The Roles of Academic Health Centers in the 21st Century: A Workshop Summary

Committee on the Roles of Academic Health Centers in the 21st Century, Linda T. Kohn, Editor

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Linda T. Kohn, *Editor*

Board of Health Care Services

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Willing is not enough; we must do.
—Goethe

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This report has been reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise, in accordance with procedures approved by the NRC's Report Review Committee. The purpose of this independent review is to provide candid and critical comments that will assist the institution in making its published report as sound as possible and to ensure that the report meets institutional standards for objectivity, evidence, and responsiveness to the study charge. The review comments and draft manuscript remain confidential to protect the integrity of the deliberative process. We wish to thank the following individuals for their review of this report:

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Although the reviewers listed above have provided many constructive comments and suggestions, they were not asked to endorse the conclusions or recommendations nor did they see the final draft of the report before its release. The review of this report was overseen by **DAVID H. SOLOMON**, the RAND Corporation. Appointed by the Institute of Medicine, he was responsible for making certain that an independent examination of this report was carried out in accordance with institutional procedures and that all review comments were carefully considered. Responsibility for the final content of this report rests entirely with the authoring committee and the institution.

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INTRODUCTION

The statement of task to the Institute of Medicine Committee on the Roles of Academic Health Centers (AHCs) in the 21st Century charges it to "examine the current role and status of academic health centers in American society, anticipate intermediate and long-term opportunities and challenges for these institutions, and recommend to the institutions themselves, to policy makers, to the health professions, and to the public, scenarios that might be undertaken to maximize the public good associated with these institutions. The committee will:

1) Assess the development, contribution and performance of AHCs in teaching, research and technology development; patient care, including the provision of specialized care; and community service, including caring for underserved populations.
2) Evaluate whether AHCs are prepared to meet societal needs and expectations over the coming decades in the areas of: a) an educated and trained professional work force; b) assessment of the value and cost effectiveness of new technologies and facilitation of their dispersion; c) provision of health care services to populations dependent upon them (e.g., uninsured, poor); and d) provision of leadership in relation to ethical and social aspects of health.
3) Assess the capacity of AHCs to carry out their multiple functions in an effective and efficient manner.
4) Identify steps that can be taken by AHCs themselves, and by communities, policymakers, and others to maintain and enhance the performance of AHCs."

The Committee sponsored a workshop on January 24-25, 2002, hearing testimony from seventeen experts on the trends and developments in health care, changing health care needs, and the implications and expectations for AHCs in how they carry out their roles in education, research and patient care. These proceedings summarize the presentations and discussions held at the workshop.

The agenda for the workshop was divided into three sections: 1) Changing Needs and Trends in Health Care, 2) Creating a Vision for the Future, and 3) Creating an Environment to Support Needed Changes. The format included brief presentations by one or more presenters, followed by questions and comments from other participants at the workshop. After all questions or comments had been raised during a discussion period, the presenters responded to the group of questions or comments raised. This format permitted maximum participation by all workshop participants. However, in reading these proceedings, it should be noted that questions may have been raised during the discussion that were not directly answered at the workshop. The value to the committee, however, was in hearing the types of concerns raised and the complexities associated with many of the issues.

The workshop covered a diverse set of issues in trying to answer the question of how AHCs can and should respond to the needs and demands of a changing population and health care environment. No findings or conclusions were determined at the workshop, nor should any be drawn from these proceedings. The workshop was intended solely as an information-gathering activity by the committee. However, four cross-cutting issues are highlighted here because they

were raised multiple times throughout the two days. They are cross cutting because they are not role specific, but affect the AHC as a whole. These issues were:

Drivers of Change: Rapid changes in information technology and biomedical advances in health care are likely to affect all the current roles of AHCs. Scientific and technological advances can potentially permit clinical care to intervene early in a disease process by identifying and modifying personal risk. The burgeoning knowledge base will put pressure on all levels of education to use the continuously expanding evidence base and to prepare health professionals for lifelong learning. Emphasis on translational research can support the application of knowledge developed to gain benefits in practice. Another driver of change is the shifting disease burden, which affects the changing health and medical needs of the people using the health care system. More people will be faced with having and managing chronic conditions. In addition, the public's health will likely continue to be affected by communicable diseases and lifestyle-related illnesses, suggesting the need for increased attention to population health, as well as the acute and chronic care needs of people.

Defining Accountabilities: Questions about AHCs' accountability arose repeatedly. Some participants felt the current levels of performance expectations were generally unclear or undefined, whereas others believed that the expectations were clear for some of the missions, but not all. Many participants suggested that AHCs should be accountable for meeting a broader mission. For example, the mission of AHCs might include using education, research and clinical care to improve the health of a defined population, improving the public's health, generating and disseminating knowledge, advancing e-health, providing education to current health professionals, providing leadership in global health, providing community service and outreach, or becoming role models for delivering care that has the attributes necessary for clinical practice. However, some participants believed the current missions of education, research and patient care are still the appropriate roles of AHCs, although adaptations may be required within each to meet the changing demands and expectations of the external environment. One participant suggested a narrowing of the AHC mission to limit indigent care, or to AHCs serving as an "insurer" of last resort. Challenges have been encountered in attempts to define accountabilities, including issues related to measurement and availability of information.

Interdisciplinary Approaches Across All The Roles: This issue arose in the context of each AHC role. In terms of patient care, the demands of caring for a population with chronic conditions is expected to rely on the use of interdisciplinary teams in order to deliver the diverse set of services needed by such a population and improve both the quality and efficiency of care. In terms of the education role, interdisciplinary approaches could train people in the types of teams in which they will be expected to work. In terms of the research role, advances in biomedical science—especially genomics— could influence the demand for interdisciplinary approaches to conduct research and apply its results, including input from non-health disciplines, such as engineering or computational sciences. Therefore, discussions surrounding interdisciplinary approaches related to both integration among the disciplines within the AHC (e.g., medicine, nursing, public health and others) as well as other disciplines not typically found in AHCs, but located in other departments of a university, such as engineering, applied mathematics or ethics.

Separating Accountabilities and Integrating Functions: As noted above, integration across the disciplines and functions of the AHC was raised as an issue. However, a number of participants also suggested the need for AHCs to be able to account for each mission separately. They believed this would permit greater accountability, especially for the public dollars provided to AHCs, and could also improve the ability of AHCs to more effectively manage each mission. Separating the accounting does not necessarily imply that each function must be self-supporting,

but rather, that any cross-subsidies are explicitly recognized and counted. As a result, there was a perceived need to integrate the AHC roles, but also to distinguish the accountabilities within each role. It is not clear if such goals are compatible and discussions at the workshop did not differentiate the application of this concept for individual AHCs or across all AHCs, or how broadly or narrowly the concept of accountability might be defined.

This workshop provided an opportunity for the Committee to gather a variety of perspectives on the issues facing academic health centers for the 21st century. It represents only one input into the overall study process. In addition, the Committee will commission several papers on special topics, review the available literature and examine other recent analytic reports. One of its challenges will be to identify priorities from among the many serious and pressing issues that confront academic health centers. The Committee will conduct its deliberations in a series of meetings during the remainder of this year and issue its final report with findings and recommendations in early 2003. The workshop agenda and participant list are included in Appendix A. This workshop was sponsored with support from The Commonwealth Fund.

WORKSHOP PROCEEDINGS

SECTION I—CHANGING NEEDS AND TRENDS IN HEALTH CARE

How AHCs Can Meet the Future of Health Care

Uwe Reinhardt, Ph.D., Professor of Economics and Public Affairs, Woodrow Wilson School of Public and International Affairs, Princeton University

Academic health centers bring a unique and special set of values to health care. In the past, Dr. Reinhardt has often suggested that the private, for-profit sector could serve as a model for the management of academic health centers. The ability of the marketplace to discipline organizations and create wealth is evident in other industries and offers lessons for the management of complex organizations, such as academic health centers. However, in light of recent events in the business sector, such as Enron, he posited that while some techniques can be drawn from the business model, academic health centers need to meet a higher threshold of performance to fulfill their special role in society.

Under society's "old" social contract with AHCs, the costs of conducting their missions in education, research and patient care were paid; in return, AHCs provided those services, as well as national pride and worldwide recognition. However, the management structure of AHCs has always been a "black box" of complex cross-subsidies, with little known about the actual costs of delivering these missions. Although the demand for such information was not requested in the past, pressures brought about by health care spending growth, imperatives for efficiency and demands for quality and accountability suggest this information gap may no longer be tolerable. Under a "new" social contract, questions will be asked as to how AHCs use the public funds they receive and how much funding is actually needed to conduct their work. Dr. Reinhardt believes that AHCs need to separate the accounting for their mission functions and that each should be explicitly financed; if there are cross-subsidies, they should be identified as such. The private and public good of AHCs should be identified clearly. Society should decide what it chooses to support, and to know that such support is being used for its intended purpose. One of the challenges in doing this is in defining 'private' versus 'public' good in order to determine what should be subsidized with public funds. Public goods (such as clinical research, public health measures and national reputation) should be fully financed with public dollars. Public goods with externalities (such as immunization and charity care for the poor) should be subsidized with public funds. Private goods (such as health care services, clinical trials and human capital) should be privately financed.

In Dr. Reinhardt's view, medical education is no more a public good than other professional education and should be privately financed. Because the resident absorbs the cost of education through reduced salary, accrues the benefits of the education, and brings revenue to the AHC, it should not be considered a public good. In his view, there is no logic or reason for the variation in per resident amounts seen across the country, and it represents a significant lapse in accountability among AHCs. Furthermore, he believes that AHCs should no longer be willing to assume the role of caring for the uninsured. AHCs should either demand that Congress pay adequately for such care or AHCs should "get out of the insurance business."

Finally, Dr. Reinhardt noted that, AHCs have traditionally performed their various mission functions while asking for additional resources to support them. Instead, society needs to determine what is required from AHCs and AHCs need to decide what they can do. An ongoing dialogue is necessary.

Future Trends and Direction in Health Care
Jeff Goldsmith, Ph.D., President, Health Futures, Inc., Charlottesville, Virginia

Dr. Goldsmith emphasized three points in his comments. First, he spoke of the vulnerability of AHCs to economic cycles. The health of AHCs is dependent upon the vitality of the general economy and government. In times of economic recession, many effects are possible, all of which can potentially harm AHCs. To the extent that deficits occur at the federal and state levels, budget cuts may hurt the AHCs, that are safety net providers. At the same time, the number of uninsured may grow. Companies may change their benefit structures in response to rising health care costs. As a result, patients may have to bear a greater portion of health care costs and insurers may force profitable patients to shift their care to community institutions. It is a myth that AHCs are immune to economic cycles.

Secondly, Dr. Goldsmith spoke to workforce needs and his belief that a shift is occurring from an era of surplus of health resources (many beds, hospitals, and physicians) to an era of scarcity. Dr. Goldsmith believes there will be a shortage of health professionals, not due to an increased demand for health care services, but rather, because of the earlier retirement of physicians who are currently part of the "baby boom" generation. This group of professionals is "burned out" and additional increments in salary will not be sufficient to address the demands of practice today. Serious shortages exist for certain physician specialties, such as interventional radiologists, but also for pharmacists or for those with database expertise. As AHCs are faced with having to expand their training programs, a significant source of pressure will be exerted in recruiting, retaining and paying for faculty.

Dr. Goldsmith's third point related to technology. Both information and biomedical technologies will require a rethinking and retooling of health care delivery. One of the major advances in information technology has been the maturation of the electronic medical record. This will be more than a "passive digital replication" of the written medical record. Instead, the electronic medical record will be a guidance and decision-support system that is able to find, acquire and deliver both patient-specific and comparative information to the bedside. However, according to Dr. Goldsmith, getting there is like "trying to rewire a car while it is running." Unless people are taught to use these tools during their training, they are not going to be able to use them in practice. Another technological impact will be the rapid growth in the ability to screen people and pathogens for their genetic makeup. Eventually, our understanding about the basis of disease will enable us to assess those risks that are of a genetic nature and intervene strategically to modify them. The ability to genotype individuals and their pathogens, their cancers and their viruses will enable a more optimal mix of therapies and more effective use of expensive pharmaceuticals. Some have called this the emergence of personalized medicine. The challenge for AHCs is how to harness these technological opportunities and leverage the basic science being developed.

Finally, Dr. Goldsmith pointed out the need for better management of these institutions in the future. There is a need to sort out the products of AHCs and hold organizations accountable for producing them.

Discussion

During open discussion, a number of issues were raised that can be grouped under three areas:

Defining Accountabilities

The first area of questions asked about the ability to define accountabilities for AHCs within the present system of cross-subsidies. Larry Lewin noted that although it may be desirable and advisable to understand each mission individually, many activities in AHCs are jointly produced. Therefore, the allocation of these joint costs to programs is subjective. Ralph Snyderman indicated that at Duke, they have indeed been able to account separately for each mission. However, some complexities and unpredictability remain because of narrow margins, unpredictable volume, care of the uninsured and lags of several months in the data needed for decision-making. Edward Holmes noted that although a better understanding of costs for each mission is needed for accountability, we also know that the education and research functions are not self-supporting. Even in a tightly managed organization, research requires approximately 15 cents for every dollar spent. Education is also not sufficiently compensated.

In response to this series of issues, Uwe Reinhardt responded that if AHCs are unable to separate their product lines and identify the cross-subsidies, the alternative is a budget approach for financing by which AHCs are given a budget to be used to maximize health. However, it is not clear how "health" could be measured for purposes of payment policy.

Jeff Goldsmith responded that one of the most troubling aspects of AHCs is the lack of accountability for their performance of the missions. He also believes that an organization can be "mediocre" in all three missions and suffer no consequences. The efficient use of resources as a goal is not a high enough bar for AHCs. Furthermore, he noted that mission accounting does not mean that every mission at every institution must be self-supporting, but each must function efficiently. The problem is that the decision-making for the missions is distorted if, for example, 20 percent of the clinical mission is carved out for research. The people focused on each mission need to be accountable for resource use, supported by an explicit strategy for funding the subsidies that may be required.

