AHC STRATEGIC PLANNING PROCESS

PHASE II – REPORT ON DEFINING QUESTION NO. 2:

WHAT IS OUR VISION FOR THE HEALTH CARE PROFESSIONALS WE EDUCATE AND TRAIN?

Committee No. 2 – Vision for Education

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Executive Summary

Minnesota needs a *New Covenant* for health professional education to guarantee all residents a future of high quality personal and community health. This *New Covenant* must frame health professional education in Minnesota as an investment in a common public good that will significantly shape the quality of life in this state. This new vision of health professional education includes the following elements:

1) Stable, recurring funding of health professional education to ensure high quality personal and community health for Minnesota residents;

2) Interdisciplinary training of health professionals in the basic, clinical, and population sciences;

3) Rural and urban community "laboratories" to train health professionals in community settings, and to develop new models of personal and community health services delivery;

4) Education and empowerment of individuals and communities through personal and community health information resources;

5) Development of new information technology to make possible learning "anywhere, anytime;"

6) Development of information technology applications to make available to health professionals the evidence base for health wherever and whenever it is needed;

7) Expanded opportunities for health professionals and the public to pursue "lifelong learning" in health and the health sciences; and

8) Expanded efforts to develop the next generation of health scientists.

Committee No. 3 Report

Introduction

The University of Minnesota Academic Health Center (AHC) has reached an unprecedented crossroads in the education of health professionals. Never has there been more promise and potential for educating the next generation of practitioners and scientists. Yet never has there been more peril to our capacity to deliver on the promise.

Scientific knowledge is accumulating in the health sciences more rapidly than at any time in human history. Diagnosis, treatment and prevention strategies deemed "state-of-the-art" less than a decade ago are superceded almost weekly. As the evidence-base for health and prevention grows more complex and interconnected, it propels not only promising new applications for the health of patients and communities, but also the alteration of traditional field boundaries in the health sciences. Converging perspectives of the basic, clinical and population sciences amplified by new information technology herald important advances in the education of health professionals. The next generation will enter practice with the expectation of rapid change as the norm rather than the exception. Health professionals' capacity to grow and adapt will be an increasingly valued characteristic in the integration of new knowledge and lifelong learning, and in the organization and delivery of personal and community health care services.

At the same time, the environment for educating health professionals has never been more uncertain. The combined forces of change in the rise of managed care and declines in state and federal allocations have created a serious long-term, worsening gap between the cost of health professional education and its funding in Minnesota. Nowhere is this more evident than in the funding of physician training where the gap is on the order of tens of millions of dollars annually. This regrettably precarious basis for funding coincides with recent projections of worsening shortfalls in health professionals over the next decade. This will affect all Minnesotans' access to health care and prevention, but particularly that of rural residents. Rural Minnesotans in particular have experienced dramatic changes in the health system. Community health facilities have closed, there are already important shortages of health professionals, and the new economics of health imperil easy access to high quality care and prevention services for rural residents and communities.

A New Covenant For Health Professional Education

In defining a vision for the next decade and beyond, the AHC faculty urge first and foremost that a *New Covenant* must be struck in Minnesota. Because the old funding mechanism has been abrogated (Pardes, 2000),[1] a new pact is needed now to assure continuity in sustaining a supply of the best educated health professionals we can recruit

[1] Pardes, H. (2000 May 10). The perilous state of academic medicine**. Journal of the American Medical Association (JAMA)** 283:18, 2427-2429.

and train. Such a pact must include new, recurring funding to sustain health professional education in the long-term.

Traditional funding relied heavily on clinical income to subsidize both health professional training and clinical research. As managed care has eroded particularly the Medical School's patient base, clinical income has declined sharply. This decline has resulted in increased pressure on other revenue sources, principally indirect cost recovery (ICR) funds generated from research grants, and endowments to make up the difference. The Medical School and much of the AHC have been forced by circumstances to, in effect, consume their own "seed corn" which should be used to fund new research and other innovations. The School of Dentistry, on the other hand, is unique within the AHC in that it relies on student-generated income for some 30 percent of its annual budget. Reliance on student-generated clinical income (up 32% between 1996 and 1999) has been used to offset decreases from other sources. This situation is also untenable in the long-run. Reduced reliance on student-generated income, significant curriculum revision, and the implementation of fundamental changes in clinical education and patient management will be required for the School of Dentistry to fully participate in the educational initiatives outlined in this vision. A *New Covenant* must recognize that in the current economic setting, clinical income at the AHC can no longer be relied upon to cover the costs of health professional education.

