Best Practices in Education for Healthcare Professionals of the Future

Prepared for

Hennepin Health Foundation

By

HealthForce Minnesota

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Best Practices in Education for Healthcare Professionals of the Future

Introduction

Today’s student in the healthcare professions needs education to be flexible, continuous, and of high quality that meets the ever-increasing professional requirements of their scope of practice. Many incumbent healthcare workers desire career-laddering educational opportunities for job and salary advancement. Besides the needs of the healthcare workforce to advance themselves academically for personal and professional reasons, our aging population and its increased need for health care is straining the numbers of qualified healthcare professionals in all sectors.

Therefore, there are several emerging challenges in educating our health care workforce. Allied Health professionals who were originally on-the-job (OJT) trained now find that their professional certification boards will soon be requiring a 2-year college degree as minimum qualifications in their field. Persons living in outlying or rural areas require educational formats that can be done by simulation and distance learning. Veterans, and others, who received their healthcare skill training in a non-academic setting, need credit for prior learning to advance their educational standing as required by hiring healthcare institutions or professional board certification. This paper will review the current best practices for the education of future healthcare professionals and identify strategic opportunities for Hennepin Health Foundation.

The areas that are foremost are:

- On-Line Education
- Credit for Prior Learning
- Simulation
- Articulation
- Completion Degrees
- Competency Testing
- Cross-Training
- Geriatric Competency
- Primary Care Practitioners
Best Practices

On-Line Education

Distance learning formats are meeting the needs of adult learners for a variety of reasons. Since many adult learners are also working while they’re going to school, this format is not only needed but probably the only means to attain additional education.

In the healthcare arena, there are potential students who would benefit from an on-line format. For example, many incumbent workers desire career-laddering educational opportunities for job and salary advancement. Other Allied Health professionals who were ‘trained on-the-job’ now find their professional certification boards will be requiring a 2-year college degree as minimum qualifications in their field. These examples include adults and healthcare professionals who must work while furthering their education and would benefit by convenient on-line format.

The following teaching and learning strategies are modern formats to support on-line learning or e-learning for adult learners.

**Web-Based** – these are on-line courses provided in either real-time or the course information is stored on a website or course management system that students can access 24 hours a day and seven days a week, year round.

**Integrated Distance Learning** – this is a real-time course in which students interact with other course participants live via web conferencing or video conferencing.

The major benefits of on-line learning for adult learners include:

**Access** – reaching all social economic populations of adults who cannot attend on-campus classes for a variety of reasons such as living too far away, courses not offered by local college, childcare, or lack of reliable transportation.

**Opportunities** – provides around-the-clock access to adult learners, especially for those who are considered lifelong learners and seek convenience in learning.

**Adaptable** – web-based technologies have the ability to quickly evolve to meet the demands of adult learners who utilize personal learning networks and social media.

Modern technology in the classroom enhances the dynamics of learning and better stimulates an interest in learning for the techno-generation. There are many ways to deliver on-line learning, including those listed in the Appendix, Section I.

On-line learning supports adult students through web-based learning environments in which the source of information and the learners are separated by time, distance, or both. Distance learning creates a positive educational environment of equal value for adult learners who do not want to
or cannot attend traditional classroom settings for continuing education. Distance education also meets the needs of those interested in continued lifelong learning.

**Minnesota Online: Resource for Learning**

One local model for promoting and supporting on-line learning is Minnesota Online. Minnesota Online is a collaborative enterprise of the Minnesota State Colleges and Universities (MNSCU) established for serving the on-line learners in the system. Minnesota Online promotes and provides access to all available on-line courses and programs of the Minnesota State Colleges and Universities. Minnesota Online works with colleges and universities to provide high quality academic, technical, and student services to on-line learners.

Their website ([www.minnesotaonline.org](http://www.minnesotaonline.org)) provides resources for faculty, staff and administrators of the Minnesota State Colleges and Universities to develop and support on-line programs and services.

In addition to Minnesota Online, the system offers eFolioMinnesota for lifelong education and career planning ([www.efoliominnesota.com](http://www.efoliominnesota.com)). eFolioMinnesota is a statewide electronic portfolio infrastructure for Minnesota institutions, educators, students, workers, and citizens that can serve as an on-line version of a person’s resume. However, unlike a paper resume, an e-portfolio can include documents, links to related sites, examples of a person’s efforts and activities, and greater detail on a person’s accomplishments. It allows Minnesota residents to document their academic, personal, and professional achievements on-line, free of charge. There is also the Seamless Project to make it easy for students to move around the system, and a new credit policy for prior learning.

Minnesota Online now strives to meet the needs of seven learner segments, several of which typically consist of students over the age of 25:

- **Degree Completion** Adult Learners who are seeking to complete a degree at an older age and are often balancing work and family needs with their educational goals.

- **Corporate Learners** who work for private sector companies and are seeking education to advance their careers. The purchase decision is made by the corporation and not by the individual acting alone. Corporate Learners demand a broad range of educational services.

- **Professional Enhancement** Learners who are seeking to advance their careers or shift careers. They are interested in advanced degrees or non-degree work that furthers their career. They may be employed full- or part-time.

- **Life Fulfillment Learners** who are interested in education for its own sake. They enjoy learning and the academic environment and view additional education as a source of personal development or as a hobby.
Additionally, Minnesota Online also seeks to assist the following segments:

**“College Experience” Learners** who are preparing for life. They are 18- to 24-year-old residential college students for whom the “coming of age” process that occurs in college is often as important as specific academic learning.

**Pre-College (K-12) Learners** who are interested in taking baccalaureate-level work prior to completion of secondary school.

**Remediation and Test Prep Learners** who are interested in learning as a prerequisite for an examination or enrollment in another program.

In the future, Minnesota Online administration will continue to develop on-line curriculum. The organization is now developing a unique assessment gaming tool that will measure a student’s subject knowledge and decision-making skills. New this year is the addition of SMARTTHINKING, an on-line tutoring program available 24-hours-a-day, seven-days-a-week. Plans are also underway for enhancing on-line library services.

**On-Line Education Quality Assurance**

Seated class academic assessments are standard practice throughout academia. Now that the on-line format is coming of age, the same high standards of education are also expected of this new format. One such academic quality assurance program is Quality Matters. Quality Matters is a nationally recognized tool grounded in research that is being used to improve and assure the quality of on-line courses. Minnesota Online partners with system institutions and their faculty and staff to promote the Quality Matters processes and use of national standards to provide a framework for consistent quality in on-line course delivery.

Quality Matters ([http://qualitymonline.project.mnscu.edu/](http://qualitymonline.project.mnscu.edu/)) created a set of forty specific elements, distributed across eight broad standards, by which to evaluate the design of on-line and hybrid courses. The web-based, fully interactive rubric is complete with annotations that explain the application of the standards and relationship between them. The eight broad standards for this rubric include:

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I-Seek

ISEEK (www.iseek.org) is Minnesota’s career, education, and job resource with information on career exploration education and training, and employment information. It is an extensive on-line platform that provides the user with a variety of news feeds, tools, and games to customize their personal career development plans with their own personal ISEEK home page. It helps users:

- **Explore Careers:** learn about more than 500 careers, discover growing industries in Minnesota, get details on specific careers, and figure out career pathways

- **Assess Personal Interests:** assess personal skills, identify career options that match personal interests and strengths, and find information about standardized testing to determine college placement

- **Plan Education:** research, organize, and understand education information; explore education opportunities, tips and tools to prepare for college; use financial planning tools, and find information about applying to colleges (information from 250+ education providers in Minnesota)

- **Customize a Home Page:** individualized search results are analyzed and organized to identify themes, topics, and areas of interest to guide training and employment options

- **Explore the Job Market:** learn where job openings are, identify typical wages, salaries, job growth, and potential employers

- **Apply for Jobs:** help with resume development, cover letters, interviewing skills, selling personal skills, and researching employers

Because on-line self-guided tools have become such a key ingredient in career development and education, the ISEEK resource helps individuals of every age and situation identify options. It also gives teachers and job counselors a rich and powerful set of information to direct learners.

Virtual Career Network

The Virtual Career Network (www.vcn.org) is a new on-line national resource to move new entrants, unemployed, and the underemployed into careers in healthcare-related occupations by assisting users to identify and get credentials necessary to secure employment. Going live in July, 2011, it will have several key components on its platform:

- **Career and education exploration:** licenses and certifications and pre-requisites to identify potential career targets

- **Assessment tools:** career exploration, employment readiness, and learning assessments (readiness to enter training) to identify personal interests, aptitude, and readiness
• **Gap analysis:** identifies pre-requisites for training/employment and gives credit for prior learning to identify what learners need to secure the credentials for the jobs they want

• **Free remedial training** is an on-line learning exchange including on-line courses to prepare student for entry into postsecondary programs

• **Enroll for Classes:** locate and enroll in training programs (state by state)

• **Apply for Jobs:** links to state job banks to help a find a job

• **Personal Career Management Account** is a personalized site that helps manage an individual’s preparation, enrollment, training, job search, and credentialing activities (including transcripts, certificates, certifications, test and assessment results, letters of recommendations, counselor notes, and career planning documents)

• **Enhancements:** blogs, news and events, employer profiles, on-line career fairs

• **In Development:** Tools to facilitate work-based learning connections between employer and educational institutions

The VCN’s Learning Management System is an “open source, open content” workforce service and on-line learning delivery platform built with a DOL grant by the American Association of Community Colleges (AACC).

The open-sourced platform will be enhanced with regional labor market data and local course schedules, prerequisites, and certifications by connecting with existing state and institution data systems and on-line career management tools through a Consortium of local partners including ISEEK.

**Credit for Prior Learning**

Over the past 30 years, hundreds of postsecondary education institutions have developed systems to award college credit for what people learn outside the classroom through veteran’s skills, On the Job Training (OJT), corporate training, work experience, civic activity, and independent study. Through a process called Prior Learning Assessment (PLA), colleges and universities evaluate and award credit for this learning when they determine it to be similar in content, depth, and breadth to what they consider college-level learning.
Resource for Credit for Prior Learning Assessment

Now that credit for prior learning is becoming a best practice nationwide, various organizations and groups have come forth to facilitate the process for academic institutions. One organization in the forefront is the Council for Adult and Experiential Learning (CAEL). CAEL is a national non-profit organization that creates and manages effective learning strategies for working adults through partnerships with employers, higher education, the public sector, and labor.

1974, CAEL established and disseminated standards for awarding credit through assessment. CAEL has trained faculty evaluators and conducted research on the outcomes of these efforts. CAEL encourages institutions to offer a range of PLA assessment options. The portfolio method of assessment has proven best for learners that are interested in health care professions.

More adults are exploring ways to increase and expand their skills and marketability in an effort to retain their current jobs, find employment, and compete for higher-paying positions. Many adults are looking to their local colleges and universities to deliver quality education and training in a timely manner. But, for too many adults who want to earn postsecondary credentials, the traditional structure and organization of higher education pose significant barriers to access and, particularly, to persistence and success.