Different views were expressed in reaction to Uwe Reinhardt's comments about what constitutes a public good. John Rowe questioned: 1) why AHCs should receive tax exemption for providing public goods if, as Dr. Reinhardt suggests, students pay for their own education and 2) the AHC role in caring for the uninsured should be re-examined. Robert Dickler suggested that education is indeed a public good and must be viewed in the context of education and the nature of medical education; however, he also agreed that this will be a topic of increasing debate. Roy Wilson challenged the assumption that for-profit AHCs are less involved in caring for the poor than non-profit AHCs. Although this is a common assumption, he suggested the need for better evidence. In response, Uwe Reinhardt expressed his belief that the only public good aspect of a medical education might be a particular ethic that physicians, as professionals, bring to their jobs, and perhaps that is the public good of medical education. Beyond that, however, it is hard to for him see the public good. Education is "human capital that sits on the skeleton of the person who has it and they can deploy it in any way they wish. They can do boutique medicine or they can do indigent care." The objection of economists to education as a public good is that it is stated as an axiom rather than something that has been justified. In terms of tax exemption, Dr. Reinhardt suggested an alternative approach in which all institutions become taxable entities, but each time that charity care is provided to a patient, a tax credit would be issued as a credit against taxes owed. If a hospital provides enough charity care, no taxes would be owed. If no charity care is provided, taxes would be paid.

Variation Among AHCs

Paul Ramsey noted that there is a great deal of variation across AHCs. For example, some are research-intensive institutions that may require greater support for their research infrastructure. However, Nicole Lurie noted that there are likely variations in expectations as well. James Curran noted that all AHCs measure themselves differently and, as a result, identify themselves as being in the top quartile on some dimension. He asked how many AHCs are necessary, and what components are needed. Uwe Reinhardt responded that in his view, national policy should not support regional variations. It is a contradiction and represents a loss of control in setting standards and direction.

Care Delivery and Workforce

Ralph Snyderman noted that the health care delivery system is not designed effectively to improve health. For example, if diabetes could be identified as it happens, early intervention could be introduced to avoid complications. However, the system is unable to prospectively deal with health problems; it can only react. He asked whether AHCs will be drivers or passive participants in the progression toward more prospective care. In his view, AHCs have the potential to be leaders in developing best practice models for more prospective care because they have the intellectual capital, access to clinical information systems, and access to patients and other resources. However, he also noted that a profound cultural change is necessary to organize academicians. John Rowe suggested that although AHCs may be the best place for doing the "research and development" (R&D) function to develop models and pilot programs for improved delivery of care, he questioned if they are the best place for designing implementation strategies. For example, in his experience, when Aetna wanted to purchase disease management programs, the AHCs could not compete with private vendors on efficiency, price or other factors, even though the vendors were probably using models developed at AHCs.

Christine Seidman suggested there are several sides of the AHC safety net function other than caring for the uninsured. One is caring for the *overly* insured—those patients who choose a higher cost option and more care, perhaps in the face of a terminal illness. The second is support for the community physician caring for clinically difficult patients. The latter may become more important over time as biomedical technology creates a specialized knowledge with which the average community physician may need support. In response, Uwe Reinhardt stated that if the overly insured desire more care, they should pay for it, but society should not subsidize it. He also believes that in their own way, AHCs are part of the uninsured problem, in that the AHCs have always cared for the uninsured, “bailing out” Congress from having to deal with it. AHCs should be the most powerful lobby today in getting coverage for the uninsured so their organizations can be properly run.

Linda Aiken noted that care delivery and workforce issues intersect in terms of how patient care processes are designed and how the workforce is used. She asked whether AHCs have an “R&D” role in how the workforce is utilized and deployed to deliver care. Specific to this issue, Jeff Goldsmith said that resolving the workforce issue will require that AHCs become humane, efficient and thoughtful places to work. A generation of health workers has become exhausted because we have not been able to provide a “satisfying, intellectually stimulating work environment that is consistent with the values that brought them into clinical practice in the first place.” In his view, the workforce issues are huge and are central to the design and management of work.

Changing Expectations Among AHC Constituencies[1]

The Needs of Low-Income Populations
Sara Rosenbaum, J.D., Harold and Jane Hirsh Professor of Law and Policy, George Washington University

Professor Rosenbaum spoke to the expectations of AHCs from the perspective of low-income populations. From her perspective, the issue is more than how much uncompensated care is provided by AHCs, but should include how AHCs reach out to poorer communities. She identified three approaches to community benefit. The first is the nature of the educational process itself and its ability to train people who can relate to the patients in their communities. Despite the growth of technology, much of medicine still comes down to the intangible relationship between physicians and patients. Current education may have the effect of "hardening" attitudes rather than helping students see the social and other needs of their patients. The education of a health professional is not complete unless they also understand that a family in Washington, D.C. earning twice the poverty level cannot find affordable housing. Second, community service should not be considered an "add on" to education, but a more central part of it. It should include time working in *real* community settings in addition to working in the hospital's clinic. Third, while continuing education programs have traditionally focused on retaining technical skills, there should also be a focus on community outreach and understanding the social context in which care is provided. AHCs should take a broader perspective on continuing education. Professor Rosenbaum tells her students that the quality of health care is shaped not only by a slip of the knife, but also a slip of the tongue. A physician who is technically brilliant, but completely impervious to his or her surroundings, cannot practice good medicine.

The Needs of Health Plans
Charles Cutler, M.D., Chief Medical Officer, American Association of Health Plans

Dr. Cutler spoke to the expectations of AHCs from the perspective of health plans. In preparation for this presentation, Dr. Cutler polled a number of health plan medical directors. They agreed that although the roles of research, education and patient care are expected from AHCs, the approaches needed within each role should vary from what is done today.

In terms of the research role, scientific advances are important, but health plans also need AHCs to take leadership in: 1) describing what makes care safe, effective and efficient; 2) developing processes of care that are more patient-centered, efficient, effective and timely, and defining how these processes can be implemented; 3) defining what are important and relevant measures of quality of care and practice; 4) identifying effective methods of health promotion and disease prevention; and 5) understanding what works and what doesn't work in basic and applied clinical science to shorten the estimated 17 years it can take between a scientific advancement and implementation into practice.

In terms of the education role, health plans need AHCs to train health professionals in the skills and knowledge needed in practice, with training in using information technology to manage practices and support clinical decision-making. The education role should place greater emphasis on training people to work within the types of teams that should be used in practice and that can

[1] Ellen Stovall, Executive Director of the National Coalition for Cancer Survivorship, was to speak to the views of patients. She was unable to attend the conference and submitted her comments in writing. They are included in Appendix B.

improve efficiency and quality (as is done in the manufacturing and aviation industries, among others). As more patients are faced with managing chronic conditions, they need to be involved as partners in their own care, and health professionals need to be trained to communicate with and support patients in that way. Training in population-based care should train health professionals how to manage not only the patients they see in person, but also the patients that are not seen. Additionally, education programs for health professionals should include self-evaluation that supports reflective practice, lifelong learning and accountability.

In terms of the patient care role, AHCs should become role models for the attributes necessary for practice, including team care, use of measures to evaluate and improve performance, active management of relationships with community providers and interdisciplinary coordination.

To be included in health plan networks, AHCs will need to demonstrate performance in each role. Relative to patient care, AHCs should be able to demonstrate that they are centers of excellence based on performance measures, including costs. In terms of research, they should be able to demonstrate the conduct of cutting-edge research that is not available in other settings. In education, they should be able to demonstrate the availability of expanded training opportunities in areas such as primary care, in which community practices may be more effective. Finally, AHCs should seek partnerships with managed care, as appropriate. Some currently exist (e.g., Harvard Pilgrim Health Plan and Harvard University, or Group Health Cooperative of Puget Sound and the University of Washington). More partnerships should be pursued and developed.

Discussion

During open discussion, a series of questions were raised, which can be grouped within two areas:

Financing/Payment

Larry Lewin raised the issue of competition in health care and erosion of the ability of cross-subsidies to support AHC functions. Brian Biles noted that prior research has shown that in past years, indemnity payers paid AHCs approximately 30 percent more per case (case mix adjusted) compared with community hospitals. In the mid-1990s, research suggested that managed care plans were only going to pay an additional 10 percent at best, introducing a major financial change for AHCs.[2] John Rowe suggested that health plans are "balanced" payers that help balance the budget for academic health centers. He noted that data developed by staff at the Medicare Payment Advisory Commission (MedPAC) suggest that as Medicare funding goes down for hospitals, health plans pay more. Medicare is both the largest payer and the most powerful discounter. In response, Charles Cutler suggested that if health care premiums are to be kept affordable, more tiered networks are likely. That may not be favorable for AHCs and may have unintended consequences for patients, but the market will need to resolve that issue.

Both Uwe Reinhardt and Jeff Goldsmith raised the issue of how to balance public and private responsibilities in supporting AHCs. Uwe Reinhardt commented that there is a perception that private payers are the "residual budget gap closer," addressing the shortfalls from Medicare. To the extent that private payers believe they have to fulfill that role, then there is no constraint and the private payers are unable to discipline the market. If so, the public/private mix needs to be re-examined to determine each party's responsibility, particularly for academic health centers.

[2] On the next day of the workshop, Allen Dobson indicated 1999 case mix adjusted cost per case data show that AHCs experienced an average of about 35 percent higher costs, the same as was noted 15 years ago.

Jeff Goldsmith stated his belief that there has been a flight from competition, both in health care delivery and health insurance during the mid- to late-1990s, and that in most metropolitan areas, provider cartels are negotiating with health insurance cartels. In the typical metropolitan area, 3 plans control 70 percent of the private insurance market. In his view, it is absurd to think there are market forces operating in this field. This raises the serious question of the government's role.

Both Sara Rosenbaum and Charles Cutler noted the importance of paying AHCs for the outcomes they produce. However, Sara Rosenbaum commented that medicine is also driven by judgment, and financing should consider the "fungible" side of the product. Charles Cutler reinforced the concern about how to pay AHCs for their outcomes. This includes not only clinical outcomes, but also supporting the desired outputs from medical education. For example, if the needed skills include population and public health, those should not be incremental add-ons.

Setting Expectations and Implementing Them

Several people commented on the types of activities desired from AHCs. Linda Aiken asked about the need for a broader perspective in education that includes health, knowledge management, economics and other disciplines. Larry Lewin asked about the potential for greater integration of public health and medicine, asking if the separation and isolation of those two areas made sense. Paul Ramsey raised the issue of workforce distribution, especially the serious maldistribution of the workforce in rural areas. As the need for multidisciplinary teams and information technology grows, he asked whether AHCs should play a greater role in addressing the needs of rural health. Claude Bennett commented on the apparent disconnect between what AHCs *think* they are doing and what they *are* doing. He noted that AHCs are at the cutting edge of research, yet may not adequately care for the more common health care needs of people or consider the impact of research on health care costs. Education attempts to provide students experiences in community settings, but comments raised in earlier discussions suggest that such efforts may not be as effective as desired.

Sara Rosenbaum suggested that there may be some similarities between legal and medical training in that legal training has developed techniques to teach students to be empathic and to be able to advocate for their clients. There is as much emphasis placed on the teaching of these skills as there is on teaching torts. This type of educational approach requires more than just rotating students through a community setting, whether that be a public defender's office or a community health clinic. It requires that such skills be taught as a core part of the training experience.

Ralph Snyderman noted that there are many barriers to change, including payment, culture, and cross-subsidies that confound the operational understanding of AHCs and the need for more effective management. But the organizational complexity of the AHC itself is a problem. It is not clear how many have a single office or authority that is able to direct the organization as a whole. Half of its business takes place in an aggressive marketplace; half of its business is embedded in a university. Linda Aiken asked to what extent AHCs need to be integrated within a university in order to integrate across the disciplines and address social determinants of health, but Ralph Snyderman noted that getting closer to the university may provide certain benefits, but can also create even more complexity in decision-making.

John Porter noted that although it has been difficult to achieve and remains a work in progress, the federal government's Government Performance and Results Act (GPRA) may offer one model for setting measurable objectives and assessing whether results are being attained.

Improvements must be designed into the system and measured and, therefore, it is important to identify accountabilities, measure performance, and design incentive structures that are appropriate for the desired outcomes.

In response to the variety of issues raised, Charles Cutler stated that AHCs should be leaders in developing centers of excellence. There is some evidence that although AHC costs are higher, their longer-term outcomes may be better. Knowing this, however, depends on having an approach for accountability and measures of performance. He also suggested that the teaching and research functions need a different balance. The shifting disease burden of the population toward chronic conditions suggests an urgent need to improve the care for such patients in order to affect the health of the population. A shift is needed as to how investments are made and where gains in health are likely.

SECTION II—CREATING A VISION FOR THE FUTURE

The Clinical Service Role

Joseph Bloom, M.D., Dean Emeritus, Oregon Health and Science University (OHSU)[3]

Dr. Bloom described the OHSU organization. OHSU has existed since 1887, but in 1995, it was established as a public corporation and as a free-standing university. It remains state-affiliated, but is not considered a state institution. It has established an integrated management and health system under a central officer and trains over half of the health professionals in the State of Oregon, sponsoring more than 95 percent of the graduate medical education programs in the state. OHSU has a history as a safety net provider that is based on its origins as a county hospital.

Dr. Bloom described two major initiatives undertaken by OHSU to strengthen its clinical care role. The first was the need to alter the relationship with the state and become a free-standing university. This came about because of the competitive marketplace and the AHC's deteriorating physical plant. By removing OHSU from the state's higher education system and becoming a free-standing university with its own board of directors, they established a unique governance structure that made it easier to obtain bond funding, upgrade facilities and enter into several mergers. The second initiative was a set of organizational shifts to streamline management. Centers of emphasis and excellence were formed, each multidisciplinary and integrated within the schools of the university, the hospital and departments in the medical school. They created a single faculty practice group that replaced 35 different entities. The financial meaning for tenure was defined to an endpoint that is affordable. A single academic track was preserved for both clinicians and scientists. OHSU is committed to a funds flow report so departments can be compared internally as well as to external benchmarks.

