - lab reports
  - research access
  - e-mail with system members
  - electronic patient records
- Direct updates on patients
- Communication vs. misinformation and rumors