Entering and completing a higher education program is more challenging for adult learners than for traditionally-aged students who come straight out of high school to the college campus. Research has shown four significant barriers:

- The lack of time to pursue education
- Family responsibilities
- The scheduling of course time and place
- The cost of educational courses

CAEL and MN On-Line Collaboration

The Minnesota State Colleges and Universities (MNSCU) system have a long history with CAEL. Metropolitan State University began working with CAEL in 1974 when Gary Langer, Associate Vice Chancellor for Academic Innovations, met with Morris T. Keeton to form a partnership with CAEL, institute the principles of prior learning assessment, and to increase access to lifelong learning for adults at the university.

In recent years, the MNSCU system has worked with CAEL to aggregate the entire system’s schools and programs into an effective on-line program, Minnesota Online. Through CAEL’s Pathways for the Future program, Minnesota State Colleges and Universities system’s Gary
Langer acted as the state liaison to connect Qwest employees to courses and programs. Additionally, Minnesota Online became a member of CAEL’s Featured Provider Network (FPN) last year. CAEL’s Featured Provider Network is a group of regionally accredited, quality higher education institutions with on-line degree programs that offer significant discounts to CAEL’s Tuition Assistance Management (TAMS) clients, TAMS manages a company’s tuition assistance program. Minnesota Online was the first public sector set of universities to join the FPN.

**Simulation**

Medical simulation is transforming healthcare education in Minnesota. Simulation techniques are being used in nearly every healthcare discipline nationwide. Techniques include simulated and virtual patients, mannequin simulators, task-trainers and computers. Advances in education in medicine, surgery, nursing, allied health and other domains in healthcare can be attributed to exposure to simulation which reduces the need for hands-on patient care during training.

According to the Society for Simulation in Healthcare, simulation has the potential for the evolution of a new teaching paradigm for the future. Simulation techniques do not depend on hospital encounters and can be paused, stopped, and replayed to enhance educational value through review and discussion. Simulation gained national attention when the television show Grey’s Anatomy used an adult MEDI simulator in a story line during the 2010-11 season.

The introduction of high-fidelity manikin-based simulation into the curriculum represents a significant shift in healthcare provider education. While the use of simulation in more primitive forms has been found in healthcare education for many years, recent improvements in technology have created highly realistic simulators capable of very high levels of fidelity – to the point that it is often possible to “suspend disbelief” in the learning environment, making the situation appear to be quite real.

There are many factors that are driving for a more wide-spread use of simulation in healthcare education. These include:

- **The growth of healthcare knowledge** – The ever evolving and increasing body of healthcare knowledge presents challenges to curriculum planners. Educators are always seeking new ways of accommodating these evolutions and increases in knowledge volume in curriculum.

- **Changes in healthcare education** – Increased accountability and outcomes measurement are increasingly called for in medical, nursing, and allied health education. Education practices and curriculum that have been in place for decades must be updated to reflect the new knowledge and demands for improving learner outcomes.
- **Patient safety** – It is no longer acceptable to use patients as primary learning models for healthcare provider students. Simulation offers a suitable alternative to allow student learning and initial demonstrations of competence to take place in a patient-free environment.

- **Patient availability** – Improvements in the clinical care environment and shorter lengths of stay in acute care settings have reduced the numbers of many once-commonly seen patient cases or diseases. This has led to a reduced opportunity for students to be exposed to these patient conditions during clinical training. Simulation can serve as replacement for many of these conditions, augmenting the clinical experience.

- **Standardization and replication** – with the pressures for improved learner outcome measurements, simulation offers the capability to create standardization in evaluation by providing consistent replication of patient cases.

While the body of peer-reviewed literature evidence on the efficacy of high-fidelity manikin-based simulation is still relatively young, what has been reported has demonstrated that simulation is a viable learning strategy in healthcare provider education (see Appendix, Section II). Research has shown that simulation has high degrees of acceptance among learners and that learners have felt highly satisfied with their simulation learning experience, even more so than learners who did not have simulation available for use. Learners’ confidence in their ability is also higher when the learning environment includes high-fidelity patient simulation.

**Example of Simulation in Minnesota**

Through a partnership between HealthForce Minnesota and the Minnesota Simulation Alliance, simulation education opportunities are expected to expand and grow statewide.

In 2010, HealthForce Minnesota invested more than $80,000 in nursing curriculum simulation. The organization awarded these funds to Winona State University-Rochester’s College of Nursing and Health Sciences and Rochester Community and Technical College Department of Nursing. HealthForce Minnesota also houses the Minnesota MSHEP simulation library for partners to access and build simulation scenarios for student and professional development (www.mnsimlib.org). This public service also enables registered users to access equipment reviews, forums, and other resources.

Recently, HealthForce Minnesota offered a Simulation Alliance Conference for leading nurse educators from across the state to learn best practices and collaborate with educators, partner institutions and the Minnesota Simulation Alliance.

Simulation techniques are being used in virtually all healthcare disciplines nationwide. Techniques include simulated and virtual patients, mannequin simulators, task-trainers and computers. Advances in education in medicine, surgery, nursing, allied health and other domains in healthcare can be attributed to simulation.
Articulation

Articulation is an agreement between two or more institutions to transfer courses. Through this agreement the institutions officially agree to transfer all of a specified program (certificate, diploma or degree).

Articulation agreements are typically written for specialized professional or technical programs. Associate in Science (AS) and Associates in Fine Arts (AFA) degrees are required to have articulation agreements. Associate of Applied Science (AAS), diploma or certificate programs may (but are not required) to have articulation agreements with four-year.

Articulation agreements serve as pathways (or “laddering”) from one degree upward to the next. It assists not only the academic institutions in clarifying the process, but articulation agreements also assist the student by making a seamless pathway in their academic advancement.

Many incumbent healthcare workers desire career-laddering educational opportunities for job and salary advancement. As all of the professions within Allied Health mature, it is important to provide educational opportunities to advance from their AAS degrees to a baccalaureate completion degree.

Articulation is common practice. One such example of how articulation agreements facilitate completion degrees is the new Allied Health completion degree in joint development between Winona State University (WSU) and Bemidji State University (BSU).

Minnesota Online recently awarded a grant to WSU, BSU, and HealthForce Minnesota to develop and deliver an on-line degree program, providing pathways for graduates of two-year Allied Health programs within the Minnesota State Colleges and Universities (MNSCU) system. Fall 2012 is the expected program launch.

Note that the above example also utilizes on-line education (previously discussed), which is a necessary educational format for working adults desiring to further themselves in their healthcare professions.

Completion Degrees

As discussed in the articulation example above, the advancement from a 2-year degree to a baccalaureate degree is known as a completion degree. HealthForce Minnesota (HFM) actively supports innovative educational programs, including a focus in the area of completion degrees. Historically, HealthForce Minnesota has provided grant funding to support projects that test innovative ways of improving healthcare practice, education, and research. These projects impact lives, increase interest in healthcare careers, encourage collaborative partnerships, create workforce solutions, and sustain programs throughout Minnesota.
Example of Completion Degree Project

One HealthForce Minnesota-assisted project in this area is the Allina Clinical Laboratory Science’s Clinical Laboratory Science Completion Degree funded in part by a Department of Labor (DOL) grant. Allina Hospitals piloted an on-line, self-paced clinical laboratory sciences program to help employees advance their education from a 2-year degree to a 4-year BS degree. Its individualized approach offered advance critical coursework, theory, and clinical levels of practice, laboratory management skills, supervisory and administrative skills and critical thinking outcomes.

The recruiting efforts and retention rate for this Clinical Laboratory Science (CLS) completion degree program was high. One of the major reasons for this was the Coach Model (similar to the Mentor Model results). The Coach Model feature is a designated “go to” person who is available anytime to respond to any and all inquiries about the program. The “coach” also shepherds potential students through the registration process and into the program.

Based on the favorable results as measured by 2-yr workers who are motivated to want to complete a 4-yr degree, (see chart below), a second cohort will be scheduled. Due to the success of the program, the second cohort has been expanded to include employees of Children’s Hospitals and Clinics as well as employees of Allina Hospitals.

2010 Results:
• 100 people came to information sessions
• 36 people registered at Winona State University (WSU)
• 27 people completed testing
• 15 people attend the first cohort for fall 2010 at WSU

2011 Results:
• 21 Allina & Children’s employees attended information sessions
• Competency testing is scheduled for June 2011
• 1st cohort continues into second year of curriculum

Competency Testing

Competency-based training and competency testing practices are increasingly becoming models of best practices in the field of healthcare education. There are two primary ways that competency testing has emerged in recent years. One area that makes efficient use of competency testing is in combination with credit for prior learning. The other major area of competency-based approach to healthcare training is in education of physicians, nurses, and other allied health professionals. Both areas are discussed below.
Example of Competency Testing as Credit for Prior Learning

As explained in the previous Completion Degree section of this report, the Department of Labor grant allowed 2-year lab technicians from Allina to enroll in an on-line BS completion degree in Clinical Lab Science through WSU. In a best-practices format, each employee/student was required to participate in a 2-day testing and lab skills assessment process to determine their readiness and give them up to 15 credits for prior learning towards their completion degree. The competency testing was based on national accreditation standards to assure high markers for knowledge and skills assessment.

Each employee/student applied for the program with different work careers, job training, continuing education exposure, practical knowledge, bench lab skills and techniques, and the clinical knowledge gained on their job. WSU evaluated those skills utilizing a written test format for testing overall background knowledge for general lab competencies, basic clinical knowledge, and theoretical clinical knowledge. Upon successful completion of the written component, the employee/students were then required to demonstrate their skills and knowledge through actual skill performance at the bench in the different laboratory areas of competency.

This is an example of how the combination of credit for prior learning (discussed in the previous section) together with competency testing facilitates advancement of working adults through the educational process as quickly as possible while maintaining the highest of educational standards.

Competency-based Healthcare Training

The second major area of competency-based approach to healthcare training is in education of physicians, nurses, and other allied health professionals.

Competency-based training shifts the focus from content-based education to an approach in which is based more on experiential learning. The focus of competency-based education is on behavioral traits that are clearly observable and measurable. An attempt to improve the relationship between training and workplace applicability is the main aim of this kind of education.

The aim of competency-based nursing education is to base the assessments of the learners on the identified needs of the nursing profession. The competencies required by healthcare professionals in the modern world constantly change because healthcare needs change continuously as well. Pertinent competencies to include in assessments are derived from the roles of the various people involved in healthcare. This way, the education process can be based on techniques that will help instill and improve these competencies in the graduates.
Relevancy and Advantages of Competency Based Education for Nursing

There are several reasons why competency-based education for nursing is relevant in today's world. The key issue here is that competencies provide a solid basis for setting standards. Healthcare professionals can also better assist students by monitoring their performance as compared to various competencies as they progress through their educational programs. Finally, the respective roles of the nurses in the field are clarified by the descriptions of various competencies. This is very helpful to students who are preparing to enter the profession.