Current challenges facing OHSU include a nursing strike that is now in its fifth week. Additionally, the recession has given the state a large deficit, which will affect the amount of funding support that OHSU receives from the state, potentially resulting in a significant decrease. Finally, increasing regulatory scrutiny, such as the Health Insurance Portability and Accountability Act (HIPAA), clinical and research audits, personnel law and other factors, all increase the costs of doing business for AHCs.

[3] Dr. Bloom stepped in for Dr. Peter Kohler, who was originally scheduled to speak. Dr. Kohler's prepared remarks are included in Appendix C.

Ezra Davidson, M.D., Associate Dean, Charles R. Drew University of Medicine and Science

Dr. Davidson described Drew as a private university, affiliated with the University of California, Los Angeles. The King-Drew Medical Center is the heart of the clinical enterprise and is a core safety net public hospital in the area. As such, it faces several front-line clinical issues. First, the hospital is indeed recession-sensitive and is facing a serious budget deficit that creates challenges for care. About one-third of the hospital's budget is generated from Medicaid, about 28 percent comes from disproportionate share funding and about one-third comes from general funds of Los Angeles County, via a contract that provides the faculty and physician supervision for the resident staff. The county funds are especially sensitive to economic changes.

Second, the direct delivery of care is challenged by a discordance between what is taught to young health professionals and what is needed in practice. Little progress is being made in resolving social and health problems, yet there is inadequate attention to teaching prevention and behavioral or lifestyle changes needed to effectively address society's social problems. Direct delivery of care is also affected by the different health care needs, cultures and languages among the populations they serve. The growing diversity of the population, reflected in the multiple languages spoken, affects the efficiency of care provided and the ability of patients to receive needed care. Administrative costs are added on top of the educational costs of treating patients. Better attention should be paid to providing the types of health care benefits that can increase access to care and reduce costs, and reducing the reliance on emergency rooms as the last resort. Dr. Davidson is also concerned that existing disparities in health care outcomes may worsen if the availability of clinical services is reduced for patients in need.

Third, the capital needs are high for both the physical plant and for updating systems. The medical center's physical plant requires greater amounts of capital to maintain. In addition, information technology systems are needed to achieve operating efficiencies. Fourth, better approaches are necessary to engage low-income, high-risk populations in clinical trials. Suspicions about AHCs must be overcome in order to help such patient groups participate in the types of research that will advance understanding of special health needs and how to address them.

Discussion

During open discussion, several issues were raised, all of which related to organization and governance. Roy Wilson commented that the governance structures in the two institutions represented by the presenters are very different. In Oregon, a President oversees the entire structure, whereas at Drew, because the sources of revenue are so diverse, there can be many parties directing activities, such as the county, UCLA, and the medical school. In other AHCs, the AHC does not own the clinical enterprise. He asked what is known about the advantages and disadvantages of alternative structures. Robert Dickler indicated that the Association of American Medical Colleges (AAMC) has done several studies trying to understand AHC organizational structures. One general observation is that where there is a close and integrated relationship between the medical school and the major teaching hospital (not necessarily joint ownership), there is typically a more research-intensive environment than in settings where there is neither the legal nor philosophical integration of the two entities. As a result, AHCs may take different orientations (and make different decisions) relative to care delivery, with some AHCs viewing the delivery of clinical care as an adjunct to the education and research mission, and others viewing clinical care as the central part of the tripartite mission. Elaine Rubin commented that the Association of Academic Health Centers (AAHC), which includes both allopathic and

osteopathic schools, has found many innovative approaches in how AHCs link with their clinical enterprise and develop models for community outreach.

Larry Lewin noted that for those AHCs that are heavily involved in the safety net, organizational arrangements most often take the form of affiliation contracts between the medical school and public agencies for the purpose of providing medical faculty for clinical care. These affiliations between AHCs and public agencies are exceedingly difficult to understand, making it almost impossible under current circumstances to achieve any level of accountability. Physician productivity is often poor and physicians may refer patients who have insurance to non-safety net institutions, depriving the public institutions of revenues. In his experience, some of the public hospitals in New York have found it better to build relationships with medical staff in the community than to rely on contracts with the medical schools.

John Rowe noted that when considering issues of clinical affiliation, the Veterans Administration system is an important partner for many AHCs.

In response to the comments raised, Dr. Bloom commented on the interaction between the clinical care role of AHCs and the educational role. If an AHC wants to grow on the clinical side, the needs of the teaching faculty, training directors, department chairs, residency review committees, and professional societies must be met. It will not be possible to recruit a department chair to run the clinical mission and not attend to the educational mission. Dr. Davidson responded that a variety of governance structures exist today and will in the future as well. Such diversity is not likely to diminish. On an issue specific to nursing, the California state legislature is in the process of regulating nurse-staff ratios, creating a huge financial burden for hospitals. Such a trend could have significant impact on AHCs.

The Education Role

A Perspective from Medicine
Edward Hundert, M.D., Dean, University of Rochester School of Medicine and Dentistry

Dr. Hundert stated 10 things that in his view, will be different in the 21st century compared with the 20th century. These include: 1) new applications of science and technology; 2) less time per patient encounter; 3) more cost pressures; 4) older and more multicultural patients; 5) greater use of computers and information technology; 6) more population-based thinking with an emphasis on prevention and wellness; 7) increased accountability; 8) more interdisciplinary practice; 9) more ambulatory care; and 10) an ever-increasing rate of change. He saw the first and tenth items as the most important. These factors create an imperative for AHCs to shift their focus from teaching to learning and to create learning environments. The idea that health professionals are learning how to learn for a lifetime must be taken seriously. Rather than taking time out to learn, the emphasis should be on perpetual learning and creating high learning environments at all stages of education. For example, in the traditional paradigm, the work is done when the material has been covered. In the new paradigm, the work is done when competencies have been achieved. Everything about the stages of medical education work against this, with each level of undergraduate, graduate and continuing medical education having different accreditation standards, rules and regulations.

The Flexner report[4] required the completion of a basic science curriculum before initiating the clinical curriculum. According to Dr. Hundert, this produced an unintended side effect of implying that basic science is put aside when entering into clinical care—the very opposite of what should be conveyed. The University of Rochester has implemented the double helix curriculum, in which the clinical strand and the basic science strand weave through the whole four-year curriculum. Dr. Hundert highlighted a few elements of this curriculum. The first course after a week of orientation is called "Mastering Medical Information." Taught in the first four weeks and last two weeks of the first year, students learn how to access and navigate through information, gaining skills in data analysis, biostatistics and epidemiology. By the fifth week of medical school, students often know more about how to access and critique the literature than the majority of the faculty. The expectation in the curriculum is that students are self-directed learners, using their new skills to obtain needed information. Another highlight of the Rochester program is student assessment. At the end of the second and third years, there are two 2-week comprehensive assessments of competency. Students meet with their faculty advisor and are expected to create an individualized learning plan to work on their relative weaknesses. The only grade they receive is based on how well they use the data to identify their relative weaknesses, create a learning plan and execute the plan.

Another aspect of the curriculum is that advanced basic science blocks are part of the hospital portion of the curriculum, bringing the basic science faculty into the hospital. The effect on the faculty is profound. When the virologist talks to the students about human papilloma virus and the potential for a vaccine to prevent cancer, it happens after the students have seen women with cervical cancer. Students become hungry for information on the basic sciences. Additionally, the virologist interacts with the gynecologist and the oncologist to jointly design new translational research programs and clinical interventions, so faculty members interact in different ways.

Another unique element of the curriculum is a one-month clerkship in the fourth year called "community health improvement." Several years ago, the University of Rochester added a fourth mission to its portfolio, namely to make Rochester, New York "the healthiest city in America." The content of the clerkship is determined by the health department's assessment of the local health needs, and varies from providing the pneumococcal vaccine in nursing homes to working with teenagers to quit smoking. The academic content of the clerkship is focused on public health and epidemiology.

In summary, Dr. Hundert recommended that the education of health professionals cross boundaries between undergraduate, graduate and continuing education, as well as across hospital, office and community settings.

A Perspective from Nursing
Colleen Conway-Welch, Ph.D., R.N., Dean and Professor of Nursing, School of Nursing, Vanderbilt University

Dr. Welch identified four trends affecting the future of clinical education: work redesign, e-health, workforce issues and bioterrorism. In terms of work redesign, Dr. Welch identified the skill sets that clinicians should have when they graduate: 1) how interdependent teams function, 2) information technology, 3) systems thinking, 4) influence strategies (for those reporting to you and those to whom you report), 5) relationship building, and 6) communications skills. Work

[4] The Flexner Report refers to a report in 1910 by Abraham Flexner to the Carnegie Foundation that defined the requirements for medical education. It can be found at www.carnegiefoundation.org.

design can be influenced by "disruptive technologies,"[5] through which new systems of care can be built that are characterized by lower cost, higher quality and greater convenience. New opportunities created by disruptive technologies can also challenge the roles and responsibilities of health professionals. For example, at Vanderbilt, there are about 40 nurse faculty practices. When physicians come to the clinic, they are often surprised at the level of illness and comorbidities among the patients seen. The experience at Vanderbilt has shown that the knowledge base of family practice physicians and of experienced nurse practitioners has many similarities. Work redesign needs to consider the roles of various health professionals in caring for patients.

Dr. Welch believes that the fourth mission of AHCs should be to ensure that the promise of e-health is met and sustained. The promise of e-health is to get the right information to the right person at the right time and at the right place, ensuring optimal interactions of people. This will also call for greater interdisciplinary education. Although the work described by Dr. Hundert is exciting, it would be virtually impossible to bring nursing and medical students together because of scheduling problems. If AHCs are to use e-health and create optimal learning environments, more partners in more disciplines will be needed. Furthermore, Dr. Welch noted that the current structures (School of Medicine, School of Nursing and department chairs) may not be the best model for developing interdisciplinary education.

In terms of workforce issues, Dr. Welch believes the nursing shortage results from a variety of factors, including more opportunities for women. Another factor is that the current nursing model applied in hospitals uses undertrained nurses in very complex settings and then burns them out. The majority of nurses in the workforce are graduates of two-year programs or diploma programs, not baccalaureate programs. The addition of requirements such as mandatory overtime only exacerbates problems of burn-out. In Dr. Welch's view, the nursing baccalaureate degree is a generalist degree in a specialty world, and is not well differentiated in the marketplace. Greater attention should be given to the development of educational models that can create seamless opportunities for nurses to move from associate degrees to masters degrees so there is a continuum from clinical practice to management. In addition, more training needs to be provided for nursing leadership in the management of complex activities and organizations.

Finally, recent events related to bioterrorism call for greater interaction between AHCs and the public health system.

A Perspective from Public Health
James Curran, M.D., M.P.H., Dean and Professor of Epidemiology, The Rollins School of Public Health, Emory University

Dr. Curran noted that there are 31 accredited schools of public health in the United States and all are located within AHCs. Twenty of them are in the largest AHCs in terms of research funding, which means that the majority of the schools of public health are in the larger AHCs. In addition, there are approximately 60 accredited public health programs, most of which are also located in AHCs. Some unique aspects of Emory's Rollins School of Public Health is its proximity to the Centers for Disease Control and Prevention and the presence of the medical school, nursing school and public health school on a single campus. This makes it easier to develop complementary, rather than competitive, programs (e.g., the School of Medicine need not have a department of epidemiology, as it is available in the School of Public Health).

[5] See Christianson, Clayton M., Richard Bohmer and John Kenagy, "Will Disruptive Innovations Cure Health Care?" *Harvard Business Review*, September-October 2000, p. 102-112.

Schools of public health are, by nature, interdisciplinary, and have a strong focus on the social sciences, such as anthropology, psychology and economics. Dr. Curran sees this link to the social sciences, as well as the biologic sciences, as an important part of the academic mission of AHCs. Without such linkages, the AHC runs the risk of becoming "just another great big megaplex of hospitals." Dr. Curran also believes that schools of public health are naturally innovative and entrepreneurial, in part, because of poor funding and small endowments compared with other schools. He believes this helps keep schools of public health focused on their missions.

Dr. Curran believes that schools of public health provide a link to communities. Many of the causes of health problems facing communities today—smoking, violence, asthma, AIDS—are not necessarily related to the activities undertaken by AHCs. "Public health is what we, as a society, do collectively to assure the conditions in which people can be healthy."[6] The perspective of public health is based upon the health of populations, in contrast to the necessarily individual perspective of health care practitioners. This population-based perspective results in an emphasis on prevention and priority setting with broad input. Public health priorities are (or should be) determined by: 1) the number people affected or potentially affected by a problem, 2) the severity of the problem; and 3) the ability to affect either of the first two.

Discussion

Linda Rosenstock, M.D., Dean of the UCLA School of Public Health, briefly described another Institute of Medicine committee that she currently co-chairs on "Educating Public Health Professionals for the 21st Century," since the work of that committee is likely to complement the work of the Committee on the Roles of Academic Health Centers in the 21st Century. The charge of the Committee on Education Public Health Professionals in the 21st Century is to consider a framework for training future public health professionals, focusing on what schools of public health are doing, but recognizing that much training for public health professionals comes from other parts of the AHC. She noted that AHCs influence public health, whether intentionally or not. The interface between medicine and public health is likely to take on even greater importance in the future and it will be important to consider how collaborative training and research can be undertaken..

Most of the remaining comments raised during open discussion related to the importance of interdisciplinary education approaches.

Christine Seidman noted that although each presenter described innovations within their own disciplines, there was a lack of connection between the paths pursued by each of the presenters, because each presenter focused only on his or her discipline. Education innovation does not appear to be crossing boundaries, although she believes the pressure to do so is likely to become even more important in light of the genomics revolution that will identify disease in its preclinical phase. Darrell Kirch noted that despite an understanding of the need for more interdisciplinary approaches in clinical care, education programs do not support that principle. The disciplines are educated separately, and then in practice, tensions arise over scopes of practice. He believes that overcoming this lack of interdisciplinary approach will require the creation of common learning venues around the issues that transcend disciplines, such as professionalism, ethics, communications, or public health.