Many strategies or combinations of strategies are possible in search of a *New Covenant* but none are painless and all have limitations. For example, raising tuition has severe limitations. Many health professionals (particularly physicians and dentists) already graduate from AHC programs with student indebtedness of $100,000 or more. In addition, the health professions are less attractive to some potential students because of somewhat reduced earning potential (the result of changes in the economics of health). Substantial increases in tuition may therefore act as a disincentive and contribute to the further growth of health professional shortages. Cutting instructional costs also has limitations. The highest single expense in health professional education is, of course, teaching personnel. The Medical School already has lost some 19 percent of its faculty in the past 3-5 years, and other AHC schools (e.g., Dentistry) report high turnover in clinical faculty driven in part by more lucrative opportunities outside of the AHC. Clinical staff who remain at Minnesota report spending more time in clinical care, and devoting fewer hours to research. This is the intellectual equivalent of consuming one's "seed corn," since AHC research drives innovation in health professional training. A state surtax on health care to support health professional education is a possibility but likely an unpopular one in the current political environment. Designating a permanent and substantial health professional education endowment from tobacco settlement funds is also possible, but likely to be variable as smoking rates decline in Minnesota.

Despite these limitations, the adverse impact of forces on the supply and training of high-caliber health professionals calls for a new frame of reference. Health professional education in Minnesota must be viewed not as a variable commodity of the health system, but as an investment in a common public good that bears on the future quality of life in this state. Parties to this *New Covenant* must include the people of Minnesota,

their community, state, federal, and health care sector leaders, and the University AHC faculty and administration. The *New Covenant* must clearly redefine the responsibility and accountability of all the parties involved in funding and forming health professional education. The *New Covenant* must specify how the parties collectively and individually will sustain their commitment with recurring funding to health professional education for the common good of all Minnesotans. Without such a pact, the promise and potential of health professional education in Minnesota will remain in peril.

Against this background, we propose a vision for health professional education over the next decade that includes the following elements:

•Interdisciplinary Team Training of Health Professionals
•Continuing Education and Lifelong Learning
•Technology-enhanced Learning, Infrastructure
•Development of health information tools
•Training of the next generation of academic health professionals

Interdisciplinary Health Professional Education: The Team Training Initiative

Major changes in the economics and organization of health and rapid acceleration in the growth of scientific knowledge have begun to change traditional perspectives framing the form and content of health professional education (Lee & Paxman, 1997). Rapid change is now the norm. The next generation of health professionals must be flexible, adaptive, have an interdisciplinary orientation (whatever their specialty), and have skills and competencies in the full range of health and prevention from molecular and genetic science to clinical and population science. Because Minnesota has experienced many of these changes earlier and more intensely than many other parts of the country, it is now is a position to propose a bold initiative in re-framing health professional education across the AHC. As Lee and Paxman (1997) recently noted:

> From the Human Genome Project, to studies on the effects of social class on health, research is rapidly transforming our understanding of the variety of biological, behavioral, social, and environmental factors that converge to influence health. It is critical to apply this knowledge to health policy and clinical and public health practice.[2]

We propose an orientation to health professional education at Minnesota that emphasizes skills and competencies across the health professions, and the development of a truly team approach to personal and community health. Hallmarks of this approach include:

1) Development of a common core and cross-cutting curricular initiatives across the health professions focusing on basic, clinical and population sciences; and

[2] Lee P and Paxman D. (1997). Reinventing public health. **Ann Rev. Public Health** 18:1-35.

2) Development of opportunities to sharpen the application of these skills in truly community settings; and

3) Reorganization of the teaching of common basic sciences across AHC schools.

Figure 1 below specifies the broad subject areas that should be bridged to build a health professional training approach that cuts across the spectrum of "health" from basic to clinical and population sciences. Such an approach emphasizes a comprehensive definition of health as "quality of life" -- that is, more than acute care, or the absence of disease alone. The basic sciences teach the biological and genetic basis of health which translates as important clinical applications. These in turn influence population and community applications. The approach is not meant to be understood in a strictly linear fashion, but is suggested here to harness the energy, insights, and competencies that can form the interdisciplinary approach to health professional education.