Competency-based education is finding favor for many additional reasons. It is believed that competency-based education is more effective and pragmatic because students are better able to meet the needs of their patients and employers upon graduation. After getting such a competency-based education, healthcare professionals will also be equipped with transferable skills that they can update as need be in order to meet future needs. This kind of knowledge is comprehensive since it combines theoretical understanding with skills, attitudes, and strategy.

Healthcare systems all over the world have become highly competitive. There is a rapid expansion of knowledge in the field of healthcare education. Thus, there is a need to continuously improve the quality of healthcare education and to regularly assess relevance of both education and training of healthcare professionals. Such updates ensure that graduates are competent to meet the evolving needs of the healthcare field.

Competency-Based Approach Proposed for Physician Training

Like nursing, medical student training is being redesigned to include a competency-based approach. One example is the redesign of internal medicine training. Education of internal medicine physicians will move from a traditional time-based framework to a competency-based approach.

Competency-based training is explored in a new report published in the December 8, 2010 issue of the Annals of Internal Medicine (full article in Appendix, Section III). The authors conclude that the results of successful implementation of competency-based education and training demonstrate that residents will be well prepared for the independent practice of medicine, and patients will receive the high-quality, safe, patient-centered care to which they are entitled.

Competency and Critical Thinking

Some educators would argue that competency testing measures only the mechanical aspects of the skill being tested. New thinking in education posits that by adding real-life dynamic situations to the competency testing, the added element of critical thinking is also being tested (Appendix, Section IV).
Cross-Training
The healthcare professional of the future will undergo cross-training to be a multi-qualified health practitioner. Professionals will undertake programs of study to develop additional skills and strengths through a uniquely personal professional route based on their goals and the needs of evolving health care practices. The focus will be on the importance of successful client/patient outcomes gained through inter-professional and multi-professional learning and education. In essence, it is necessary to anticipate the future in which the practitioner will be required to care for an increasingly complex set of health care needs. The practitioner of the future will hold a broader set of professional qualifications in order to provide more holistic services to the client/patient. This “new breed” practitioner, a “hybrid,” could help reduce the cost and stresses of multiple visits by being able to deliver a balanced spectrum of care (see Appendix, Section V).

Geriatric Competency
The demographics of U.S. citizens and Minnesotans are shifting. The healthcare workforce is currently unprepared for the increasing number of older persons and the complexities of their healthcare needs. Too few healthcare workers are adequately trained in geriatrics, and developers of educational curricula across healthcare disciplines have been slow to incorporate or require geriatric training. In April 2003, leaders in geriatrics met in Washington, D.C., to discuss and recommend solutions to the growing shortage of an appropriately trained workforce for geriatric research, education, and patient care. The summary of the conference proceedings (see full article Appendix, Section VI) serves as a reminder that demographic trends and an ever-expanding geriatric knowledge base demand not only attention, but also action.

The Minnesota Legislative Commission on Health Care Access: Workforce Shortage Working Group
In the fall of 2010, the Minnesota Legislative Commission on Health Care Access Workforce Shortage Working Group convened a diverse group of 24 professionals to review issues and solutions for health care workforce shortages. After holding six meetings on related critical issues, it recommended to future legislative bodies:

- Establishment of a consistent source of direct funding for training health care professionals in primary care.
- Increased funding to expand loan repayment programs and pursuit of federal funding opportunities by institutions of higher learning whenever possible.
- Creation of a statewide council to “establish, promote, and monitor a statewide plan for addressing health care workforce issues.” In specific, they recommended that this council:
- Develop competency-based guidelines to address clinical training experience necessary for varied health practitioners to ensure eligibility for reimbursement of their services
- Consider whether modifications to state practice regulations would be helpful to serve rural and underserved populations
- Need for additional funding through MERC or other resources to expand clinical training sites
- Use of simulation centers and other technology resources to expand clinical training
- Support multidisciplinary team-based settings to better utilize the training and skills of all providers and to serve patients more effectively.

These recommendations were made to help guide future funding, policy, and legislative decisions and actions.

**The Itasca Project**

The innovative employer-led civic leadership alliance called The Itasca Project was established in 2004 (www.theitascaproject.com) to build a thriving economy and improved quality of life in the Minneapolis-St. Paul region. Specifically, the alliance focuses on economic competitiveness, quality of life, economic disparities and opportunity gap reduction, economic recession recovery, and education as a means to prepare a qualified workforce.

The purpose of The Itasca Project is to identify fresh approaches to problems, accelerate promising efforts underway, and “unite public, nonprofit and business interests behind common goals and solutions for faster, better results.” As a voluntary group of regional CEOs, a few public and nonprofit leaders, the Governor of Minnesota, the Mayors of Minneapolis and St. Paul, the Chair of the Metropolitan Council, and leaders of the University of Minnesota and MNSCU, it recognizes that complex issues cannot be solved by any single group or jurisdiction especially given today’s limited resources. Therefore, it seeks progress through active collaboration and cooperation on the most critical needs of the region.

The alliance has a unique approach to its work. Once the group identifies a priority issue, an individual CEO takes leadership and assembles a task force that figures out how to make progress on the issue, identify partner organizations around the region, and get things done with resources provided by participating partners, grants, and volunteers.

The Itasca Project’s initiatives are guided by a set of principles:
• **Facts first.** Participants are willing to invest the time and money required to get the best common fact base possible prior to working on an issue.

• **Limited agenda.** Participants agree on a limited number of priority issues that will address regional economic vitality and quality of life.

• **Unique contribution.** Participants identify a unique role for Itasca to play. That varies by initiative, but usually fills a leadership gap in order to accelerate change.

• **CEO commitment.** Participants are driven by passion. Each initiative is led by a CEO who is personally dedicated to the cause.

• **Collaboration is key.** Itasca participants often work in partnership with organizations around the region to accomplish an identified goal. Its approach is non-partisan; there is a willingness to engage multiple points of view to make meaningful progress.

• **Minimal structure.** Initiative task forces, composed of Itasca participants and members of the community, meet as needed according to the initiative work plan.

The Itasca Project’s priorities are varied and change as the economic needs of the region evolve. Besides identifying priorities to strengthen transportation and attract and retain business to the region to support job growth, several Itasca initiatives have focused on education. Itasca believes education reform is closely linked to job growth; thus, regional education system improvement is a top priority for Itasca. Past priority educational initiatives have included:

• **Minnesota’s Future: World Class School’s World Class Jobs.** The Itasca Project joined with the Minnesota Business Partnership to examine the best practices of world-class education systems, benchmark Minnesota against those systems, and identify initiatives to elevate Minnesota’s school system to world-class. (See their website for report)

• **Supporting the Strategic Re-direction of Minneapolis Public Schools** A new superintendent and an invigorated school board to build a plan to transform the district.

• **Building a Stronger University-Business Partnership** Itasca worked with the University of Minnesota to create a “front door” to the U to facilitate stronger cooperation with business, improve the process to commercialize intellectual property, and strengthen the U as a talent magnet.

• **Improving Early Childhood Education** Itasca provided Minnesota’s Governor pro-bono services to examine current programs, develop a common fact base, and identify opportunities for improvement. The outcome of the 2005 study was the basis of the Governor’s legislative agenda. Itasca supported early childhood leaders to identify and address gaps and overlaps and to develop a common change agenda.
**Projected Physician Shortage**

There is a looming physician shortage that will be driven by two main factors: 1) the increase in America’s aging population which will consume increased levels of medical care—particularly with baby boomers set to retire—and, 2) additional individuals being eligible for health care coverage under the Affordable Care Act. The Association of American Medical Colleges (AAMC)’s Center for Work Force Studies projects that the US will have a shortage of 91,500 doctors by 2020.

<table>
<thead>
<tr>
<th>Year</th>
<th>Supply</th>
<th>Demand</th>
<th>Shortage</th>
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<tr>
<td>2010</td>
<td>709,700</td>
<td>723,400</td>
<td>13,700</td>
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<tr>
<td>2015</td>
<td>735,600</td>
<td>798,500</td>
<td>62,900</td>
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<tr>
<td>2020</td>
<td>759,800</td>
<td>851,300</td>
<td>91,500</td>
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<tr>
<td>2025</td>
<td>785,400</td>
<td>916,000</td>
<td>130,600</td>
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Source: AAMC Center for Workforce Studies

Consequently, the AAMC recommends removing the cap on Medicare funding for residency positions established in 1997 (100,000 slots) to increase the number of available training slots. They suggest a 15% increase in residency programs that would result in an additional 4,000 physicians entering the workforce each year.


Of primary concern is a shortage of family medicine physicians, internists, and pediatricians. As health care delivery shifts toward a coordinated care model in which a team of primary care professionals provides services to patients, the need for primary care physicians will rise. The Wall Street Journal (WSJ) reported recently that there are 352,908 primary care physicians currently working in the U.S.—but that another 45,000 more will be needed by 2020. (April 12, 2010)

In addition, the number of students choosing family medicine as a specialty fell more than 25% between 2002 and 2007. In the same WSJ article, Atul Grover, AAMC’s Chief Advocacy Officer, asserts that it will “probably take 10 years to even make a dent into the number of doctors that we need out there.” Furthermore, even if the nation turns to doctors trained in other countries, these candidates must first complete a residency in the U.S. for licensure to practice independently—and they must compete for the same limited supply of residency slots. (Note: In 2010, roughly 13% of the U.S. residency slots were filled by non-U.S. citizen graduates of medical schools from other countries).

http://online.wsj.com/article/SB10001424452702304506904575180331528424238.html
A study conducted jointly by the National Association of Community Health Centers (NACHC) and the American Association of Family Physicians (AAFP) entitled, *Access Denied: A Look at America’s Disenfranchised*, addresses the shortage of primary care physicians and its impact. The report explains that there has been a decrease in the number of medical students choosing primary care as compared to specialty practices in large part due to the cost of medical school and the low remuneration for primary care doctors as compared to their specialized colleagues. It states:

"the number of primary care physicians per capita has changed very little, while the number of specialists has been rapidly growing....Primary care specialties have lost their appeal to U.S. medical school graduates, and specific primary care specialties are seeing young physicians look to more lucrative sub-specialization."