[6] Institute of Medicine, *The Future of Public Health*, Washington, D.C: National Academy Press, 1988.

Paul Ramsey noted that it is indeed possible to break down barriers across the disciplines. At the University of Washington, six schools have participated in the sponsorship of interdisciplinary programs. One of the challenges of interdisciplinary education is the shift of care to the ambulatory setting and now into the home setting. This may make it even more difficult to implement interdisciplinary education programs in the future. John Porter noted that people outside of health care (i.e., patients) see the boundaries as artificial, so integration across the health professions is likely to take on greater importance.

Dr. Hundert noted that although there is much disagreement in the education community, there is general agreement that medical education can take "altruistic, other-oriented people and turn them into bitter cynics in four short years." Better approaches are clearly needed.

Elaine Rubin suggested that education goals, even within disciplines, appear to be changing. For example, at one time the Bachelor of Science in Nursing (B.S.N.) was the goal; now its role is less clear (as suggested by Dr. Welch). It appears that the disciplines may need to resolve internal issues to effectively move toward greater interdisciplinary approaches. Roy Wilson suggested that even larger issues affect the image of nursing and that incremental change will not be sufficient. In response, Dr. Welch commented that better modeling is required in medical school of physician/nurse relationships.

Some participants raised issues regarding the role of the university in enabling greater integration across disciplines. Larry Lewin suggested that a better understanding is needed about the relationship between the university, individual schools and the AHC. The Oregon Health and Science University was created as an independent university, which provided it a strength in the marketplace, but he asked how that might have affected their ability to improve coordination with other disciplines, especially those that may not be available at a health sciences university. Linda Aiken cautioned against other factors outweighing the academic imperative of AHCs. She noted that managing the delivery platform from a business point of view has become so difficult that tensions can arise between academic needs and innovation, and necessary business decisions. In response, Dr. Hundert agreed that when the delivery system changes to compete and takes an aggressive business approach, the AHC is functionally doing curriculum reform. In competing in the marketplace, AHCs need to think about how the missions interact and how they can become more synergistic rather than competitive with each other.

John Porter raised another aspect about the education role of AHCs in translating science to the public and to policy-makers, who are faced with needing to understand the importance of science and the types of investments needed. What is the role for scientists, journalists, teachers and others in this? How can education broadly reinforce the importance of science and encourage science advocacy?

Noting the presentation by James Curran, Ralph Snyderman noted that prevention has been very generic. If the health system is to take a more proactive stance, prevention will likely become more specific to particular conditions and interventions. Dr. Curran responded that physicians do fairly well encouraging prevention within their own specialty, but are less proficient at stopping something from happening in the first place. For example, breast cancer is treated, but mammography is not consistently addressed. In part, financial incentives do not support the desired professional behaviors for promoting prevention.

Jeff Goldsmith asked Dr. Hundert how was the University of Rochester was able to implement the major changes they accomplished. Dr. Hundert replied briefly that it required a comprehensive approach focused not only on the curriculum, but also on governance authority

and responsibility, resource allocation, promotion criteria and reward systems and that many things were done simultaneously.

The Research Role

Biomedical Research

Gerald Fischbach, M.D., Executive Vice President for Health and Biomedical Sciences; Dean, Faculty of Health Sciences; Dean, Faculty of Medicine, Columbia University College of Physicians and Surgeons

Dr. Fischbach commented on the remarkable advances being made today in science and biomedical research. Some of the most promising areas are in genomics and proteomics, non-invasive imaging, robotics and bioengineering and cell-based therapies. It is becoming possible to reverse disease and injury. The effects of these advances represent a type of "big science" not known before. These scientific advances and growth in NIH funding levels make it an extraordinary time to be in biomedical research.

Although this is an extraordinary time that represents major advances in medical science, there are also factors that can jeopardize their potential. The structure of the AHC itself is a problem. In Dr. Fischbach's view, "there is a desperate need to restructure departments in academic health centers." For example, the AHC enterprise faces a serious tension when trying to recruit a leader in biomedical research who can simultaneously manage a $300 million per year business for the hospital. The relationship between the biomedical research mission and the services of hospitals needs to be re-examined. There is also a great deal of redundancy across departments that prevents scientists from interacting. This hinders development of models for translational research, even though there is general agreement on the need for more research that can translate the discoveries from biomedical research into practice. Translational research needs greater attention, especially in terms of interacting with private industry and training students for career paths in this area. Although AHCs are not organized like scientific organizations (e.g., California Institute of Technology or MIT), forcing people into "outmoded phenotypes" is creating serious problems for accomplishing their various missions. This is a challenge that has been underestimated.

Another obstacle is the declining infrastructure of many medical centers and the need to renew physical plants. In many places, the laboratories and environments for research are seriously deteriorated. Finally, a major obstacle is the loss of time available to scientists to think and create, which is the core of their work. An overwhelming amount of time is being spent in seeing patients, writing grants, raising money and focusing on publications. AHCs train many physicians and other clinicians, but also have a large number of doctoral candidates in their organizations. The faculty is pulled apart by two very separate missions: training people in the science of medicine and training people in the art of medicine. Rather than being pulled apart, greater attention should be focused on how to integrate disciplines across science and clinical medicine, as well as across nursing, public health and dentistry. However, this requires examining the structure of the AHC.

Academic health centers have the opportunity to spur a new medicine with a much more preventive bent by focusing on early diagnostic tools and using the new sciences to go far beyond traditional clinical medicine to improve the public's health. Achieving this, however, will require better cooperation within academic health centers, but also between them.

Clinical Research
Ralph Snyderman, M.D., Chancellor for Health Affairs; Executive Dean, School of Medicine; President and CEO, Duke University Health System

Dr. Snyderman began his comments by noting his firm belief that the overarching mission of academic health is the societal good of improving the public's health. The question is how to fulfill that mission, especially in this period of great opportunity to take research discoveries and translate them into health benefits. A number of research areas are showing great promise, including genomics and proteomics, high throughput screening, and new therapeutics. Translating this new knowledge into practice will require greater emphasis on bioinformatics and biostatistics, development of best practice models and outcomes research. These are new areas for clinical research.

Greater collaborations will also be required between academic institutions and industry, as well as with the federal government (specifically, the National Institutes of Health). The strengths of academia include core technology development (cloning, molecular biology, sequencing, proteomics, etc.), new technologies, specialized preclinical development models (e.g., animal models in drug development), trained manpower, source of patients for clinical trials (especially those with complicated and/or chronic diseases), and access to a health care delivery system. The strengths of industry include the identification of leads, drug development, preclinical development, big clinical trials and business expertise, especially for moving an idea down the pipeline to clinical application.

There are a number of issues that AHCs have to confront in terms of clinical research. The first is to "get our own house in order." Greater attention must be paid to making the AHC operationally efficient. AHCs need to be better partners with private industry. Issues related to human subject protection need to be addressed rapidly, including the education of clinical faculty and oversight of their studies. Upgrading and maintaining the infrastructure needed to do clinical research will be costly. At Duke, spending on the research infrastructure has increased many times over, and most of these expenses are not reimbursed. Finally, institutions will need to decide what their clinical research capabilities are and whether that is a focus on one aspect, such as translational research or a comprehensive agenda that includes large phase III clinical trials.

Perspectives from Private Industry
Samuel Broder, M.D., Executive Vice President, Celera Genomics

Dr. Broder sees the primary missions of academic health centers as: 1) defining and providing state of the art care for the patients they serve, 2) generating knowledge, 3) disseminating knowledge, 4) mentoring the next generation of health professionals, 5) providing post-graduate education to the current generation of health care professionals, and 6) providing community service and outreach. The underlying assumption is that AHCs will serve the public good and are "obligated to serve medicine and science, de-coupled from the exigencies of commerce." Dr. Broder proposed that the metrics of success will be based on improvements in morbidity and mortality statistics, community goodwill, publications, and respect by students and peers.

The primary mission of private industry, focusing on pharmaceutical and biotechnology organizations, is to create products and services that are valued by society, using the metrics of the business world (revenues and shareholder value), generating knowledge and disseminating that knowledge. Teaching and post-graduate education may be important goals, but in most cases, the pharmaceutical or biotechnology company has a legally enforceable fiduciary

responsibility to the people who provided the capital underlying the existence of the organization. That obligation cannot be unilaterally waived and may not include education.

In Dr. Broder's view, the question is how to maximize the interactions between academic health centers and private sector organizations to create the types of relationships that many seek. One of key elements is disclosure. Principles should be established to ensure there is disclosure at every phase of the mission statement of both organizations. There should be disclosure to the academicians and administrators of the institution, to the institutional review board and to patients. Disclosure should include information about who is representing whom, relationships between an individual at an academic health center and a private company (or vice versa), and sources of support at an official level, a laboratory level, a clinical level or a personal level. Equity interest by an investigator need not automatically prohibit participation or leadership on a study, but it should be disclosed.

As a final note, Dr. Broder believes that it is important for AHCs and private industry to enter into relationships with mutual acknowledgement of fallibility. Original positions may change as progress on a problem moves forward. In Dr. Broder's view, some of the most significant problems encountered have originated from a sense of invulnerability. All parties will need to recognize that problems can have many solutions.

Health Services Research
Ralph Horwitz, M.D., Yale University School of Medicine

Dr. Horwitz described health services research as broadly focusing on both the system of health care and the services it provides. This includes issues in organization and financing, access to health care and quality, the efficiency of the system and a focus more on doctors and other providers than on individual patients. This is distinct from clinical epidemiology, which has a focus on patients and outcomes, including the risk for developing disease, susceptibility to treatment, outcomes and technology assessment, and effectiveness of interventions in individual patients. Both omit a focus on public health infrastructure, on populations at risk and patterns of disease, on forces of morbidity and mortality and early warnings of epidemics. The latter point is emphasized to illustrate that much of what AHCs do is very separate and distant from what their fundamental mission ought to be, namely, improving the public's health.

Dr. Horwitz described the fundamental concepts of health services research in order to understand its role within AHCs. The ethos of the health services is defined by the questions asked, the data collected, the methods used, the inferences drawn and the policy recommendations made. The questions of health services research run the spectrum from effectiveness to efficiency to the organization of care and questions of value. The methods used include experimental trials, such as testing interventions for effectiveness; observational studies; statistical modeling and meta-analyses. Data sources are patients, physicians and other clinicians and large databases. The emphasis on data and data management, and especially the transforming of data to knowledge, is essential to universities and, therefore, to academic health centers.

One of the critical issues in developing inferences and making recommendations is the inability to effectively differentiate the benefits that are found for groups when applied to individuals. If a study claims a 30 percent reduction in mortality from heart attacks as the result of a new treatment, it is not known whether every patient will experience that reduction in risk or whether the population as a whole will experience the reduction, with some patients achieving complete protection and some patients receiving no benefit at all. This is a fundamental issue in how we think about the value of the data and use the knowledge to improve health.

Health services research has made a number of achievements, but also faces a number of challenges for the future. One is the lag in funding compared with other areas of research. Health services researchers are less effective than biomedical researchers in securing funding. Consensus around priorities and a commitment to resolving specific problems could help to guide funding. More physician investigators are needed and they need to be better prepared to conduct health services research. Too many physicians are conducting work in health services research with insufficient training and experience. Issues related to human subject protection need to be addressed. Interdisciplinary research is critically important, but numerous barriers exist, including separate laboratory buildings that hinder interactions and a focus on disciplines rather than scientific problems. Interestingly, a number of AHCs have a health service research unit, but in general, they have not advanced the field. Data on their value to the internal operations of AHCs, its costs and quality are largely unavailable.

Discussion

Larry Lewin suggested that AHCs would seem to be natural supporters of health services research, but there seems to be little demand for it from practitioners in academic health centers. He asked if the impetus for health services research needs to come from a broader constituency base, similar to the broad interest that supported expanded funding for NIH. In terms of health services research, Dr. Snyderman noted that it is becoming increasingly clear that we are going to have a growing amount of data and information, and may not be able to use it without stronger health services research to implement new discoveries. Dr. Broder believes that part of the lack of a constituency for greater health services research is its focus on cost-effectiveness, which the public may perceive as limiting their options for care. However, Dr. Horwitz responded that the focus of health services research is on effectiveness—studying what works and what does not—so that people are not exposed to risk without benefit, and that is clearly in the public's interest.

Nancy-Ann DeParle asked why AHCs that have established health services research centers have not been more successful in using them to improve their own operations. Dr. Horwitz responded that, in his view, health services research in AHCs has not been more successful because they have had confusion about purpose. Too often, AHCs view such centers as a tool for managing resources within their institutions, but the faculty view themselves as joining the organization to do research. This conflict of objectives disappoints both sides.

Edward Holmes asked about the extent to which AHCs have a role as economic engines for their communities. Many would agree that AHCs have a role in generating knowledge and translating discoveries into new therapies, but also play an important role in the economies of their communities and society. Dr. Fischbach agreed that AHCs are major economic drivers in their local communities. Ralph Snyderman also agreed that AHCs are indeed economic engines for their local communities, but that AHCs should be more articulate in describing the economic benefit that research institutions have for their communities. On the other hand, Dr. Broder urged caution is using an argument of economic vitality as a reason to gather support for AHCs, as it could overtake the other issues that concern people.

Brian Biles noted that prior discussions have focused on the various missions of AHCs, and if each should be independently and fully funded. For historical reasons, NIH does not fully fund research projects and requires some cost sharing by institutions. On a related point, Christine Seidman asked whether AHCs will be able to afford to continue their research role. Will AHCs be able to conduct research in the future absent a partnership with commercial

industry? Ralph Snyderman noted that AHCs have relied on philanthropy to fund the institution's research contribution of approximately 15 percent. It is also hoped that technology transfer to private industry will be a source of revenue. Gerald Fischbach responded that although there is likely to be greater support of biomedical research from private sources, nothing will match the government's support. Over time, Ralph Snyderman believes that there will be a limited number of research-intensive institutions that will thrive and grow but that the resources may not be distributed evenly across all AHCs. His concern is with institutions that do not have a track record in research but are trying to obtain sufficient funding.