This reassessment asks the question: what are the basic core areas of knowledge in which all health professionals should receive training regardless of eventual professional specialty? Cross-cutting curricular reforms may emphasize the bench-to-bedside-to community nexus in such critical areas as chronic disease, aging and gerontology, infectious disease, and adolescent health. These are areas that already are strong in many parts of the AHC but could benefit from a more interconnected approach. Strong cross-cutting efforts also have been developed in bioethics and alternative and complementary medicine demonstrating the strengths and potential of this approach

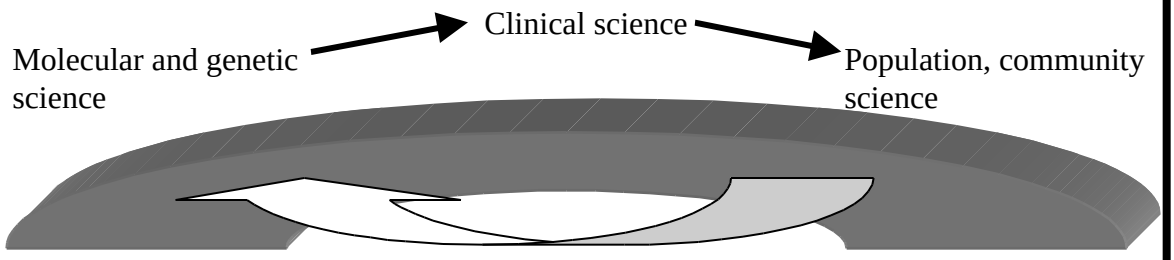

Fig. 1. Bridging fields for interdisciplinary health professional education

Moreover, the teaching of basic sciences commonly across the AHC could benefit students with a more unified approach yet permit specialized basic science modules tailored for specific health professions.

Given the changes in the organization of health, there is currently a disconnect between the context of field training across the health professions and the actual settings in which the majority of health professionals will spend their professional lives. To realize training opportunities to sharpen the application of these skills in truly community

settings, we propose the development of rural and urban health laboratories. These will provide community settings for team training of health professionals across the AHC for delivery of personal and community health services. Community health labs are proposed as a holistic approach to personal and community health conceived of as "common goods" rather than market commodities. This provides a basis for experimentation in the development of team approaches, the organization and delivery of personal and community health services, and a dynamic organization with influence in promoting the health of the entire community.

Labs should be placed in strategic areas of the state, dovetail with the changing health system, and provide a means for experimentation in delivery of personal and community health. Such labs can be envisioned as melding the concepts of managed care, community centers, and public health agencies in providing training across the health professions. We envision such labs as based in the concept of "empowerment" of individuals and communities in providing personal health care including primary and specialized care, complementary and alternative health services, prevention services, community health assessment and information resources tailored to the needs of individuals and communities. In addition, they may provide the basis for experimentation in cross-cutting curricular reforms of the bench-to-bedside-to community nexus. A key assumption of this "empowerment" approach is the active encouragement of individuals and communities in decision-making partnerships about their health.

This initiative takes advantage of much excellent research already going on in the AHC that provides models for rising to an even higher level. Efforts in chronic disease prevention, aging and geriatrics, complementary and alternative medicine, bioethics and the Minnesota Rural Health School provide rich experiential ground. In this initiative, the AHC assumes a higher level of leadership in shaping new models of personal and community health services delivery and health professional training.

Continuing Education and Lifelong Learning

Although many health professions require continuing education to maintain licensure, 21st century health professional practice requires re-conceptualizing continuing education as "lifelong learning." The difference is not mere terminology. The rapid acceleration of scientific knowledge in the principal areas discussed requires an orientation toward learning that is fluid, adaptive, and aimed not only at the growth of health professionals, but the empowerment of individuals and communities. In addition to specialized areas of health knowledge, the orientation of lifelong learning opportunities should be toward the bench-bedside-community interdisciplinary nexus described above. In other words, lifelong learning beyond professional licensure or certification should continue to reflect the team and interdisciplinary forms embedded in this vision. However, to enhance the capacity for lifelong learning, opportunities must be provided permitting learning to occur "anywhere, anytime." This requires a substantial investment in technology infrastructure, and technology-enhanced learning.

Technology-enhanced Learning, Infrastructure

The emergence of new information technologies converging in the computer and World Wide Web provide unprecedented means of revitalizing a vision for health professional education and lifelong learning, as well as individual and community "empowerment" surrounding health decision-making. The AHC has recognized the significance of these advances in several ways. Most AHC schools currently deliver technology-enhanced learning (TEL) via the Web and other technologies. There are excellent explorations occurring in telemedicine, medical simulation, and Web-based public education. In addition, a recent report to the AHC Senior Vice President for Health Sciences urged that priority be given to developing AHC-wide resources for further TEL development. The use of technology in learning has become a necessity rather than a curiosity to realize a new vision of health professional training.