Primary care involves a "coordinated approach to caring for people," said AAFP member Gail Baldwin, M.D., Medical Director of the Lake Superior Community Health Center in Duluth, Minn., in a 5-panelist congressional briefing to discuss the "Access Denied" report (March 16, 2011). “Yet, public and private payment rates for primary care services lag behind those paid for services provided by many other specialties, discouraging physicians from pursuing a career in family medicine.” [http://www.aafp.org/online/en/home/publications/news/news-now/professional-issues/20070322disenfranchised.html](http://www.aafp.org/online/en/home/publications/news/news-now/professional-issues/20070322disenfranchised.html)

A recent article in Newsweek, *The Doctor Won’t See You Now: A Critical Shortage of Primary Care Physicians is Yet Another Symptom of Our Ailing Health Care System*, explored this same trend and its implications: “The annual number of American medical students who go into primary care has dropped by more than half since 1997” (Feb 25, 2011) It describes the potential for this shortage impacting the quality of care available in this country:

> Primary-care physicians, family docs, general practitioners—whatever you call them, they're the country's first line of defense, the ones responsible for promoting preventive care, finding ways to keep people from getting sick in the first place, and thus bringing down costs throughout the system. If every American went to one of these doctors regularly, health-care costs might come down as much as 5.6 percent a year, saving $67 billion, according to one estimate. Yet we don't have nearly enough doctors to make that happen, and fewer are being produced every year.

Since family physicians salaries fall in the mid $100,000 range versus $200,000-$300,000 of specialists, it is difficult to convince medical students to go into primary care. Coupled with the decreased patient interaction time now characterizing clinic visits, primary care is less emotionally fulfilling than it once was. [http://www.newsweek.com/2010/02/25/the-doctor-won-t-see-you-now.html](http://www.newsweek.com/2010/02/25/the-doctor-won-t-see-you-now.html)
Primary Care Practitioners: HRSA’s Primary Care Workforce Development Grant

Overview of HRSA’s Primary Care Workforce Development Grant

Developing Minnesota’s statewide primary care workforce plan is the focus of a Health Resources and Services Administration (HRSA) grant awarded in October, 2010. Because the Affordable Care Act will insure more people, it increases the need for healthcare workers. In addition, both the workforce and the populations is aging which means there will be increased demand for care and less people to deliver it. Therefore, HRSA funded 25 states to create plans that will increase the number of primary care practitioners in each state 10 to 25% by 2022. Minnesota was awarded $149,499 to conduct a collaborative planning process that builds on Minnesota’s many current healthcare workforce and education initiatives and represents the need of Minnesota citizens. The Governor’s Workforce Development Council (GWDC) was the applicant; it subcontracted with HealthForce Minnesota to lead the implementation of the grant.

The Federal Requirements for this grant are:

- Analyze state labor market information in order to create healthcare career pathways for students and adults, including dislocated workers.
- Identify current and projected high demand state or regional healthcare sectors for purposes of planning career pathways.
- Identify existing federal, state, and private resources to recruit, educate or train, and retain a skilled healthcare workforce and strengthen partnerships.
- Describe the academic and healthcare industry skill standards for high school graduation, for entry into postsecondary education, and for various credentials and licensure.
- Describe state secondary and postsecondary education and training policies, models, or practices for the healthcare sector, including career information and guidance counseling.
- Identify federal or state policies or rules to developing a coherent and comprehensive healthcare workforce development strategy and barriers and a plan to resolve these barriers.
- Participate in programmatic evaluation and reporting activities.

Minnesota’s response and implementation for this grant are:

- Identify and engage Minnesota’s healthcare workforce stakeholders in a new and comprehensive primary care workforce planning effort
- Analyze existing primary care workforce data and create plans to collect additional data
• Convene Data and Education Sub-Committees to assist with the planning process
• Conduct regional planning efforts to inform and support the statewide plan
• Develop a comprehensive plan which, when implemented, will ensure an increase of 10 to 25% in full-time primary care professionals over the next ten years

Primary Care Practitioners: HRSA’s Working Definitions

Primary care workforce can be defined as a traditional team of providers as well as a collaborative team of varied providers impacting health status. The two working definitions being utilized for the grant planning are:

Broad Definition of Primary Care Provider: “Clinician who provides integrated, accessible healthcare services and who is accountable for addressing a large majority of healthcare needs including providing preventative health promotion services for men, women, and children of all ages, developing a sustained partnership with patients and practicing in the context of family and community as recognized by a state licensing or regulatory authority.”

Traditional Definition of Primary Care: "The principle focus is on primary care physicians and physician assistants and nurse practitioners, but recognizes that other health professionals such as behavioral health, oral health, and allied health are also important in the delivery of primary healthcare services.”

Regional Planning Informs State Plan: Gathering Strategic Input

Input about the future of healthcare in Minnesota was gathered in 21 meetings of more than 750 healthcare professionals, educators, administrators, and policymakers around the state. The Minnesota AHEC Network organized 7 meetings, the Minnesota Office of Rural Health and Primary Care organized a webinar, and various other professional associations and alliances hosted additional discussions. (See Appendix, Section VII)

The meetings addressed three areas of general inquiry: 1) What changes/developments in primary care (positive or negative) do we know will occur for certain in the next 10 years? 2) What changes/developments in primary care (positive and negative) might catch us by surprise? 3) What ideas, strategies, programs, initiatives, and training options, etc. will help increase the availability and effectiveness of primary care practitioners by 10% or more in the next 10 years?
Summary of Strategic Input Findings

Because health care education and delivery of services is so complex, the strategic input discussions covered a wide array of concerns and ideas. Several broad themes emerged:

**Demographics:** There was great concern over impending retirements, the aging population, and the anticipated shortage of all primary care practitioners—from family medicine physicians to nurses of every sort to lab technicians to psychiatrists and other mental health professionals, etc.

**Education:** Educating enough replacement health care professionals was top on everyone’s list, especially since finding clinical training slots is difficult due to resource limitations. They said a range of factors limits clinical training site availability including: reduced MERC funding, increased demands on provider productivity and paperwork responsibilities, preceptor retirement and burnout, students from other states placed clinically in Minnesota, and institutional conversion time for Electronic Health Record implementation. Also, tuition costs and lack of seamless career laddering between and among Minnesota’s educational institutions were repeatedly cited, especially for entry-level professions and nursing. Stimulating K-12 interest in health careers is important along with learner readiness, tuition costs, and increased postsecondary distance learning and simulation options.

**Fiscal Issues:** The shortcomings of procedure-based payment for health care topped the list of financial issues. Many hoped that evidence-based team delivery of primary care in a health home setting would reform financial inequities and improve health care outcomes as well. However, they wondered how quickly the payment system would adjust to reimburse for such care.

**Health Status:** Participants emphasized the necessity of health promotion, wellness, and individual responsibility for health maintenance, etc., to manage both health status and health care costs. They hope health literacy education and public health could take a larger role in shifting our current culture of “let the doctor fix it” to a new mindset of “keeping healthy.”

**Rural Care:** The challenge of rural health care education and delivery was widely discussed. Finding enough qualified professionals to cover the 24/7 needs of health care delivery, handling the investments required for new technology, and serving a growing senior population challenge rural facilities. Participants anticipated consolidation of smaller hospitals and clinics, increased use of connectivity to consultant metro facilities and professionals, increased use of physician extenders, and more use of technology to assess patients and deliver care, especially for mental health needs. Rural clinical training options were emphasized as critically essential since training in an urban setting with a specialty-based model does not prepare graduates for rural practice.

**Technological Innovation:** While organizations and individuals often struggle to keep up with the expense of new technologies and the training required for varied personnel, participants
agreed that health care will continue to see a rise in new technology for maintaining records, treating patients on site and at a distance, and providing new and additional learning experiences.

**Diversity:** Of key concern was the growing diversity of Minnesota’s population that challenges health providers to recognize, understand, and accept varied health care beliefs and norms. More provider diversity is considered imperative to better serve our increasingly diverse patients.

**Work/Life Balance:** Lastly, there was recognition of changing student and new graduate values. Young people have more interest in work/life balance. Students and graduates are choosing away from the traditional 24/7 schedules needed in health care settings. Participants said this shift in values was reducing interest in primary care careers. When coupled with the high debt loads students take on and the lower salaries paid in primary care, many fear there will simply not be enough providers to meet health care demands.

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**HCMC’s Physician, Leadership, & Patient Input**

**Key Findings**

In the spring of 2011, Hennepin Health Foundation (HHF) asked for thoughtful insight and feedback from staff physicians, HCMC leaders from emergency medicine, allied health, and ambulatory care, nursing leaders from HCMC and nursing programs affiliated with the medical center as well as a sampling of patients to help direct development of its strategic goals and initiatives.

Participants responded to a set of questions designed to identify best practices for health professions education and related care delivery issues in facilitated focus groups. Jane Foote, Executive Director of HealthForce Minnesota led all but one of the focus groups, while Dr. Tim Crimmins facilitated an additional group.

Several themes emerged: a focus on team delivery of care in a compassionate manner, electronic records and evidence-based care, geriatric training and services, sensitivity to diverse patient populations, and in education—increased technology, simulation, competency metrics, and interdisciplinary training. More specifics are described below (see HCMC Summary of Focus Groups, Appendix, Section VII).

**Physician Findings**

According to the HCMC physicians interviewed, the landscape for health professions education will change substantially in the following ways.

- Technology will continue to play an increasing role in teaching, research, clinical practice, and the exchange of information. Participants shared their views that it would be imperative to not lose the “human connection” as these technology tools are employed.
• Allowing the spectrum of users to intentionally help shape how these tools are utilized will be important. Therefore, there will be a need for ongoing technology training for staff, employees, and administration.

• A shift away from measuring learning via contact hours to competency-based training will take place requiring a new set of assessment metrics. Time will continue to be an issue—there is an increasing amount of information and skills to acquire in a given career path. Learners have different learning styles and competency based education will allow for greater assurance that skills are attained than in an hours based program.

• Since “teams” of professionals will deliver care in the future, more interdisciplinary training is imperative: each team member will need to fully understand and appreciate the contribution of their team member colleagues.

• Geriatric practice in every health profession is expected to grow. Consequently, modules addressing the complexity of geriatric needs and care are essential for all health professionals, especially in the primary care spectrum of professions.

• Students will “encounter patients in earlier and more meaningful ways.” Case studies, clinical experts, competitive team projects, and other creative teaching modalities will be designed to promote in-depth clinical understanding, reasoning, and judgment.

• Patients and providers will create a more collaborative approach to treatment as patient centered care and web based resources continues to find its place in health care reform.

The HCMC key physicians interviewed also thoughtfully identified essential elements of education to develop critical thinking and clinical reasoning. While they suggested that family members would be trained for follow-up care, their key points for health care education included:

• Simulation, virtual reality, tele-health, interactive platforms, blogs, podcasts, portable technology, and other technological innovations would enable learners to develop clinical and communication skills, better understand procedural steps and the situational context of the patient, connect with a broader set of patients, record and playback treatment scenarios to enrich clinical understanding, and learn by “doing.” This is especially important for emergency medicine.

• Innovative learning models—designed with adult learning principles and often custom-tailored for the individual—will need to be developed to foster clinical reasoning and judgments earlier in and throughout training. For example:
  • Patient interviews might illustrate disease issues (i.e. rheumatoid issues)
Deeper understanding of clinical issues might be gained by studying a “region” of the body such as the heart (anatomy, physiology, pathophysiology, diagnosis and treatment of varied diseases, pharmacology, etc.)