Paul Ramsey noted that one of the issues brought about by the changing science, especially genomics, is the need for people with training in computational skills. However, often the people with these skills do not necessarily have an interest in health care; they are more oriented toward mathematics, for example. He asked how people with a core set of skills in other disciplines could be attracted to applying those skills to health care. In response, Gerald Fischbach responded that there are indeed serious issues on how integrate genome sciences, genetics and computational skills. He saw two possible approaches. One is to create integrated institutes that bring together different disciplines in one center. Another approach is to rely on the university and the department of computer science and applied mathematics to make joint appointments. Samuel Broder believes that computational biology is an area where the private sector has excelled beyond the academic sector. In fact, the scientists trained in the private sector (e.g., Celera Genomics) are now moving to the public sector (e.g. NIH). It is a training model that moves in the opposite direction of what is typically assumed.

John Porter noted that AAMC recently published a guidance piece on financial conflicts of interest in research, which recommends resolution of possible conflicts of interest at the organizational level. He asked if resolution at the local level is a good approach to resolving issues of disclosure or whether there should be national standards or oversight on disclosure. In response, Dr. Broder commented that the AAMC proposal is logical, but the key element is disclosure. There should be a structure throughout the university or medical school that requires peer and community input, similar to what is done on institutional review boards. Conflicts of interest are not necessarily negative, but need to be disclosed. In his view, it is not clear that a national agency is needed to oversee such a process, although national standards could be helpful.

SECTION III: CREATING AN ENVIRONMENT TO SUPPORT NEEDED CHANGES

Critical Issues to Confront in Studying Academic Health Centers
David Blumenthal, M.D., Executive Director, Commonwealth Task Force on Academic Health Centers

David Blumenthal briefly described the Commonwealth Task Force on Academic Health Centers. This task force is completing its seventh and final year. It has published 6 task force reports with recommendations, 11 task force papers, and 44 publications in peer-reviewed journals. They have conducted surveys of faculty, residents, and department chairs and research administrators. They have also conducted analyses using secondary data from a number of sources.

The task force spent a fair amount of time looking at how market forces and financial stress affect the missions of AHCs. The "missions" were defined to include research, indigent care, education, and delivery of specialized and high technology services. The task force generally found that competition and financial stress do affect the AHC missions, both positively

and negatively. Research is negatively affected by market and other pressures. Indigent care has become more concentrated in AHCs, which may be interpreted as either good or bad for patients, but is not good generally for the AHC. There are anecdotal accounts of adverse impacts on teaching, but none were found empirically from the survey the task force conducted of residents. Specialized services also have become more concentrated in AHCs over the past five years. This may benefit patients to the extent there is a relationship between volume and outcomes of care.

The task force also found that mission-related activities do account for some of the increased costs at AHCs. These higher costs are not only related to teaching, but also to clinical research and the maintenance of standby services. In that sense, "indirect medical education" is misnamed because the higher costs found at AHCs relate to more than just medical education.

Dr. Blumenthal emphasized his willingness to share the task force data with the IOM Committee on the Roles of Academic Health Centers. Although answers to many questions remain elusive, he can help the committee identify important questions and identifyied the following ten issues that are likely to be confronted in studying the roles of academic health centers:

One, what is an AHC? An AHC can be defined as a single entity or, alternatively, as anywhere the missions are conducted, suggesting a different definition for each role. The Commonwealth Task Force on Academic Health Centers defined an AHC as the nation's 121 four-year medical schools and their owned or affiliated clinical and educational entities. One of the common things that all AHCs do is teach medical students, at a minimum. Regardless of the definition used, diversity is an abiding characteristic of AHCs. As the environment changes, this diversity may be a strength as they determine how to optimally accomplish the missions that society has entrusted to them.

Two, what is unique about AHCs? According to data prepared by the task force, AHCs conduct approximately 30 percent of the nation's health care "R&D," about 50 percent of which is federally funded. AHCs train all undergraduate medical students and nearly one-half of medical residents. AHCs provide a greater proportion of specialty services, such as burn, trauma, neonatal intensive care and organ transplant than would be expected. AHCs provide a greater proportion of charity care than would be expected, with the public AHCs providing more charity care than the private AHCs.

Three, are AHCs necessary? Dr. Blumenthal noted that in theory, each of the AHC functions can be done elsewhere. The functions need not automatically reside within the AHC and it may be useful to experiment with re-allocating some of the missions. For example, can some of the research done at AHCs (e.g., Harvard) be done at a basic science university (e.g., Massachusetts Institute of Technology)? In Dr. Blumenthal's view, if the AHC did not exist, something like it would have to be established to provide a center for clinical innovation and to translate basic knowledge into practice.

Four, o AHCs deserve public support? The missions performed by AHCs have characteristics that predispose them to market failure. The arguments for public support differ by mission, but there are powerful arguments for a public contribution to support the missions. One argument is that AHCs produce goods that have significant externalities, such as research. In addition, the conduct of the missions incurs clinical costs that are not fully covered in the marketplace. As a result, although AHCs merit public support for conducting their mission, other institutions conducting the same activities may also merit the same support.

Five, how much support should AHCs receive? The level of support should depend on the quantity of mission-related activity that society chooses to supply and how efficiently those activities can be produced. A number of trends are affecting the answers to both of those questions, including the biological revolution and growth in NIH budgets, the aging of the population and its demand for health services, and the persistence and growth of the uninsured.

Six, how many AHCs are needed and where? The answer to this depends on the response to the previous question. According to Dr. Blumenthal, it seems unlikely that less capacity will be needed in the future, although it is possible that current capacity may need to be redistributed. If capacity expands, it should be in places where local needs for the AHC missions are also growing.

Seven, if AHCs are supported, how should that support be provided? Dr. Blumenthal believes that support should be targeted to the unique things that AHCs do and that support the special missions valued by the public. There are two general mechanisms for doing this: directly or indirectly. Approaches for direct support could include an annual appropriation for the full and reasonable costs of each mission (including the associated clinical expenses that are not covered in the marketplace). A federal agency could allocate a specified amount to each institution in proportion to the amount or quality or efficiency of mission-related activities performed. Examples of direct support to AHCs include funding by the National Institutes of Health or the Health Resources and Services Administration (HRSA). Advantages of direct support are that it is transparent, rational, can be planned and is subject to accountability. Concerns with the direct approach include the unpredictability of needed funding levels and difficulty in measuring not only quantity, but also quality and efficiency. It can also require a bureaucracy to administer the distribution of funds.

Indirect support takes the form of augmented payment for clinical services. Examples are indirect medical education payments under Medicare and some Medicaid programs, the extra payments collected by AHCs in private markets, or state regulations that allocate higher clinical payments to AHCs. The advantages of indirect support are its flexibility, continuity of past ways of doing business and reward for entrepreneurship, e.g. f an organization attracts more clinical business, it can increase its revenues. The concerns include hidden payments that make accountability difficult.

Eight, how should AHCs be held accountable? The performance of mission-related activities should be measured along multiple dimensions, such as the quantity of the activities performed, as well as their quality and efficiency. Although it may be desirable to relate payments to performance, there are no accepted measures that are valid and reliable. Additionally, AHCs are often unable to collect the type of data that would be needed on individual activities because the activities are jointly produced. Additional research and development in this area is required.

Nine, what should AHCs do differently in the future? Dr. Blumenthal believes that AHCs will need to improve their management, culture and infrastructure to make the production and organization of the missions more efficient. They will need to measure what they do and disclose the measures to the public and policy-makers.

Ten, what should government do differently? In Dr. Blumenthal's view, the government should commit to supporting the real costs of providing the desired amounts of education, research, specialized services and indigent care. It should invest in the infrastructure necessary for AHCs to manage these costs appropriately, including measurement of the missions. Finally, it

should hold accountable all those who conduct mission-related activities, recognizing the difficulty of measuring what organizations do on a day-to-day basis.

Discussion

Marla Salmon asked about the value of the interface between the academic health center and the broader university, how it can be optimized and how it might influence the type of research that is conducted. Dr. Blumenthal indicated that the Commonwealth Task Force did not analyze the interface between the AHC and the university, nor is he aware of anyone who has, although he would assume there is value.

Darrell Kirch asked if Dr. Blumenthal preferred direct funding approaches over indirect approaches. Nancy-Ann DeParle asked about direct medical education funding. Dr. Blumenthal indicated that proposals to create a medical education trust fund move in the direction of direct support, but are risky if the AHCs cannot generate sufficient income. He remains ambivalent on whether direct or indirect funding is the preferred approach for funding medical education. From a policy standpoint, direct support is more desirable, but from a political standpoint, "it is much more murky."

Jordan Cohen asked if the task force perceived a need for fundamental change in the way society pays for and establishes accountability for the AHC missions and if there is strong evidence that current policies are "broken." Brian Biles suggested the need to consider what might 'break' in the future and the implications of that. David Blumenthal commented that because the health care environment is constantly changing and creating new challenges, it is not realistic to think that AHCs will not change as well. Larry Lewin noted prior discussions at the workshop that called for the redesign of the platform for the delivery of health care. Linda Aiken asked how AHCs, which train the next generation of clinicians, can create an acceptable working environment for education so people do not burn out and leave the profession. In her view, work and care processes that are redesigned in tertiary centers could serve as models for other providers. While Dr. Blumenthal agreed in principle that service delivery needed redesign however in practice, AHCs have not done this well, as demonstrated by the recent attempts at building networks. While AHCs should take a leadership role in demonstrating efficiency and being at the core of a revitalized and restructured health system, Dr. Blumenthal noted that may be asking a lot of organizations that have other missions. In order to develop and provide models, AHCs may need to reform their own environments.

Nicole Lurie asked if the proportion of R&D conducted at AHCs has changed over time. David Blumenthal indicated that the Commonwealth Task Force did not look at changes over time in this. Although private industry has expanded its research, the NIH budgets have also increased, so it is difficult to assess the change over time.

Christine Seidman asked what is known about the causes of inefficiencies in each mission activity. David Blumenthal responded that there are many causes of inefficiencies, but one is the lack of accountability. If an activity is not measured and its productivity is not examined, it is not as likely to be done efficiently. Not all inefficiencies are externally imposed. Managerial flaws exist that have lasted over time and have been difficult to address in the complicated institutions represented by the AHC.

Roy Wilson asked if medical education is a public good. In Dr. Blumenthal's view, medical education merits public support, but he would not classify it as a public good. Education does indeed have value for the individuals who obtain it, but it also imposes clinical expenses on

the organizations that conduct education programs that cannot be captured in the private market. Ultimately, medical education provides consumer protection in that if patients cannot judge the qualifications of physicians themselves, medical education ensures that practitioners have received adequate training.

James Curran asked if it would be "simpler" to define support for the medical school and its affiliations rather than for academic health centers, so that the emphasis is on supporting the academic mission rather than "rescuing hospitals and inefficient health centers." Dr. Blumenthal responded that from a political standpoint, there could be advantages to defining the AHC from its medical school, but that is not a definition of where the work gets done. Additionally, AHCs vary in what they produce. Some primarily train medical students. Others provide large amounts of indigent care or specialized services. Some do a great deal of research and some do very little. If a single definition is used, it should be inclusive of that variation.

Robert Dickler noted the appeal of examining each mission and its own bottom line, but questioned whether each mission can actually be viewed separately given the joint production function. Furthermore, if each mission is supported through a direct mechanism, what benefits of the joint production function might be lost? Dr. Blumenthal responded that some institutions do not produce joint products. For example, some AHCs focus almost entirely on education, but do little in the other missions. The joint production function is important and will make it difficult to hold AHCs accountable on a mission-by-mission basis, but we should still try to push forward and measure the productivity of each mission.

Claude Bennett suggested that accountability implies an ability to measure AHC performance in every mission and in every institution. Although we can measure research performance, it is less clear how that can be applied to other missions. David Blumenthal agreed that measurement can be improved. In education, the Accreditation Council for Graduate Medical Education (ACGME) has done extensive work. Other existing sources, such as AAMC's survey of residents, could be used more effectively. But it will be difficult to come to any precise, defined measures that everyone can accept.

Financial Issues Affecting the Future of Academic Health Centers
Bruce Vladeck, Ph.D., Senior Vice President for Policy, Mount Sinai/NYU Health

Dr. Vladeck addressed five points in his presentation—joint products, the role of Medicare, public support for AHCs, capital, and why he believes AHCs are so expensive.

The first issue related to the joint production function in AHCs. From a technical perspective, joint production means that costs cannot be allocated rationally across the functions. Revenues can be allocated, but allocating costs is intrinsically arbitrary. The joint production function also alters the meaning of cross-subsidies. Purchasing a clinical service from an AHC automatically provides some level of support for teaching and research. The same service may be purchased from another non-academic health institutions at a lower price, but if one tries to determine how much of the payment is for the clinical care and how much is for other missions, it is an arbitrary process.

Dr. Vladeck's second point related to how public subsidies are provided to AHCs. Medicare is a poor mechanism for supporting AHCs, but it is the only lever the federal government can use. The goal of Medicare is to provide its beneficiaries access to high-quality care in a way that is at least equivalent to that of the average citizen. If Medicare beneficiaries are going to have access to AHCs, it is clear that the care will be more expensive than other

institutions. This was not a problem when public policy directed that costs be reimbursed. But when the prospective payment system (PPS) was implemented, the reasons for the greater expense could not be disaggregated and was built into PPS through indirect medical education. Now, the indirect payment mechanism is used as the tool to meet other goals, such as workforce goals, because it is the only tool available.

Dr. Vladeck's third point related to how public support is provided to AHCs. In his view, the thinking about support for AHCs has been "fixated on Medicare indirect medical education and direct medical education payments and the hospital prospective payments. In fact …. the principal driver of behavior, on a day-to-day basis, of life in academic medical centers is the income of the faculty, not the income of the residents. Faculty income is a Part B issue." He conjectured that AHCs experienced more turmoil with the introduction of the resource-based relative value scale for physician payment than from all the changes made in medical education payments. The significant growth in clinical faculty over the last decades has fueled the growth in clinical service revenues, which affects decision-making in AHCs more than hospital revenues. If public policy is to affect AHCs, there needs to be much greater consideration of how physicians get paid.