We support the findings of the committee and urge that its major recommendations be implemented. These include particularly:

•Create and fund with recurring dollars an AHC Digital Development Center based on a "hub and spoke" model that incorporates a Technology Enhanced Learning (TEL) team with both technical and content expertise. The center "hub" would provide a set of central support resources including personnel and specialized equipment. The "spokes" would connect the hub to sections of the "wheel" and be college or school-based personnel who would also be affiliated with the center and would focus on school-specific projects (a similar arrangement could be created for large AHC centers such as the Cancer Center, or the Center for Bioethics, with shared resources among smaller ones); and

• Establish a TEL team for each collegiate unit with appropriate annual recurring budget. Each team should be linked by a central organizational and communication structure to permit sharing of strategies, equipment and expertise.

Such an approach would provide the instructional design, technical, and content area expertise to encourage innovative uses of learning technology to address the needs of a new generation of health professionals, the lifelong learning needs of current health professionals, and the public as well.

However, to make maximum use of new information technologies to facilitate "anywhere, anytime" learning, a major investment in technology infrastructure will be required. Bandwidth limitations of the current Internet do not permit full application of powerful instructional software and instructional design. Therefore, we recommend that the AHC push forward with the process of implementing "Internet 2" and its concomitant technologies.

It should be clear that new information technology provides a strong basis for making distance virtually irrelevant in the learning process. This is particularly a need for health professionals and residents of Greater Minnesota.

Development of Health Information Tools

In conjunction with learning technology, we also recommend an AHC-wide interdisciplinary initiative in the development of information tools for working health professionals that support the bench-to-bedside-to community nexus of health care and prevention. Much has been written about the need for advances in "evidence-based" health, but a continuing problem is how the wealth of scientific information can be made accessible and usable to the health professional – or to individuals and communities -- when and where it is needed. Community health professionals have neither the time nor the skills to search and analyze multiple databases to assist them in personal and community health decision-making. What is needed is an interdisciplinary laboratory wherein information resources can be drawn together along the lines of the bench-bedside-community nexus and experimented with in substance, form, and presentation style. We propose the establishment of *a Minnesota Health Information Laboratory*, modeled on the MIT Media Lab wherein such development for health professionals, individuals and communities may occur in the context of an interdisciplinary curriculum, cross-cutting curricular initiatives, and lifelong learning needs. The lab would unite faculty from across the AHC with information scientists, and technical staff in developing interdisciplinary information resources to realize the potential of new information technology applied to health.

Training of Academic Health Professionals as Scientists

Of great concern to AHC faculty and administration is the education of the next generation of health professional scientists who will continue to conduct the research that drives education, care of individuals and communities, and public outreach. Clinical faculty report spending more time in patient care at the expense of research to make up for the difference in declining clinical income. In some health fields, a potential shortage of trained scientists looms.[3] One cause of this is that clinical scientists can frequently earn higher incomes in the private or non-profit sectors. While a professional life as a health scientist in the academy can be intrinsically rewarding and satisfying to many, it need not entail substantial sacrifice of income. To facilitate training and recruitment of the next generation of academic scientists, we recommend:

•Strengthening the existing MD/PhD program which has a long and successful track record in educating physician-scientists;
•Developing a supportive network for mentoring;
•Establish scholarships for non-traditional studies. One-year sabbaticals for selected students, for example, would provide a nurturing environment for students interested in academic careers. Such scholarships emphasized as part of the recruitment process may

[3] Krebsbach P, and Ignelzi, MA Jr. (1999). **Journal of Dental Residency** 78:10, 1576-1578.

increase the attractiveness of Minnesota to students with an interest in careers as academic clinician-scientists;
•Development of strategies to assist clinician-scientist students with heavy debt loads which make the academic career less attractive.

We also recommend reassessing the income, benefits and other incentive structures in the AHC that will assure we keep the "best and brightest" as well as continue to recruit the next generation of health scientists. Retaining and recruiting especially clinical faculty also will entail a stable basis for funding health professional education overall to protect research time which drives innovation in personal and community health.

Conclusion

Despite the dramatic changes in the economics of health in Minnesota, AHC faculty remain optimistic about the future of health professional education. The potential for innovation is great, and Minnesota has a long history of commitment to the health of its residents and communities. A *New Covenant* for health professional education is in the common interest of all Minnesotans. Traditionally, the people of Minnesota have preferred to be on the "cutting edge" when it comes to their collective health, and we see no diminution in that essential value. What is required now is clarification of the duties, responsibilities, and solid recurring financial basis of our pact to assure the state's healthy future is reached through this vision and its initiatives.