Creative problem-solving, differential diagnosis strategies, and case studies might be emphasized to get learners to “think out loud”

Faculty experts will assist learners to explore specialty areas as well as serve as mentors for clinical thinking

- Social technologies will provide more opportunity for connection with other students and support of diverse learners.
- Physician faculty members would engage in ongoing professional development including educational methodology and teaching competencies

The HCMC key physician thinkers discussed means to cultivate conversational skills to use with diverse patients. Meaningful and engaged direct experience with diverse populations was at the top of their list. In addition, the message that respectful communication is imperative to clinical success rather than just “frosting” should be built into all health care curriculums. Participants were concerned that shrinkage of patient interaction time works against gaining better understanding of patients’ unique needs. They suggested that current faculty and alumni might have a mentoring role to model effective conversations and encourage appreciation for the uniqueness of each patient. They wanted learners to be open, ask questions, and approach each individual with sensitivity and awareness.

**Key Nursing Findings**

The Nursing leadership group shared insight that reflected the evolving role of nursing and the development of a team model of care delivery. They suggested that the following factors needed to be acknowledged to prepare future health professionals:

- Interdisciplinary team relationships can facilitate better understanding; professionals learn about collegiality as they work together
- Logistical barriers exist in getting disciplines to work together—on-line training might help (UMN’s ethics pilot was cited as an example)
- Need to rethink the current, very limited definition for clinical experience
- Changing curriculum models (with the move away from the generalist model) creates an opportunity to customize education to student interest and future practice
- Nurse practitioners will take on increasingly complex patients as more interdisciplinary teams and evidence-based practice are utilized for delivering quality care
• Nursing can provide leadership at the bedside and in primary care clinics given their dual expertise with illness care and ability to promote healthy life choices (RN through DNP)

• RNs will need increasing levels of education due to the complexity of care requiring career pathways and articulation between 2 year and 4 year programs. (Nursing education has shifted from apprenticeship model to academics combined with clinical skills)

The HCMC Nursing leadership also had suggestions to improve health care professional education:

• Designated Education Units (DEUs) should be piloted to facilitate interdisciplinary and collaborative partnerships, increase staff engagement with students at bedside, and free up faculty for reflective role in education

• Include undergraduate and graduate level students within interdisciplinary teams

• Increase active faculty collaboration and engagement with staff involved in teaching

• Incorporate the learning curve: view mistakes as teachable moments without affecting patient care or outcomes realizing that clinical reasoning develops over time

• Use simulation to develop confidence and clinical reasoning for students and faculty
  • Simulation increases clinical skills and confidence of adjunct or part-time faculty
  • Interdisciplinary simulations hold great promise for studying cases collaboratively
  • Simulation requires deep reflection—timely debriefing is important
  • Simulation could be used to address cultural competence and diversity

• Create cultures of practice to facilitate success for diverse students of color

• Recruit and retain diverse faculty

• Use clinical agencies to help identify clinical/disease management skills that need development

Key Leadership Findings

Training: Allied Health, Ambulatory Care, and Emergency Medical Services leaders at HCMC were concerned about the high level of training that would be needed in the future. Fortunately, web-based and on-line conferences would reduce travel time and expense (assuming remote facilities would have screens, projectors, and conference rooms). Training would be required to:

• Keep up with rapid changes in health care delivery (i.e., EPIC)
• Electronic health records and other digital functions (email, etc.) with extra support for older workers to attain computer skills and confidence

• Communication challenges among diverse staff and patients, especially for role clarification (RNs and MAs)

• Address patients’ specialized health needs that occur often or require swift and accurate interventions (i.e., diabetes, infection control, triage)

Customized training for new employees as well as established professionals who need to refresh or learn new skills was a repeated theme. Training needs to:

• Be more individualized to the learner

• Be tailored to a particular site’s workflow to increase productivity (Just In Time-JIT)

• Use simulation to refine and validate skills

• Include training on communication, professionalism, and more in-depth diversity skills

• Utilize individual assessments to cultivate skill development and awareness (i.e., IDI personal inventory for diversity skills)

**Education:** These professionals echoed the thoughts of their physician colleagues. Education needs to be competency-based, utilize mentors, train with interdisciplinary teams to help clarify roles and build cohesiveness, and incorporate ongoing diversity communication skills as well as on-line education, simulation in realistic settings such as an ambulance, and virtual teams working on case studies. They suggested five phases to teach critical thinking and reasoning:

• Pre phase set up by managers

• Hospital phase of learning

• Observation/shadow phase

• Central clinical phase involving competency testing

• On-Site mentorship phase

• Reflective phase to identify progress and gaps

**Future Strategic Focus:** When asked to consider the areas of focus HCMC might emphasize into the future, the HCMC leadership group suggested a core of key areas: geriatric care, trauma and critical care, international health and immigrant care, and safety net services. When asked where investments should be made to prepare for the future, they suggested:
- Continued development of electronic health record
- Creating a simulation center that includes emergency medicine situational training
- Creating a senior care system
- Adding more physician extenders and clinical pharmacists to support primary care
- Team and interpersonal skills training
- Physician leadership training and mentoring
- Delivering data-driven care to deal with scarce resources
- Developing partnerships with colleges and schools to assist with expansion needs (sites and expertise)
- Recruiting Minneapolis high school students to enter health care career training
- Generating revenue by training first responder skills in community-based agencies, other settings, and individuals

**Key Patient Findings**
The patient advisory group was asked to describe the traits that created confidence in the quality of their treatment. Without hesitation, they asserted that a reputation for excellence along with compassionate, caring, unrushed, attentive manner from health care professionals with whom they interact gave them the most confidence. They appreciated honest and direct answers to questions, a feeling of support through crisis, and being pointed to resources that could help them improve their health status. They didn’t mind being in a teaching setting if their experience could inform learners, but they minded stereotypes that are often placed on the various elements of the populations served at HCMC.

**Summary of HCMC Focus Groups**
There was an obvious passion expressed by all the focus groups regarding the care they provide that crossed their individual role at HCMC. The safety net status of the organization was seen as a privilege in that they reach far into the community with the care provided. The patient group had a small but passionate membership whose voices wanted to remind the facilitators that there was an opportunity to market HCMC as not only a safety net, but also a hospital of choice for excellent care across the lifespan.
Minnesota’s Need for Health Professional Training

Michael Harristhal from HCMC led an inquiry in 2008 into the need for training of health professionals in Minnesota to help determine the scope of HCMC’s new Education center and future clinical space. Currently, HCMC serves as a vital training hub for a broad range of educational functions including:

- Allied Health Worker Education
- Community Education
- Continuing Medical Education
- Employee Education – Professional Development
- EMS Education
- Graduate Medical Education
- Medical Observer and Trainee Education
- Medical Student Education
- Nursing Education
- Outreach and Trauma Services Education
- Patient Education

For example, 2,713 individuals from 163 different entities (e.g. sheriff, police, fire, hospital and clinic personnel) came for EMS training in 2006. Also that year, 6,150 persons attended injury prevention programs and 4,330 individuals from 42 different Minnesota cities came for trauma and critical care presentations.

HCMC is also a primary site for medical training as a teaching affiliate of the University of Minnesota. More than 280 FTE resident physicians (868 individuals—and 45% of the state’s total annual volume) and 90 medical students do clinical rotations at HCMC from varied training programs including:

- Dentistry
- Family Medicine
- Internal Medicine
- Obstetrics/Gynecology
- Pediatrics
- Psychiatry
HCMC is an active clinical training site for nurses as well. Roughly 900 nursing students rotate through each year including 830 RN candidates, 50 Advanced Practice nurses, and 20 LPNs. A wide variety of additional health care professionals from about 20 Minnesota colleges also train at HCMC including:

- Communication/Speech-Language Therapists
- Dental Assistants
- Emergency Medical Technicians/Paramedics
- Health Information Management
- Medical Technologists
- Occupational Therapists
- Pharmacists
- Physical Therapists
- Physician Assistants
- Radiology Technicians

The research from Minnesota’s Department of Health and Department of Employment and Economic Development helps illuminate the future need for varied health professionals and consequently, the need for training. Projections are driven by two main factors: 1) the aging workforce that will soon create a significant need for replacement professionals and 2) the increased demand for health care services as baby boomers reach retirement and retirees live much longer lives.

While it is difficult to project future demand precisely, HRSA, the federal Health Resources Services Administration, projects that there will be a need to increase professionals in the primary care arena by 10-25% in the next decade Minnesota’s DEED suggests that an additional 17,412 nurses will be needed by 2019—an overall growth of almost 23%. DEED labor market information suggests that demand for other clinical professionals is growing rapidly, too. (See Appendix IX ) For example: the growth in demand in the Twin Cities and statewide per category by 2019 on average is projected to be:

15% Pharmacists
17% Dentists
21% Physical Therapists
20% Emergency Medicine Technicians and Paramedics
28% Family Medicine Physicians
28% Radiology Technologists
47% Physician Assistants

There are simply not enough training programs, faculty, or clinical training slots to accommodate such an increased need. Unique solutions at the cutting edge of training and education will need
Medical Education and Research Costs (MERC) Funding

When the Minnesota Legislative Commission on Health Care Access Workforce Shortage Working Group convened to review issues and solutions for health care workforce shortages (see page 14), there was consensus among members that Medical Education and Research Costs (MERC) funding is vital to provide clinical training to health care professionals. In fact, its final report specifically states that “MERC funding must be preserved at least at its current level in order to meet Minnesota’s pressing need to train health care professionals.”

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www.commissions.leg.state.mn.us/lchca/wg_workforce_shortage.html

Originally, the MERC fund was established to cover a portion of the costs of clinical training, help offset lost patient care revenue for teaching facilities, and to help ensure continued excellence of health care research in the state. MERC funding has been an important incentive and support to the training of health care professional students and residents. More than 500 training sites receive MERC funds for all provider types across the state, and more than three thousand trainees benefit annually from this funding. MERC funds come from three sources: PMAP (the state’s Prepaid Medical Assistance and prepaid GAMC programs); federal Medicaid matching funds obtained by the Department of Human Services; and the cigarette tax and is administered by the MN Department of Health.

According to the University of Minnesota’s “Medical Education and Research Costs (MERC) Fact Sheet” published by its Academic Health Center, MERC covers clinical training of medical students and residents, dental students and residents, pharmacy students and residents, advanced practice nursing students, physician assistant students, and chiropractic students.

www.ahc.umn.edu/policyleader/hottopics/merc/mercfacts/index.htm

MERC funds can only go to organizations that provide clinical training to students and residents from one of the state’s sponsoring institutions (e.g. University, Mayo, Hennepin, St. Scholastica, and state colleges). In essence, the money follows the students and goes to hospitals, clinics, and pharmacies.