Dr. Vladeck's fourth point related to capital. "AHCs have an enormous appetite for capital." Research is growing at AHCs, which requires capital to support new space and equipment. New technology comes onto the market in steady waves and the entire health care industry is in a catch-up process relative to information technology. In the late 1980s, the transition to PPS led Medicare to remove the pass-through of capital expenses. Prior to PPS, hospitals that were operating on a break-even basis could issue bonds and obtain reasonable ratings on the debt because the debt service was a pass-through under Medicare. After PPS and elimination of the capital pass-through, AHCs are now evaluated by the rating agencies in the same manner as any other organization. That means having a margin of at least 3-4 percent to obtain a reasonable rate on the bonds. It also means that AHCs may not be able to acquire more debt at a time when the demands for capital are increasing. The issue of capital for AHCs has not received adequate attention and will slow the growth of important improvements.

Dr. Vladeck's fifth point addressed the issue of why AHCs are so much more expensive in the first place. All costs associated with clinical services at AHCs tend to be higher. The emphasis on Medicare payment policy and trying to measure costs avoids the core question. Dr. Vladeck believes that the real reason AHCs are so expensive is because they are academic, and academic institutions are inherently inefficient in their governance, organization and management. From his view, the real public policy question is to what extent it is good to have lots of AHCs in this country. Over time, we have realized they cannot be self-sustaining because of the costs of their clinical enterprise. We have to find ways to support them, but if we get too sophisticated in thinking about what they do or how to subsidize them, we are fooling ourselves in how precisely we can identify and divide costs across the missions or measure the products and output of the AHC.

In closing, Dr. Vladeck asked that if the capital subsidies were addressed and if there were adequate subsidies for uninsured and under-insured patients (or there were no uninsured people), would that be sufficient support for AHCs to conduct their missions?

Discussion

Jeff Goldsmith asked why higher costs should be paid to AHCs for their clinical services, when Medicare has an obligation to function as a prudent purchaser for its beneficiaries and

health plans have to function as prudent purchasers for their employee populations. Along a similar line, Al Dobson noted that although AHCs are more expensive, approximately 80 percent of the care provided at AHCs is "bread and butter" care that can also be obtained at community hospitals. In response, Dr. Vladeck agreed that although about 80 percent of the care provided at AHCs can be obtained at community hospitals, the premium paid to AHCs supports the other approximately 20 percent that represents the high-end monopoly services provided by AHCs, such as the neonatal intensive care unit. The costs of the high-end monopoly services are spread over the more conventional services, which are the ones that produce the revenue for AHCs. One approach would be identify those expensive, specialized services that are truly community resources, and provide subsidies for those.

Robert Reischauer asked how a resource-based, relative value scale might be adjusted for physicians working in AHCs and to what extent it might be geared to support desired public goods as opposed to other activities. In response, Dr. Vladeck suggested the need for a systematic look at physician payment.

Robert Dickler asked if the clinical role of AHCs should be constrained. For example, AHCs should not conduct certain activities that are better performed in the community, with the understanding that the AHC has a "franchise" on the subset of activities they do perform. This would require a mechanism for meeting the compensation requirements of faculty on a reduced case load. Dr. Vladeck responded that such an approach may make sense from an economic and education perspective, but is complicated by where patients want to receive their care. It is also possible that such an approach might increase costs because third- and fourth-year medical students (and their extra costs) would be "sprinkled" throughout the community, which could raise costs in the aggregate.

Larry Lewin asked to what extent AHCs can successfully compete in a managed care environment, given their joint production. Dr. Vladeck responded that some have done well and others could have done better if there was a different interpretation of antitrust legislation in terms of the way AHCs work with their physicians to negotiate with insurers. Although price is a driver in the market, it is not the only factor.

Marla Salmon commented that, in the past, nursing schools have been immune to some of the pressures facing AHCs and medical schools because they did not have clinical revenue. However, that is no longer the case and nursing is increasingly finding itself in a precarious position of financing education. Dr. Vladeck responded that adequate financing of baccalaureate and masters nursing education will never be effectively addressed until the issue of non-baccalaureate trained nurses is resolved.

Paul Ramsey asked how financial issues have affected the ability to deal with rural workforce issues and the role of AHCs for large rural areas. Dr. Vladeck responded that in his view, it is uneconomic in the modern world to provide state-of-the art, high-quality medical care to residents in isolated rural communities. It will not be possible to have a hospital or specialty practice or even a primary care group in many parts of rural America without some form of subsidization.

Christine Seidman asked if the joint production function included only the costs of clinical care and education, or if the research function is also included. Dr. Vladeck stated that the assumption is that the AHC will absorb a certain amount of the costs for research, especially start-up costs. However, it may be possible to separately identify more of the expenses

specifically related to research than can be done in education, for example. Additional research is needed in this area.

An AHC's View on Cross-Subsidies and the Implications for Shifting Priorities
Darrell G. Kirch, M.D., Senior Vice President for Health Affairs; Dean, College of Medicine; and CEO, Penn State Milton S. Hershey Medical Center

The focus of Dr. Kirch's comments were on the interactions between the medical school, the faculty practice plan and the hospital. Between 1960 and 2000, the population grew 56 percent, the gross domestic product grew almost 400 percent, the number of physicians grew by about 175 percent, the number of medical schools increased by just over 50 percent and the number of medical graduates grew by about 124 percent. This represents the growth in the education role of AHCs. On the research side, basic science faculty grew by over 330 percent, faster than the growth in the number of students. The most dramatic growth has been in the growth of the clinical enterprise, which experienced growth over 1,000 percent in the same time period. Most of this growth in faculty can be attributed to the desire to increase revenues.

The AHC receives revenues from a variety of sources, including tuition and appropriations, grants and contracts, and physician and hospital revenues. These revenues go into a single pool from which these diverse revenue sources are mingled together and are used to support the AHC missions in clinical care, research and education. In Dr. Kirch's view, this pool of mingled funds needs to be made clearer and more rational. The lack of clarity in that process creates assumptions by people working in AHCs that are not necessarily supported by facts. For example, people will say, "we're working harder for less." In reality, faculty compensation has been leading inflation by a significant margin. Another common statement is, "No one pays us to teach." However, evidence shows that tuition for medical school has increased and that 55 percent of medical students graduate with debts of over $75,000. The average tuition nationally now is over $22,000 per year. If all the tuition and state appropriation dollars were divided by the number of current students, it would come to about $67,000 per student, suggesting that in most state schools, revenues are probably sufficient to support the teaching mission. Another common statement is, "Our research makes a profit for the university and they don't share it with us." In reality, institutions do not recover their full costs from NIH grants and, additionally, fund the start-up costs of investigators who occupy laboratory space, but do not obtain grants.

Dr. Kirch identified the keys, in his view, to designing a better system. The first part is understanding the funds flow. Dr. Kirch has been in two AHCs where efforts were undertaken to understand each mission's financial performance, so it is indeed possible to accomplish. At Pennsylvania State, both the research mission and the education mission have deficits, but the clinical enterprise is profitable. They have also explicitly identified an administrative function that technically nobody pays for, so that also represents a deficit. The clinical enterprise profits are not sufficient to fund the combination of deficits, so the balance is made up through endowment and other income. Other schools may experience different results. When Dr. Kirch worked at the Medical College of Georgia, where there was strong state support, the education mission was profitable and subsidized the research and indigent care missions.

The second part to designing a better system is program assessment. In looking at programs, Dr. Kirch includes the specific activities that are run in each department because each department has many different programs. Programs should be examined from two perspectives—their contribution to the mission and their financial performance. Some programs make important contributions to the mission, but will never cover their costs, such as the libraries.

Those programs are, and always will be, underwritten. This process helps to identify priorities and direct investments.

The third part to designing a better system is quantifying and valuing productivity. Although faculty may resent this process as being intrusive, it also sheds light on the common knowledge that the organization tends to under-reward high producers and over-reward low producers. Assessing productivity requires an agreement on the mission metrics to measure productivity. AAMC has done work in this area to estimate, for example, how much time should be allocated for preparing a lecture or for teaching undergraduate medical students.

The fourth part of designing a better system is to rethink budgets. We have to "open the books" so that department chairs can understand the budgets of the system as a whole. In Dr. Kirch's view, the departmental structure is not the obstacle to change. Rather, it is the lack of transparency in the core financial information and planning for the organization.

Discussion

Three questions arose regarding cross-subsidization. Jordan Cohen pointed out that in his view, external funding is not adequate, although he agrees that fixing these internal operational management issues would go a long toward relieving much of the stress that currently exists in the institutions. Jeff Goldsmith suggested that if the hospital and its clinical services are the primary source of capital for many AHCs, then the hospital's primary purpose becomes earning the profit so the funds can be transferred elsewhere in the organization. To the extent this is true, the clinical enterprise may not receive the resources it needs to be a high performing organization. He also questioned the assumption that research has to lose money. AHCs have expanded their research enterprise and built buildings to support it, creating large fixed costs. James Curran asked if AHCs are advocating sufficiently for needed increases in the NIH salary cap for better payment of indirect costs. These are problems specific to AHCs that the university often does not understand. In response, Dr. Kirch noted that the goal of creating a better system is not necessarily that each mission be self-supporting, but rather, that more data are available and that there is a better understanding of the financial and other performance indicators of the AHC to improve decision-making. In his experience at Penn State and at Georgia, understanding the funds flow for each mission permitted the organizations to make management decisions that improved the operations of each function. It also permitted the identification of inefficiencies to reduce their cross-subsidization.

Larry Lewin noted that in many AHCs, the faculty is under pressure to see patients, which puts constraints on the time available for teaching. On the other hand, he asked if sufficient attention is given to making the types of changes in the educational approach that Edward Hundert described earlier in this workshop that can make teaching more creative and effective, and therefore, more rewarding to faculty. Paul Ramsey asked how, after the AHC has an understanding of its funds flow, decisions are made about the cross-subsidies to support the AHC role in its local community. In response to both questions, Dr. Kirch responded that in his view, the core problem is that funds for teaching have been obscured in the co-mingling of the revenue sources. As a result, faculty has lost sight of the fact that monies are being contributed for teaching. AHCs also need to recognize that they have the power to allocate resources to teaching or to other activities and priorities. Understanding the funds flow permits the organization to allocate its resources more rationally.

John Porter asked: a) how it is possible to understand the costs of each mission if, as Bruce Vladeck pointed out, the joint production functions makes all such allocations inherently

arbitrary and b) why administrative costs were pulled out separately rather than allocated back to their function. He also commented that understanding the funds flow and which missions are profitable does not recognize that inefficiencies can exist even within the profitable missions. In terms of the first issue, Dr. Kirch responded that assumptions can and have to be made, even if they are not perfect. Secondly, administrative costs were highlighted so the faculty would know how much money was supporting committees and other administrative functions to assess whether all were needed.

Roy Wilson pointed out that although mission-based management may be a good approach for improving the availability of information, is it sufficient for making change happen? For example, tenure can impose constraints on AHC efficiency. In response, Dr. Kirch did not view tenure as a limiting factor. AHCs have to take responsibility for defining the financial guarantees that are or are not associated with tenure and providing options for investigators who work in areas that are not fundable.

Nicole Lurie asked if the morale at Penn State has improved since all of these changes were put in place. Dr. Kirch said he could not answer this objectively, but does believe it has improved and that people feel more in control of the decisions affecting the AHC.

Variation in Roles Pursued by Academic Health Centers
Gerard F. Anderson, Ph.D., Professor and Director, Center for Hospital Finance and Management, The Johns Hopkins Bloomberg School of Public Health, Johns Hopkins University

Gerard Anderson's presentation covered three areas: understanding the distribution of funds across AHC roles in research, graduate medical education and disproportionate share; issues of accountability; and the synergy of conducting the roles as a joint product.

Medicare originally paid hospitals for the costs of providing care. Over time, as alternative payment approaches have been implemented (Section 223, prospective payment system), AHCs have consistently been the most affected by any changes intended to control the costs of care because AHCs costs have always been higher than other hospitals. When the PPS was implemented in the mid-1980s and Medicare began paying hospitals a prospectively determined rate per case, AHCs were expected to be negatively affected because of their consistently higher costs. As a result, such hospitals received direct and indirect medical education payments.[7] Since the implementation of the PPS, the United States. has spent about $100 billion on just indirect and direct medical education. In addition, approximately $75 billion has been put into AHCs by the NIH, and another $10-20 billion has been provided by the states. Dr. Anderson asked what has been obtained for the approximately $200 billion that has been provided to AHCs? What did the money buy? Funds flow can tell you where the money went, but not what it bought. If an equivalent amount is spent in the next 15 years, what *should* it buy?

[7] Direct medical education payments reimburse hospitals for Medicare's share of the costs of educating residents, such as resident salaries and fringe benefits, faculty salaries for supervision and other direct costs. Indirect medical education payments are provided to hospitals as a percentage add-on to Medicare inpatient care payments to account for the relatively higher inpatient costs associated with greater complexity and intensity of services furnished, including a broader array of technologically sophisticated services and care for patients with greater severity of illness who require more complex and costly treatment than is captured under the case-mix adjusted diagnosis-related groups (MedPAC, Rethinking Medicare's Payment Policies for Graduate Medical Education and Teaching Hospitals, August 1999).

To answer these questions, Dr. Anderson reviewed the provision of funding to AHCs from NIH (as a measure of the size of the research activity), from Medicare for graduate medical education (as a measure of the size of the teaching function), and Medicare disproportionate share funds (as a measure of the size of the indigent care program).

NIH funding in the year 2000 to medical schools was approximately $8 billion, most of which is concentrated in about 135 institutions.[8] One-third of it goes to the top 10 institutions, which average about $280 million each. The next 40 institutions receive about 50 percent of the money for an average about $110 million each, and the remaining institutions receive about 15 percent of the total. The criteria for allocating this money is through a peer-review process.

Money for graduate medical education (GME) is much less concentrated. Almost 1,000 institutions receive GME funds. The top 10 receive just 12 percent of the money (an average of $60 million each), the next 40 institutions receive about 24 percent of the money (an average of $30 million each) and the remainder of the group receives about 64 percent of the total money. The money is allocated to hospitals based on the number of residents trained, their costs in 1985, and their share of Medicare beneficiaries. Are these the right criteria for distributing education funds? In Dr. Anderson's view, there is "no real accountability." When this formula was developed, there was no requirement to do anything except to train residents.

Money for Medicare disproportionate share (DSH) is the least concentrated, going to approximately 4,000 institutions. The top 10 institutions get relatively little money, about 5 percent of the total, for an average of $20 million each. The next 40 institutions receive about 11 percent of the total, for an average of $10 million each. The remaining institutions receive about 85 percent of the total. The criteria for receiving DSH funds is based on the number of Medicare and Medicaid patients served. He asked if those are the right criteria.

Dr. Anderson then asked if AHCs have to perform in all three of these missions. He arrayed the top 50 institutions in each mission and looked for the overlap. He found that 11 institutions are in the top 50 for all three missions, 8 are in the top 50 for both GME and DSH, 15 are in the top 50 for both research and GME, and 2 are in the top 50 for the roles in both research and DSH.

Are there economies of scale when AHCs provide all three of these missions or are these separable? Dr. Anderson reviewed the characteristics of the top 50 institutions, dividing them into categories according to the number of missions (graduate medical education, NIH research funding and disproportionate share) in which they appeared in the top 50 (e.g., whether they appeared in the top 50 for conducting all three missions described, the top 50 for conducting two of the three missions or the top 50 for conducting one of the missions). Those institutions that appeared in the top 50 for all three missions tended to be larger and more expensive (based on Medicare cost per discharge). Compared with institutions not in the top 50, they tended to care for fewer Medicare patients, but more Medicaid patients. They also trained the fewest proportion of primary care residents. If that is an important education goal, it is not happening in these AHCs.

Dr. Anderson challenged the idea that much is known about funds flow within AHCs. In his view, the money that goes in AHCs is very fungible and the question for this committee to consider is whether there should be accountability for its use.

[8] It should be noted that NIH funding is generally provided to medical schools, whereas GME and DSH funding generally goes to the hospital.

Dr. Anderson has been working with others, with support from the Department of Health and Human Services, to identify the early warning indicators that show when an AHC is in distress and changing its mission. Indicators were developed for each mission based on measures that were viewed as important and had data available or that could be collected. The indicators for the education mission are: 1) primary care residents as a percent of total residents, 2) number of unfilled chairs over one year, 3) board certification exam first-time pass rates for residency graduates, 4) faculty attrition, 5) faculty satisfaction, 6) undergraduate student ratings of educational experience, and 7) proportion of international medical graduates. The indicators for the research mission are: 1) total government research dollars, 2) total government research dollars per FTE faculty member, 3) total NIH dollars per principal investigator, 4) total private sector research dollars, 5) total private sector dollars per FTE faculty member, and 6) number of publications by faculty. The indicators for the patient care mission are: 1) nurse- to- patient ratio, 2) re-admission rates, 3) episodes of uncompensated outpatient care, and 4) unfilled positions in the intensive care unit.

In closing Dr. Anderson reiterated his view that the core issue for AHCs is one of accountability. What should be expected from AHCs in return for public support of their roles.

Discussion

Nicole Lurie asked if most AHCs have the same kind of funds flow shown by Dr. Kirch. Dr. Anderson indicated that is unknown, but believes that funds flows vary across AHCs.

Robert Dickler agreed on the need to understand where these public dollars go and the need for accountability. However, he raised a number of concerns with the analysis presented. It is hospital-centric, attributes NIH funds that go to medical schools to the hospitals, mingles direct and indirect medical education funds, and uses absolute dollars without accounting for institutional size. He believes that additional analysis and refinement of these figures are needed. Furthermore, he also noted that methods of accountability are built into the current system. For example, residency programs are not funded if they are not accredited. Institutions receive money based on how many residents they have and their real costs (at a point in time). NIH money is provided based on grant applications and peer review. Disproportionate share money is distributed based on an underlying methodology. Prior attempts in setting policy objectives have been difficult. For example, efforts at predicting workforce supply needs and mix have not been successful. In his view, the question is how to support accountability for certain criteria while retaining flexibility.

Dr. Anderson agreed that the analysis is primarily based on hospitals because those are the data available. Data are not available on the AHC as a whole. The concentration on hospitals was because most of the monies described flow to the hospital, not the AHC broadly. He continues to believe that there is less accountability for graduate medical education compared with the other missions. The standards set by the Accreditation Council for Graduate Medical Education (ACGME) do not talk about the balance between specialists and generalists or outpatient training, for example.

Linda Aiken commented that Dr. Anderson's data showed that AHCs do not appear to be very different relative to nurse staffing, but that case mix varies substantially. She asked if this suggests that AHCs are under-investing in patient care, or perhaps the cross-subsidies are drawing resources out of patient care to fund other missions. Dr. Anderson suggested that there may not be enough nurses in AHCs, however, it is also possible that residents are substituting for nurses.

However, research he conducted in the 1980s suggested there was stronger evidence that residents were substituting for the attending physicians.

Brian Biles asked about the Medicare formula for indirect medical education. The goal for implementing it was to keep teaching hospitals financially solvent as the system moved to prospective payment. Is a more sophisticated formula required today? Dr. Anderson replied that more sophisticated formulas can indeed be developed, but the objective needs to be known so the formula can be designed.

Al Dobson commented that the formulas in place today were designed to meet a policy goal of ensuring access for Medicare and Medicaid beneficiaries in AHCs that have high costs and providing support for interns and residents. There may be more questions today, but those were the policy goals in 1983. Dr. Anderson agreed that the funds are flowing exactly according to the formulas developed. The question, however, is whether those are the right objectives today.

Jeff Goldsmith reiterated his view that there will be tremendous pressure on AHCs to expand the number of trainees in the next 10-15 years. Much of the discussion has focused on using cost as a basis for deciding how to subsidize various activities. The result has been wide variations in the amount of support provided to specific institutions. Dr. Goldsmith asked if this is a viable basis for policy going forward. Dr. Anderson responded that expanding training programs will require an assessment of what we want them to accomplish. NIH faces these questions annually when it has to decide how much spend on cancer or AIDS. Although the future cannot be predicted, we can say where we think the problems will be and allocate money accordingly. We know that the needs of the 21st century are going to be more oriented toward chronic care and will be less hospital focused. Even if projections are imprecise, the alternative is to let each AHC make its own decisions with the current set of economic incentives, which will continue to have an acute care, inpatient focus.

Larry Lewin challenged the statement that DSH and NIH funding mechanisms have more accountability built into them than GME funding does. He noted that DSH funding is imprecise, yet has a significant impact on the size of the safety net, where it is located and whether it is oriented to outpatient or inpatient services. Dr. Anderson replied that in his view, graduate medical education was the least accountable, but it may be true that accountability for DSH dollars could also be clarified.

APPENDIX A
Workshop Agenda
The Roles of Academic Health Centers in the 21st Century

Thursday, January 24

8:30-8:40 Welcome, opening remarks
John Edward Porter

8:40-9:00 Introductions around the table

Section I: Changing Needs and Trends in Health Care

9:00-9:20 **How AHCs Can Meet the Future of Health Care**
Uwe E. Reinhardt, Ph.D., Professor of Economics and Public Affairs, Woodrow Wilson School of Public and International Affairs, Princeton University

9:20-9:40 **Future Trends and Directions in Health Care**
Jeff Goldsmith, Ph.D., President, Health Futures, Inc. and Associate Professor of Medical Education, University of Virginia

9:40-10:00 Brief Questions for Drs. Reinhardt and Goldsmith

10:00-10:30 **Changing Expectations for AHCs from Various Constituencies**

- The Needs of Patients: Ellen Stovall, Executive Director, National Coalition for Cancer Survivorship
- The Needs of Low Income Populations: Sara Rosenbaum, J.D., Harold and Jane Hirsh Professor of Law and Policy, George Washington University School of Public Health and Health Services
- The Needs of Health Plans: Charles Cutler, M.D., Chief Medical Officer, American Association of Health Plans

10:30-11:10 Q&A for all morning presenters
- Do different constituencies have conflicting expectations for AHCs?
- Which trends and expectations are likely to have a particularly significant impact on the roles performed by AHCs?

11:10-11:20 Break

Section II: Creating a Vision for the Future

Panel on the Clinical Service Role

11:20-11:35 Peter Kohler, M.D., President, Oregon Health and Science University

11:35-11:50 Ezra Davidson, M.D., Associate Dean, Charles R. Drew University of Medicine and Science

11:50-12:30 Questions for panelists and general discussion

- As competition in clinical services grows and more sources of care are available, where does the AHC fit into the delivery system?
- To what extent is the academic relationship a differentiating factor in the marketplace?
- Do AHCs have a role in developing efficient and effective models of care for the populations dependent upon them?

12:30-1:15 Lunch/Break

Panel on the Education and Training Role

1:15-1:30 A Perspective from Medicine—Edward Hundert, M.D., Dean, University of Rochester School of Medicine and Dentistry

1:30-1:45 A Perspective from Nursing—Colleen Conway-Welch, Ph.D., R.N. Dean and Professor, School of Nursing, Vanderbilt University

1:45-2:00 A Perspective from Public Health—James W. Curran, M.D., M.P.H., Dean and Professor of Epidemiology, The Rollins School of Public Health, Emory University

2:00-2:45 Questions for panelists and general discussion

- How will training programs in medicine, nursing and public health relate to each other to effectively train health professionals in the future? Can linkages be created between medical, behavioral and social sciences to improve health?
- Will education become more expensive in the future? Why?
- To what extent will changes in the education and training role impact the clinical service and/or research roles, or are the future changes in this role independent of other roles?

2:45-3:00 Break

Panel on the Research Role

3:00-3:15 Biomedical Research—Gerald Fischbach, M.D., Executive Vice President for Health and Biomedical Sciences; Dean, Faculty of Health Sciences; Dean, Faculty of Medicine, Columbia University College of Physicians and Surgeons

3:15-3:30 Clinical Research—Ralph Snyderman, M.D., Chancellor for Health Affairs; Executive Dean, School of Medicine; President and CEO, Duke University Health System

3:30-3:45 Perspectives from Private Industry—Samuel Broder, M.D., Executive Vice President, Celera Genomics

3:45-4:00 Health Services Research—Ralph I. Horwitz, M.D., Yale University School of Medicine

4:00-4:45 Questions for panelists and general discussion

- Are research relationships between AHCs and private industry likely to increase or decrease in the future? What are the potential benefits and concerns that arise in research relationships between AHCs and private industry?
- How do AHCs set research priorities? Who has input in defining priorities?
- How important are concerns surrounding technology transfer? What is the role of the university in technology transfer?

4:45-5:00 Thanks to those leaving, Committee's next steps; Adjourn

Friday, January 25

8:30-8:45 Call to Order, announcements, new introductions
John Edward Porter, Chair

Section III: Creating an Environment to Support Needed Changes

8:45-9:10 Critical Issues to Confront In Studying Academic Health Centers
David Blumenthal, M.D., Executive Director, Commonwealth Task Force on Academic Health Centers; Director, Institute for Health Policy, Massachusetts General Hospital/Partners HealthCare System, Inc.

9:10-9:40 Questions and Discussion

9:40-10:00 Financial Issues Affecting the Future of Academic Health Centers
Bruce Vladeck, Ph.D., Senior Vice President for Policy, Mount Sinai/NYU Health

10:00-10:20 Questions and Discussion

10:20-10:30 Break

10:30-10:50 An AHC's View on Cross-Subsidies and the Implications for Shifting Priorities
Darrell G. Kirch, M.D., Senior Vice President for Health Affairs; Dean, College of Medicine; and CEO, Penn State Milton S. Hershey Medical Center, Pennsylvania State University

10:50-11:10 Questions and Discussion

11:10-11:30 Variation In the Roles Pursued by Academic Health Center
Gerard F. Anderson, Ph.D., Professor and Director, Center for Hospital Finance and Management, The Johns Hopkins University Bloomberg School of Public Health

11:30-11:50 Questions and Discussion

11:50-12:15 General Discussion

- Are all AHCs affected equally be the changing trends? Are all AHCs equally prepared to meet changing community needs?
- To what extent can AHCs make changes desired by both themselves and their communities within current financing methods (e.g., if more ambulatory and multidisciplinary education is desired, can it be done)?

- What are the *non-financially* related needs of AHC to adapt to a changing health system?

12:15 Committee's next steps, Thanks, Adjourn
John Edward Porter, Chair

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APPENDIX B

Remarks Prepared by Ellen Stovall for Presentation at IOM Conference on Academic Health Centers

Good morning, I am Ellen Stovall, a 30-year survivor of Hodgkin's disease. I am also the Executive Director of the National Coalition for Cancer Survivorship, an organization that serves individuals with all kinds of cancer.

I am pleased to be here today to talk about the partnership between individuals with cancer and academic health centers. In my remarks, I will focus primarily on the experience of individuals with cancer, an experience I can discuss with significant knowledge, but many of my comments are relevant to the situation of those with other serious and life-threatening illnesses.

Over the course of the last twenty years, cancer care has shifted significantly from cancer centers, most of which are part of academic health centers, to the community. Most individuals with cancer currently receive their care from a community oncologist.

Even though the care of cancer patients has shifted to a community setting, we remain heavily dependent on academic health centers. The quality of our cancer care is contingent in large part on how well the academic health centers accomplish their core missions.

The delivery of quality cancer care hinges on the availability of specialists who receive their training at academic health centers. Cancer patients realize that they are able to receive outstanding care in the community because of the solid training that their oncologists receive at academic health centers.

And many of us with rare cancers or those with limited treatment options may find that the best of limited treatment options are provided at academic health centers.

For the cancer patient, the most critical role for the academic health center is its research mission. Cancer care has changed slowly and incrementally, with improvements in care coming through clinical research that is conducted in the academic health center and in the community setting. For a few cancers, the improvements in treatment have been significant and the boost in survival rates have been impressive. For many more cancers, the enhancements in treatment have been modest and the challenges to additional clinical advances are substantial.