This help is significant for Hennepin County Medical Center: its Reimbursement Department reported that in December of 2010, it received $8,860, 828 in MERC funding. In addition, HCMC also received $1,035,360 [62J.692, subd 7, clause (2)] via a transfer that is part of the clinical dental education innovations pool.

http://www.health.state.mn.us/divs/hpsc/hep/merc/grantupdates.html


This past spring, MERC funding was set to be cut 92% by the Minnesota State Legislature. This would have affected all training sites and caused smaller programs to close. The Minnesota Hospital Association, The Minnesota Medical Association, and a coalition of more than 20 of the
state’s top businesses and health care organizations sent letters opposing MERC funding reductions. As a result, Governor Dayton vetoed the Health Human Services Omnibus Budget bill.

**Summary of Best Practices in Education for Healthcare Professionals of the Future**

Best practices in education for healthcare professionals of the future embrace the systems, modalities, technology and tools discussed above that facilitate:

- Encouraging youth and non-healthcare workers to move into the healthcare fields.
- Moving working adults already in the field of healthcare up the career ladder easily and efficiently toward higher degrees of education with higher levels of skills and greater scopes of practice.
- Coordinating local and statewide efforts by partnering with other educational institutions system-wide to use what is already in place, rather than re-inventing courses and programs.
- Cross-training, which provides maximum flexibility in a rapidly changing healthcare dynamic, as well as providing for a more patient-centered focus for better outcomes.
- Expanding geriatric competency, as the demographics of our aging population is shifting the focus and needs within all healthcare systems.

Our healthcare professionals of the future will be better educated with greater scopes of practice to accommodate the healthcare needs of our population. Educational systems need to prepare to expedite for this shift.
Appendix

I. Developing e-learning Capability in Healthcare

A strategic approach to developing e-learning capability in healthcare


Abstract

Objectives

- This article examines a strategic approach to developing e-learning capability to enhance learning opportunities for the workforce of a healthcare organization. Emphasis is given to the procurement of a bespoke Managed Learning Environment (MLE). Strategic organizational issues impacting on future e-learning developments are considered.

Methods

- The 2-year implementation plan was evaluated through a two phase external research project. The first phase focused on the effectiveness of a training program designed to build capacity for e-learning within the Northern area and also included a virtual learning environment usability study which informed the MLE specification. The second phase evaluation is ongoing during 2005 and interim findings are presented.

Results

- The MLE has been piloted and on-line learning packages have been acquired. There has been a phased take-up of e-learning opportunities and e-tutor training. Some virtual Communities of Practice have been established. Key organizational issues have been identified and ongoing findings are informing strategic planning.

Conclusions

- The healthcare MLE is offering enhanced learning opportunities and assisting area healthcare providers in training their dispersed workforces. Blended learning strategies are most successful. The need for protected time for e-learning is a key issue, financial savings are available. Progress has been slowed by identified organizational constraints—the MLE’s benefits are widely recognized.
**On-Line Delivery Tools**

- Web-Based Communication – one example is Skype, where a person clicks on button, image, or text to hold a real-time conversation with someone else using Voice-over-Internet-Protocol (VoIP).

- Video Conferencing – allows all participants in a course to see and hear each other in real-time.

- Webinar – traditionally referred to as web conferencing, all students in a course participate from their computer or portable device in real-time.

- Text Messaging – course participants communicate with other students and instructor to share information and contribute to discussions.

- Google Docs – allows students to work with other students in real-time on collaborative presentations, documents, or databases.

- Twitter – students can communicate and share information with others in a course by providing links to their work, websites, videos, webinars, and other course related information.

- Forums – students contribute to discussion threads related to course topics.

- E-mail – students communicate with classmates and instructors sharing their views about course topics, along with attaching documents and providing links to relevant materials.

- Blogs – students read course materials and leave comments regarding their views of the discussion topic.

- Webinar Database – provides students opportunity to view web conferences they missed using their computer or portable device.

Mobile learning is happens when an adult learner is not limited to a fixed or predetermined location. Adult learners can also take advantage of the on-line learning opportunities using portable technologies.

The value of mobile learning includes:

- **Light Weight Devices** – for example PDAs, cell phones with cameras, laptops, tablet computers, and smart phones.

- **Learning Support** – this is provided by podcasts, videos, e-books, web-based tools, and webinars. These portable tools also allow adult learners to share information gathered with classmates and instructors.
II. Simulation

The introduction of high-fidelity manikin-based simulation into the healthcare provider education curriculum represents a significant shift in healthcare provider education. While the use of simulation in more primitive forms has been found in healthcare education for years, recent improvements in technology have created highly realistic simulators capable of very high levels of fidelity, to the point that it is often possible to “suspend disbelief” in the learning environment, making the situation appear to be quite real.

What Simulation Is

There have been many definitions made as to what simulation is in education. Some of these definitions refer to the “simulator” while others refer to the “simulation.”

- “A simulator is a training device that closely represents reality but in which the complexity of events can be controlled (Joyce et al., 2004, p. 327).”

- “Simulation is a training and feedback method in which learners practice tasks and processes in lifelike circumstances using models or virtual reality, with feedback from observers, peers, actor-patients, and video cameras to assist improvement in skills (Eder-Van Hook, 2004, p. 4).”

- “Simulations are created experiences that mimic processes or conditions that cannot or should not be experienced firsthand by a student because of the student’s inexperience or the risk to the patient (Morton, 1997, p. 66).”

- Simulation “refers to an activity that is designed to help participants acquire insight into the complex relationships and interconnected structures within a particular context. It is a way of preparing for (or reviewing) action in the real world (Leigh & Spindler, 2004, p. 54).”

Applications for Simulation in Healthcare Education


While their list was for education in general, there are direct examples of each application in healthcare provider education.

1. Competition – Simulators have been used frequently in healthcare provider education as a means of assessment, which could be considered a form of competition.

2. Cooperation – Teamwork is a critical skill that is frequently featured in healthcare simulation scenarios.
3. Empathy – Realistic simulators that have the ability to speak can allow learners to demonstrate empathy for the simulated patient. Additionally, when conducting multidisciplinary simulation sessions, empathy can be generated for the roles of other team members.

4. The Social System – Team skills in a multidisciplinary team often involve complex social interactions between team members of varying levels of authority and experience.

5. Concepts – Demonstration of concepts such assessing the simulator to find a diagnosis is a common simulator use.

6. Skills – Many simulation education sessions involve the application of psychomotor skills, such as endotracheal intubation, to be performed.

7. Efficacy – During the simulation, learners have the opportunity to see the effect of their actions and determine if their action achieves the desired effect.

8. Paying the Penalty – Since the simulation will allow for mistakes, consequences of those mistakes can be seen and discussed.

9. Role of Chance – While one advantage of simulation is standardization, there is still the element of chance being introduced as an unintended consequence.

10. Critical Thinking – Through the process of reflection (either reflection in action while the simulation scenario is progressing or reflection on action after the simulation is complete), learners develop the skills needed to critically analyze their own actions and develop new strategies. Gaba (2004b) generated a list of 11 dimensions to be considered in healthcare.

**Drivers for Simulation Use**

There are many drivers in place that are pushing for a more wide-spread use in healthcare education. These include:

- The growth of healthcare knowledge – the ever evolving and increasing body of healthcare knowledge presents challenges to curriculum planners. Educators are always seeking new ways of accommodating these evolutions and increases in knowledge volume in curriculum.

- Changes in healthcare education – calls for increased accountability and outcomes measurement are increasingly brought up for medical, nursing and allied health education. Education practices and curriculum that have been in place for decades must be updated to reflect the new knowledge and demands for improving learner outcomes.
• Patient safety – it is no longer acceptable to use patients as primary learning models for healthcare provider students. Simulation offers a suitable alternative to allow student learning and initial demonstrations of competence to take place in a patient-free environment.

• Patient availability – improvements in care in the clinical environment have reduced the numbers of many types of patient cases making what were once commonly seen diseases or events are much rarer. This has led to a reduced opportunity for students to be exposed to these patient conditions during clinical training. Simulation can serve as replacement for many of these conditions and augment the clinical experience.

• Standardization and replication – with the pressures for improved learner outcome measurements, simulation offers the capability to create standardization in evaluation by providing consistent replication of patient cases.

While the body of peer-reviewed literature evidence on the efficacy of high-fidelity manikin-based simulation is still relatively young, what has been reported has demonstrated that simulation is a viable learning strategy in healthcare provider education. Research has shown that simulation has high degrees of acceptance among learners and that learners have felt highly satisfied with their simulation learning experience, even more so that learners who did not have simulation available for use. Learners’ confidence in their ability is also higher when the learning environment includes high-fidelity patient simulation.

**How Simulation Works**

One of the main education theories that explain how simulation works is based on the concepts presented by Kurt Lewin and David Kolb called the experiential learning theory (ELT). ELT is comprised of two primary components to be effective. The first is an active experience in which the learning interacts with the learning environment. Simulation provides this immersive experience very well; however, the experience itself is not where the learning occurs. Learning occurs in the second component, the reflective process. In the reflective process students review the actions of the experience and identify areas for improvement. The process then continues in a cycle that builds on each experience and reflective action.

**Simulation in Nursing Education**

High-fidelity manikin based patient simulation has been conducted with a variety of health professions of students and practicing healthcare providers. While the majority of published studies focus on medical (physician) education, the application and benefits of patient simulation are similar for nursing. Feingold (2004), Peters (2000) and Yaeger (2004) state that the medical education model and the nursing education model have many similarities.
Nehring and Lashley (2004), Bearnson and Wilker (2005), Feingold, Calaluce, and Kallen (2004) and Farnsworth, Egan, Johnson and Westenskow (2000), all conducted research on students’ comprehension, students’ perception of learning, impact on critical thinking and critical skills. All of this research produced findings in which simulation-based education helped increase all of these areas. Additionally the results shows the vast majority of students or novice nurses felt the simulation was a valuable tool for learning and that it gave them a greater confidence in performing a patient assessment.

Similar studies conducted by Minnesota and South Dakota nursing programs are producing similar results. Those actively collecting data so far have been Ridgewater Community College, South Central Community College and South Dakota State University.

Currently, there is little data concerning what the needs of nursing education as a whole as they pertain to simulation. However through many meetings in which simulation is a discussion point three areas repeatedly arise: (1) the availability and development of the curriculum used when conducting simulation – simulation scenarios; (2) funding for simulation equipment; and (3) understanding the best ways to utilize the simulation equipment in their programs.

Currently HealthForce Minnesota is working to help education programs with these needs. HealthForce is housing a simulation digital library in which educators may access simulation scenarios for download and use. (www.mnsimlib.org) Additionally, HealthForce has helped fund faculty time so that additional simulation scenarios can be developed and shared statewide. HealthForce has helped education programs by offering grant funds to apply for assistance in purchasing equipment. Finally, HealthForce coordinates a network of nursing educators who are using and interested in simulation. This network meets approximately four times a year in which participants tour each other’s simulation centers/classrooms, hear from each other how simulation is used in their programs plus ask for help in how others have been successful utilizing simulation resources.

(Article prepared by HealthForce Minnesota)

**ARTICLE REFERENCES**


III. Competency-Based Internal Medicine Training

Competency-Based Approach Proposed for Internal Medicine Training

Emma Hitt, PhD

December 8, 2010 — The redesigning of internal medical training, such that education will move from a traditional time-based framework to a competency-based approach, is the subject of a new report published in the December 7 issue of the Annals of Internal Medicine.

The Alliance for Academic Internal Medicine Education Redesign Task Force II consists of members of various academic and administrative groups in the area of medical education, as well as representatives from the American College of Physicians and the American Board of Internal Medicine.

According to the authors, success in current training is focused "largely on demonstrating acquisition of specific knowledge, and, to a much lesser extent, skills and attitudes. "They add that the "application of what was learned frequently is not evaluated directly in the context of actual healthcare delivery."

A previous task force had been convened; its deliberations were reported in 2007. "Building on the work of the first task force, the second task force was charged with examining competency-based education and training more deeply," they write.

The task force identified at least 4 broad areas of deficient educational content and experiences: knowledge and skills relating to quality improvement, use of skills in various healthcare settings and in multidisciplinary teams, use of a patient-centered approach emphasizing disease
prevention and chronic disease management, and the ability to weigh the cost and value of
treatment.

In 2001, the Accreditation Council for Graduate Medical Education Outcome Project identified 6
general competencies that should be required for residents in all specialties: medical knowledge,
patient care, professionalism, interpersonal and communication skills, practice-based learning
and improvement, and systems-based practice. However, according to the authors, these
competencies focus on "defining the desired 'finish line' of residency training, not the path for
getting there."

The current report includes several suggestions that may help the transition from a traditional
time-based framework to a competency-based approach to meet these core competencies.

One suggestion is to extend the traditional 36-month training program until the resident has
completed all of the competencies. Another is to provide experiences during residency training
that have clearly defined outcomes and goals and to use evaluation systems that incorporate
direct observation and multisource feedback. The authors also suggest that faculty should be
trained to ensure that they have the skills needed for assessing trainees.

"With successful implementation of competency-based education and training, residents will be
well prepared for the independent practice of medicine, and patients will receive the high-
quality, safe, patient-centered care to which they are entitled," the authors conclude.

Editorialist Michael E. Whitcomb, MD, from George Washington University, in Washington,
DC, notes that the "internal medicine community must develop a
structured approach to ensure
that program faculty repeatedly observe residents as they care for patients in various clinical
settings."

However, Dr. Whitcomb points out that such observation will require "substantial resources." He
also cautions that the Outcome Project may inadvertently distract from effective residency
training redesign "by requiring the clinical encounter to be deconstructed into vaguely defined
domains for accreditation purposes."


**IV. Competency and Critical Thinking**

Abstract: Siegel on Competency Testing and Critical Thinking

Harvey Siegel argues that minimum competency testing (MCT) is incompatible with strong
sense critical thinking. His arguments are reviewed and contrasted with positions held by John
E. McPeck and Michael Scriven. Siegel's arguments seem directed against the prevailing form
of MCT. However, alternative formats that allow for the aggregate and context-sensitive nature
of critical thinking are not doomed to the arbitrariness Siegel finds. MCT may be a legitimate
and useful means for furthering critical thinking as one of our educational ideals.

V. Cross-Training
Conclusion: The Times They Are A Changin’

We have discussed here the importance of outcome rather than process in terms of inter- and multi-professional learning and education. In essence, it is necessary to think ahead of the game in relation to the practitioner required to care for the complex health needs of the future. A case in point is the length of courses and the long run-in between recruitment and qualifications which causes such headaches with human resource planning in healthcare. Having suggested the development of a “hybrid”, we recognize that the length of a program is just one of many changes required if this is to become a possibility. It seems evident that to embrace inter-professional education fully there is a strong need to consider fully multi-professional outcome. People should not become too precious around their own specialism, which while essential and necessary will always detract from inter-professional education. They should not become hung up on what this coming together of learning and outcome will be called; it is not that important what term is used. What is important is that professional bodies begin discussion around sharing common learning hours with an aim to interpreting and encompassing these hours into one program that gives dual or triple qualification. While acknowledging that this has been carried out in areas such as learning disabilities nursing and social work, it is interesting that from those programs the professional usually chooses only one route to practice, while still holding the dual qualification. This is because no specific employment route exists for them. This is an important lesson. For the future, careful consideration needs to be given as to where a new “hybrid” could be employed in order to make the clients journey through the health service a satisfying one; a journey during which the client experiences care which is fit for purpose and practice.


VI. Geriatric Competency
Bridging the Workforce Gap for Our Aging Society: How to Increase and Improve Knowledge and Training

Report of an Expert Panel: Alice Mankin LaMascus, MS, Marie A. Bernard, MD, Patricia Barry, MD, MPH, Judith Salerno, MD, MS, and Joan Weiss, PhD, RN, CRNP

The healthcare workforce is currently unprepared for the increasing number of older persons and the complexities of their healthcare needs. Too few healthcare workers are adequately trained in geriatrics, and developers of educational curricula across healthcare disciplines have been slow to incorporate or require geriatric training. In April 2003, leaders in geriatrics met in
Washington, D.C., to discuss and recommend solutions to the growing shortage of an appropriately trained workforce for geriatric research, education, and patient care. After considering data, presenting statistics, and offering insights into the future, the conference concluded by formulating recommendations to meet specific challenges. This report is a summary of the conference proceedings and recommendations, and it serves as a reminder that demographic trends and an ever-expanding geriatric knowledge base demand not only attention, but also action. (J Am Geriatr Soc 53:343–347, 2005. Key words: healthcare workforce; workforce gap; geriatric trained workers; geriatric training) Projections indicate that by 2030, 71 million of us will be aged 65 and older, representing one-fifth of the U.S. population, the largest proportion of older persons in American history. This aged population presents an array of challenges. Older persons use the healthcare system more often than their younger counterparts. Their needs are more complex because of multiple chronic conditions coupled with acute illnesses, diverse living arrangements, and a variable range of economic, physical, and cognitive abilities. It is crucial to train researchers, educators, and the healthcare workforce in geriatric care, and an interdisciplinary approach is essential. This paper summarizes the April 2003 conference “Bridging the Workforce Gap for Our Aging Society.” Geriatricians and other experts, from government and the private sector and from clinical and research backgrounds, came together to offer their best advice and predictions for the future. They then formulated recommendations to meet the specific challenges relative to research, education, and patient care.

**PREDICTIONS ON AGING**

In the United States today, 13%, or approximately 35 million, of our population is aged 65 and older. In just 7 years, the “baby boomers” will begin turning 65. Ten thousand “boomers” per day will reach this milestone over the next 20 years. By 2030, the number of people aged 65 and older will have doubled, swelling to 71 million. One in five Americans will be 65 and older. The fastest-growing segment, and the segment of the population that will place the greatest demand upon the healthcare system, those aged 85 and older, will rise in number from 4 million to 20 million by midcentury. The number of centenarians in the U.S. population will soar to more than 800,000 by 2050. People are not simply living longer; their healthcare expenses are increasing as well. In 1999, 95% of persons aged 65 and older had some healthcare expense, including prescribed medications. Chronic conditions, often more costly than acute, are more frequent; by age 75, most adults have at least two to three chronic medical conditions. The very nature of chronic conditions means that these costs persist over time. Today’s elderly, only 13% of the population already account for half of all physician visits and hospital stays. One long-standing problem that exemplifies the need for greater knowledge of geriatric care is inappropriate medication use. The U.S. Government Accountability Office estimates that 17% of the medications prescribed to the elderly are inappropriate and result in $20 billion per year in unnecessary hospital costs. This is also a segment of the population for whom growing quantities of technology are applied to care, contributing to increased total healthcare costs. Sixty percent of all Medicare beneficiaries have two or more chronic conditions. Although 20%
of Medicare beneficiaries have five or more chronic medical conditions, two-thirds of total Medicare dollars is spent on this group. Between 2003 and 2012, Medicare spending is projected to increase much faster than the economy as a whole. Spending on Social Security, Medicare, and Medicaid will double from 7.8% of the gross domestic product (GDP) to 14.7% of GDP by 2030.

**HEALTHCARE WORKFORCE**

Despite the growth of the older population, the healthcare workforce is not prepared for the number of older persons or the extent of their healthcare needs. In 1995, participants at an invitational National Forum on Geriatric Education and Training concluded that no healthcare profession met the minimum number of personnel trained in geriatrics necessary to adequately meet the needs of the elderly. Bridging the Workforce Gap speaker Daniel Perry, Director of the Alliance for Aging Research, speculated that “the disconnect between the growing numbers of older persons and the professional training of their formal caregivers is nearly as far apart as it ever has been.” For example, only 5% of social workers identify their primary practice area as geriatrics, and of 200,000 pharmacists, only 720 have geriatric certification despite higher than average use of prescriptions by the elderly. The number of geriatricians remains low at 9,000 and is predicted to drop to 6,000, despite recent efforts to increase physician training. Although the Alliance for Aging Research estimates that 36,000 geriatricians will be needed by 2030, many educational institutions, including schools of medicine, nursing, pharmacy and dentistry, still do not require geriatric training. Additional geriatric training for the current healthcare workforce is another important issue, but many healthcare institutions are slow to embrace such training. According to Captain Kerry Nessele of the U.S. Public Health Service, the Bureau of Health Professions, “its Geriatric Education Centers has trained more than 400,000 health profession faculty, students and practitioners in the diagnosis and treatment of seniors’ health problems.” Unfortunately, many more workers still need geriatric training. The current workforce itself is aging; in 1970, there were 4.6 workers for every Medicare recipient, whereas today, there are approximately 3.7 workers per Medicare recipient, and by 2030, the number of workers is projected to be 2.4 per Medicare recipient. Geriatric nursing leader Dr. Terry Fulmer reported that the average age of nurses in America is 45, with only 10% younger than 30. Nursing faculty is older still, averaging age 50. As the age wave rises, retirement and attrition will deplete the already insufficient healthcare workforce that has been trained in geriatrics. The shortage of geriatric-trained workers is only part of the story. Too few academic geriatricians exist to provide training for others, and this trend is not expected to change in the near future. Less than 1% of medical school faculty list geriatrics as their primary specialty. Only nine allopathic and osteopathic medical schools have full departments of geriatrics, although many schools have divisions within departments of medicine or multidisciplinary aging programs. According to Association of Directors of Geriatric Academic Programs (ADGAP), the six allopathic medical schools with departments of geriatrics are Mt. Sinai, University of Arkansas, University of Oklahoma, University of Hawaii, Florida State University, and Wright State.
University. The three osteopathic medical schools with departments of geriatrics are Philadelphia College, Ohio University, and Western University. Many other schools have divisions of geriatrics within their family medicine or internal medicine departments. Nationwide, health profession educational institutions are struggling with the daunting task of integrating geriatric training into already overcrowded curricula. Some suggest that systematic integration of geriatric material into existing courses is the only way to assure an interdisciplinary approach to aging concerns. However, Dr. Fulmer argued, ‘‘If you integrate it, you can’t find it. Nobody is accountable.’’ While the debate over an ‘‘embedded’’ or ‘‘separate’’ approach to geriatrics continues, both sides agree that the need for more geriatric content in the curriculum is critical.