Although progress in cancer clinical research has not been as rapid as we all wish, cancer survivors remain steadfast and aggressive advocates for clinical research. We believe that a healthy clinical research enterprise is literally our lifeline, and we understand that the health of academic health centers is an essential part of this equation.

I said at the beginning of my remarks that cancer survivors consider themselves the partners of academic health centers. To us, that partnership has meant fighting for federal dollars to support biomedical research, improving third-party reimbursement for care provided in clinical trials, and enrolling willingly in clinical trials.

We realize that, despite our efforts and those of many more advocates to boost federal research funding, these dollars account for a shrinking proportion of the academic health center budget. We also

understand that academic health centers are forging new relationships with biotechnology and pharmaceutical sponsors to support their research programs. These are relationships that we endorse, because we wish to see promising research findings translated as rapidly as possible into new treatments.

However, there are risks associated with the strong partnership between academic health centers and industry. One of the greatest risks is the potential for conflicts of interest if individual researchers or institutions have a financial interest in the commercialization of their research. Even the appearance of a conflict is a possible problem if it undermines the confidence of the public in the research system.

We urge the community of academic health centers to approach this matter seriously and to act aggressively to reassure their most important research partners – clinical trial participants – that potential conflicts of interest are being evaluated carefully and disclosed or managed appropriately.

The two recent reports on conflicts of interest in research suggest different solutions to the issue, and the cancer community is not yet prepared to recommend specific reforms at this time. It is clear that balance in the monitoring of possible conflicts of interest much be achieved so institutions are not overwhelmed by new regulatory responsibilities at the same time many are reforming their institutional review boards and implementing medical records privacy standards.

This is a matter of trust between academic health centers and a very important constituency, the group of willing and enthusiastic clinical trial participants. Aggressive action regarding conflict of interest issues is critical to a continued strong partnership between academic health centers and cancer survivors.

Appendix C

Academic Health Centers: Challenges and Opportunities
The Oregon Perspective

Remarks Prepared by
Peter Kohler, M.D., President, Oregon Health and Science University

My topic today is Academic Medical Centers: Challenges and Opportunities, The Oregon Perspective. We've heard quite a bit this morning about changing needs and emerging trends in health care, and the role that AHCs might play in this ever-evolving landscape. These developments include such things as: 1) the shift to chronic care; 2) the increasing importance of information technology; 3) the emergence of genomics; and 4) cost pressures. These factors will increasingly come to define the environment in which AHCs operate. My task today is to talk a little bit about how these trends and others have impacted my institution, the Oregon Health & Science University, or OHSU, and how we've attempted to deal with them. I believe, as the title of my talk indicates, that within these environmental challenges lie opportunities for the academic health center.

Cost Pressures and the Marketplace Environment

We all know about the rapid marketplace evolution that came our way in the course of the 1990s with the advent of managed care. Oregon has one of the highest managed care penetration rates in the country, and OHSU found itself at a disadvantage in a hyper-competitive marketplace. Our revenues were not sufficient to allow needed investments. One of our greatest problems was a deteriorating physical plant. At one point, we calculated that we were behind about $400 million in deferred maintenance. That left us with a bi-modal distribution of services: 1) cutting edge medicine and 2) indigent care. We were often perceived as the hospital you went to if you were too sick or too poor to go anywhere else.

In that environment, we tried to become competitive. We were able to identify and implement some improvements in quality and efficiency, but we were in large part constrained by our governance system. As a state agency, we lacked autonomy in strategic decision-making. We were unable to adjust to a rapidly changing marketplace.

We approached the Governor and the State Legislature with the idea that something needed to change. There were really only three options: 1) remain a state agency; 2) become a private, 501(c) (3) corporation; or 3) become a public corporation, a public-private hybrid. We felt that remaining a state agency was unworkable. We were wary of becoming a wholly private corporation, because we had linkages to the state such as a retirement plan that would be difficult to close. Both the state and the institution itself preferred to keep OHSU as a public entity. We quickly settled on becoming a public corporation. This was approved by the legislature in 1995 and signed into law by the Governor.

The practical effect is that OHSU now has a Board of Directors appointed by the Governor of Oregon and confirmed by our Senate. Under this new structure, OHSU and the Board gained a great deal of decision-making autonomy while maintaining our public missions. The results have been dramatic.

We have saved millions by streamlining operations and brought in millions more through prudent business decisions. We brought our facilities closer to community standards with the proceeds of $250 million in bond financing – we would not have had access to the bond market as a state agency. We improved our research standing substantially. In terms of economic impact in our community, we have

grown our overall university budget by over $500 million annually, and increased jobs by 4500 to our current total of over 11,000. We are today the largest employer in Portland.

Catching the Biotechnology Wave

To further bolster our education and research capabilities, OHSU has (since becoming a public corporation) undertaken three separate mergers: first with the Oregon Regional Primate Research Center, then with the Neurological Sciences Institute, and most recently, with Oregon Graduate Institute of Science and Technology (OGI).

The OGI merger, in particular, represents a key element in our efforts to capitalize on the genomic revolution. It is also fair to say that it represents a philosophical shift from the traditional focus of an academic health center. As part of the merger, which was completed in the summer of 2001, we modified our mission statement to include engineering and high technology.

During the course of a two-year strategic planning process, it became more and more obvious that medicine was moving towards engineering and computer science. As Lou Gerstner, the CEO of IBM, said recently: "There is a market now emerging around the marriage of information technology with life sciences research and genetics, and I personally believe this represents the next major revolution – not only in this industry, but for society at large."

By putting the OGI School of Science and Engineering alongside Schools of Dentistry, Nursing and Medicine, we believe we have created a unique university. This will distinguish us academically, but it can also distinguish us clinically – by translating research from bench to bedside.

Collaborative Care

That brings me to OHSU's clinical care. We are working to organize our clinical operations to meet areas of strong demand while emphasizing those areas where academic health centers have a natural advantage. Fortunately, we believe there is a good deal of overleap between high-volume care areas and those lines of service that favor AHCs.

I mentioned our two-year strategic planning process. The original impetus behind that process was a concern for empty beds and clinics. We began to look at how to improve our competitiveness, and to do so we looked at the future direction of health care. The principal trend that influenced our strategic planning was the move away from predominantly acute, episodic care to long-term care for chronic conditions. Since nearly half of those with chronic illnesses have more than one such condition, the best option for treatment is a collaborative, multi-disciplinary process that incorporates long-range goals and planning.

At OHSU, we believe that academic health centers are in the best position to deliver the wide range of services necessary to treat chronic conditions. The synergy between education, research and clinical care gives AHCs a competitive advantage when it comes to building inter-disciplinary centers of excellence. During our planning we decided to re-organize our clinical operations towards the building of centers of excellence.

This is a difficult management problem when you look at the differences between centers and institutes and the traditional departmental approach to medicine. One significant achievement was the formation of a unified group faculty practice, representing a transition from approximately 35 different departmentally based organizational models – including partnerships and corporations, both for profit and not-for-profit – to a single 501 (c) (3) corporation with all practice areas and disciplines included. This change to the

group practice model has been in the works for several years, and was finally fully implemented on January 1, 2002.

We have had some success during the course of this transition, however, particularly if you look at the Oregon Cancer Institute. Dr. Brian Druker, the OHSU researcher who developed the anti-cancer agent Gleevec, is a good example of the bench to bedside clinician/researcher we want to develop. Dr. Druker's work brought attention to the Institute and to OHSU while also providing early access to treatment for leukemia patients in Oregon and elsewhere.

OHSU has moved forward in inter-disciplinary care by developing a Center for Women's Health and a Center for Healthy Aging. We have also moved towards comprehensive, inter-disciplinary services in the increasingly important areas of cancer and heart disease. We have made excellent progress with pediatric cardiovascular, but have not yet made similar progress in adult cardiovascular disease.

In sum, I would say that we are growing and achieving some degree of success in creating strong clinical programs while lagging in others. As we attempt to move forward, we are confronted with the problem of shortages in key personnel areas such as nursing.

New Challenges

Like most of the rest of the country, Oregon faces an immediate nursing shortage. We have retained an adequate staff of dedicated nurses who receive a competitive wage but an extremely generous benefits package. Recently, the AFL-CIO merged with our local bargaining unit and promised the nurses very large salary increases. As we entered into negotiations late last year, the nurses insisted on a 29% raise over two years. Naturally, we couldn't accommodate that.

In December, our nurses went on strike. We believe that the AFL-CIO sees us as a national test case, given the pro-union political climate in the Portland area in combination with the national nursing shortage. We've made a fair offer that would make our nurses the highest-paid in the metropolitan area in terms of wages and benefits. Unfortunately, our offers of a 6% raise per year have been rejected. We have deployed contract nurses as a means to keep our revenue from falling, but this is costly.

All this occurs against the backdrop of the highest unemployment rate in the country so the union does not have as much sympathy as they might otherwise. As we speak here today, the strike goes on, in its fifth week. This could signal a national trend for the AFL-CIO in nursing.

In addition, our success seems to have made us a recurring target for the Oregon legislature. In September 2001, we projected a $32 million operating margin for our hospital. In the court of public opinion, word spread rapidly that OHSU had achieved a $32 million profit – which is of course misleading given that the university and other sectors of our operation are operated at a loss.

In January, our legislature began to seek ways to make up an $800 million shortfall. It would appear that one of the first places they decided to look is at the OHSU Hospital – this despite the fact that OHSU receives less than 5% of our budget from the state and just underwent a $10 million cut in the 2001 session. In a throwback to the state agency days, we were told that the state would consider a $32 million cut to OHSU and direct us to maintain programs. Needless to say, we believe that such a short sighted action would threaten to undermine all the good things we've done as a public corporation and all the good things to come. Nevertheless, we are vulnerable to this kind of state grab-back simply because of our success.

Finally, I would point out that, like most of you, OHSU is operating in an environment of ever-increasing regulatory scrutiny. Our costs associated with HIPAA, PATH audits, clinical and research compliance, personnel law, and various types of insurance, to name just a few, have increased dramatically over the past five years. This trend, unfortunately, shows no signs of abating.

Quality Management

In the midst of these new challenges, OHSU is nevertheless moving forward to improve our clinical operations. Another trend that we think favors AHCs is the move towards improving quality performance. We know that the complexity of what we do is one reason health care has lagged behind other industries in producing error-free performance. Nevertheless, we believe that quality can be a competitive advantage for OHSU and other AHCs.

In an IOM report entitled *To Err is Human*, investigators suggest that one of the primary contributing factors in medical errors is the fragmented and decentralized nature of the health care delivery system. I quote: "Even within hospitals and large medical groups, there are rigidly-defined areas of specialization and influence. For example, when patients see multiple providers in different settings, none of whom have access to complete information, it is easier for something to go wrong than when care is better coordinated. At the same time, the provision of care to patients by loosely affiliated organizations and providers makes it difficult to implement improved clinical information systems capable of providing timely access to complete patient information. Unsafe care is one of the prices we pay for not having organized systems of care with clear lines of accountability."

At OHSU, we're working to implement a multifaceted quality initiative aimed at moving us closer to error-free performance. Specifically, we want to implement the six aims outlined in the IOM report *Crossing the Quality Chasm*. Health care should be: 1) safe, 2) effective, 3) patient-centered, 4) timely, 5) efficient, and 6) equitable.

In other words, we will strive to: 1) avoid injuries to patients from care that is intended to help them; 2) provide services based on scientific knowledge to all who could benefit and refrain from providing services to those not likely to benefit; 3) provide care that is respectful and responsive to individual patient preferences, needs and values and ensure that patient values guide all clinical decisions; 4) reduce waits and sometimes harmful delays for both those who receive and those who give care; 5) avoid waste, including waste of equipment, supplies, ideas and energy; and 6) provide care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, or socioeconomic status.

From these six aims, we have devised five principles that we will use to train and evaluate personnel. Each health care provider will be measured against their ability to: 1) improve the patient experience for all patients, 2) make the hospitals and clinics safe in the delivery of health care; 3) monitor and improve clinical outcomes; 4) design better systems to assure timeliness and efficiency; and 5) assure quality while maintaining fiscal responsibility.

To achieve these aims, we at OHSU are working to utilize the latest information technology. The IOM report suggests that "health care delivery has been relatively untouched by the revolution in information technology that has been transforming nearly every other aspect of society."

We think patient-practitioner relations can be enhanced by new technologies. According to the IOM report, "only a small fraction of physicians offer e-mail interactions." We are working to encourage this practice – consistent with the new HIPAA regulations, of course. We are also working to augment communication between and among clinicians.

It used to be, for example, that when an x-ray was taken, the x-ray itself had to be routed among the various clinicians. It could take days to cross the desk of every concerned practitioner. Today, all interested parties can access the image in a computer file simultaneously. That is a big jump forward in efficiency and quality performance.

Another area of opportunity to improve quality is in the area of training – where academic health centers, again, have a natural advantage. The benefits of coordinated care are becoming more and more apparent, yet the training of health care providers is typically isolated by discipline. This is perfectly appropriate – up to a point. We must prepare the next generation of health care professionals for the kind of collaborative, inter-disciplinary care-giving environment they are increasingly likely to find after leaving school. Related to that, we must also manage the growing knowledge base and ensure that all those in the health care workforce have access to the skills and continuing education they need.

If we do these things – utilize the latest information technology and implement lifetime training with respect to quality performance – we can reach the six aims. We can make health care: 1) safe, 2) effective, 3) patient-centered, 4) timely, 5) efficient, and 6) equitable.

Conclusion

In closing, it seems evident to me that academic health centers are well positioned to capitalize on some key health care trends like genomics, collaborative care, and quality performance. The view from Oregon is, if anything, even brighter. OHSU has, in just six years, gone from the "too sick or too poor to go anywhere else hospital" to Portland's #1 hospital in customer satisfaction and overall reputation. We're looking forward to a bright future as Portland's leading hospital and an economic engine for all of Oregon.