**OBSTACLES**

Medicare reimbursement is the single most influential force shaping medical practice today. In 2000, 26.7% of all physician income was derived from Medicare. The current Medicare system, with relatively low reimbursement rates for geriatric care, remains a significant obstacle to recruitment into and retention of physicians in geriatrics. Medicare paperwork discourages practicing physicians from caring for older adults. Medical trainees are choosing more lucrative, procedure-driven specialties rather than the time-consuming, lower-paying field of geriatrics. ‘‘Clinical reimbursement through Medicare is challenging these programs. Research fellows are hard to recruit, and junior research fellows are hard to sustain,’’ stated geriatrics leader Dr. Gregg Warshaw. In addition, because the Medicare payment system is weighted heavily toward medical tests and procedures, crucial services provided by those in fields such as social work, an area well-suited for patient care coordination, counseling, and education, are also not adequately reimbursed. Although the need for interdisciplinary team care for the elderly has been acknowledged, reimbursement for such care is not available through Medicare. The scarcity of geriatric-trained academic leaders creates additional obstacles. Despite the efforts of government agencies and private foundations, lack of infrastructure in academics, curriculum overcrowding, and an inability to give geriatric content priority in the classroom continue to hinder geriatric training. Licensure and board examinations are also slow to incorporate geriatric questions, making some critics question the importance of geriatric content in curricula.

**RECOMMENDATIONS**

Aging experts agree; in the face of the overwhelming demographic imperative, doing nothing is no longer an option. National Institute on Aging (NIA) Director Dr. Richard Hodes said, ‘‘Geriatrics represents the greatest opportunity for improving the quality of care for older persons.’’ Seizing this opportunity is critical. During 2 days of presentations, deliberation, and thought, conference participants prepared the following recommendations regarding two important professional workforce needs: increasing the numbers of researchers in aging and healthcare practitioners in aging.
A. Researchers in Aging

1. Translating research into practice.

Researchers and clinicians must work together more effectively to translate evidence-based knowledge into clinical solutions. They must prioritize key evidence-based advances and work toward increased dissemination. An ongoing discussion between researchers, clinicians, and patients must exist to test theories and implement evidence-based solutions. Research must not only include clinical studies, but should also address the biology of aging and social and behavioral issues.

2. Maintaining research activity despite competing academic demands.

Established and well-funded clinical research faculty must allocate their time between investigation, clinical practice, teaching, and mentoring. They should assist their junior colleagues in negotiating more time for research and be willing to share responsibilities on research projects, including serving as the principal investigator and mentors. Students and fellows alike must be afforded meaningful research opportunities, because research training directly relates to later independent research success. Existing collaborative efforts, such as that between the NIA and the John A. Hartford Foundation in cosponsoring the Beeson Career Development Program, must be sustained and expanded.

3. Attracting and retaining new academic researchers.

The road to becoming an academic researcher is a long one; financial support must exist to encourage this journey, not only for the student, but also for the mentor. Expanding T35 (short-term training grants for health profession students) and K12 (mentored clinical scientist development award) funds and developing new pre-K (research career development awards) and post-K funds to support new academic researchers are the first steps. Awareness of and access to loan forgiveness programs and eligibility for other financial awards must also be increased for junior investigators.

4. Mentoring and supporting new researchers.

Once recruited, new academic researchers must continue to be supported through the process. Models and programs for successful mentoring must be developed and promoted at national conferences or through national publications. Mentors must help to ensure a steady stream of research support for junior investigators until their progress is sufficient to result in independent funding.
B. Healthcare Practitioners in Aging

1. Increasing the number of formally trained clinical practitioners in geriatrics.

Most healthcare providers receive little or no formal education and training in geriatrics. A severe shortage of healthcare faculty capable of teaching geriatrics compounds this lack of health profession education and training. Efforts must be made to address the needs of the aging population by supporting interdisciplinary education and training in geriatric care. Areas in geriatric education and training that should be emphasized include faculty development, increasing the number of geriatric healthcare providers, and integrating geriatric content into health professions curricula to promote access to quality healthcare and services. Content on care of the older adult, as well as discipline-specific and interdisciplinary structured clinical learning experiences focusing on older adults, must occur early in the educational process and should be integrated into the health professions core curricula. The interdisciplinary nature of geriatrics must be clearly demonstrated through example, and health professions students must be challenged to see geriatrics role modeled as a viable career choice.

The healthcare community at large should be informed of the benefits of geriatric education and training in providing quality healthcare to older adults. Geriatric practitioners should take an active role in building partnerships with academia, health professions students, faculty, practitioners not specializing in geriatrics, and community-based healthcare organizations to provide education in the care of the older adult.

Compensation for geriatric practitioners will need to be made comparable to other specialty-care areas. Medicare should consider reimbursement for interdisciplinary team–based care.

2. Developing academic leaders.

Universities must provide incentives to encourage interdisciplinary geriatric education, practice, research, and faculty development. Academia should acknowledge and be encouraged to address tenure and promotion criteria in light of the interdisciplinary nature of geriatrics, including work in interdisciplinary education, practice, research, and mentoring. Communication between deans and geriatric program directors must improve. Successful leadership programs, such as the Health Resources and Services Administration’s Geriatric Academic Career Awards Program and the Hartford Leadership Scholars program coordinated by ADGAP should be expanded. Public recognition and awards should be given to successful academic leaders for their work in interdisciplinary geriatrics.

3. Integrating aging content into health professional training.

Credentialing and licensing boards must include geriatric content on entry and recertification exams. All relevant disciplines (nursing, pharmacy, dentistry, social work, medicine, etc.) must require geriatric content in their core curricula. Geriatric content should be embedded into all
relevant courses, including pediatrics, given the frequency with which grandparents are raising children. Additionally, each health professions training program should have a geriatrics specialist teaching a required class on geriatrics. While national debate on geriatric departments continues, the need for required, clinical geriatric rotations and practicals coordinated by geriatric faculty is becoming widely accepted. When geriatrics is offered as an elective, only 3% of students choose it.

4. Enhance the skills of healthcare practitioners

Healthcare professionals should be afforded the opportunity to participate in discipline-specific and interdisciplinary continuing education offerings to increase their knowledge and skills in caring for the older adult. In addition, a broad coalition of advocates for quality geriatric healthcare should come together to influence national agendas for professional education, licensure, credentialing, quality improvement, performance measurement, and reimbursement. In addition, we must evaluate opportunities to recognize enhanced provider skills in geriatric care for all willing providers.

**SUMMARY**

The healthcare workforce is unprepared for the growing number of older Americans, both current and future. Daniel Perry summed up the conference: “the lack of training in the professions that govern the care and treatment of older people constitutes an immediate and continuing crisis. Now is the time to coalesce our efforts.” Rather than take a “wait and see” approach or, worse, do nothing, leaders prepared recommendations for training the workforce for aging research and healthcare. Demographic mandates and an ever-expanding geriatric knowledge base demand not only our attention, but also action.


**VII. Executive Summary For The HRSA Primary Care Workforce Planning Grant**

Minnesota’s HRSA Primary Care Workforce Development Planning Process, being administered by the Governor’s Workforce Development Council, sought feedback from regional healthcare professionals, educators, administrators, and policymakers throughout the state. More than 750 people participated in 21 meetings. People were asked what developments in primary care were certain to occur, what changes might surprise us, and what strategies were essential to increase the number and efficiency of primary care providers. *No conclusions should be made from this Finding Report—which summarizes opinions of individual speakers.* Recommendations, strategies, and priorities will be developed by the HRSA Primary Care Workforce Grant Steering
Committee. The findings are summarized below and a sample of the input from one meeting can be found in the Addendum below.

THE FINDINGS

Demographics and Workforce Concerns
Discussions always began with the aging workforce and patient population. With too few people to replace future retirees, potential shortages worry everyone. In this economy, education is costly for new high school graduates and dislocated workers. Students are reluctant to take on debt when jobs are difficult to find. The student population is increasingly diverse, no longer wants to work 24/7 shifts or take call, and often requires extra help with math, reading, and soft skills.

Health Care Financing
Health care financing was a top concern of most. The current procedure-based payment system drives up costs since providers and facilities get paid for ordering more tests and procedures. It has helped create the emphasis on specialty care and spurred the endless upward cost spiral.

Health Care Home
To realign incentives, most were hopeful that the new “health care home,” a team-based model of care, would allow mid-levels and allied health care professionals to handle simple health care issues, patient monitoring and health education, and free up providers to utilize the full range of their expertise. However, at present, there is little reimbursement for this model of care.

Health Care Delivery
Consumers will drive new models of care and delivery with their demands for convenient, affordable care. Participants envisioned e-health, minute clinics, plug-in care at home, extended hours, and health care at school and work. Many expressed concern that for-profit services will entice people with quick, convenient, inexpensive—and perhaps—less effective treatment.

Health Care Outcomes
Management of health care outcomes and “accountable care” is expected to result in better care for patients. A primary care team can focus on education and coaching to help patients improve chronic weight, cholesterol, smoking, and stress issues. Providers may be paid a fee to keep a panel of patients well. Many hope this will result in more equitable primary care compensation and reduced health care costs by identifying “best practices,” reducing unnecessary procedures.

Primary Care in Rural Setting
Delivering care in rural settings is challenging on many fronts: finding enough skilled workers, attracting providers to small town life, handling referrals and mental health needs, and keeping up with medical innovations. People travel farther for care and often delay treatment as a result. As retirees move in (and their parents), young people leave to find better jobs. Rural providers must handle a wider range of health issues since there is often a shortage of general surgeons,
obstetricians, psychiatrists, etc. Many rural settings actively incorporate mid-levels and already use technology to deliver care at a distance.

**Innovation**
Innovative technology, treatment breakthroughs, and convenient care will continue to increase providing convenient health care via e-health; clinics at work, the store, or school; and on home computers. The electronic medical record (EMR) will facilitate communications and updated health information permitting more timely, responsive, accurate, and affordable care. A corresponding increase in health information technology (HIT) in every health care facility will require trained workers who can install, use, maintain, and repair software and hardware. New innovation requires investment dollars and employee training with each and every change.

**Long Term Care/Geriatric Health**
Long term care (LTC) will continue to grow in importance to meet the health care needs of our aging population. However, aging staff, new health care regulations preventing high school workers from lifting patients, and an increased number of acute patients discharged from hospitals who are not stable enough to return home all add to LTC staffing challenges. Smaller rural facilities may not survive leaving a significant hole in the community’s care continuum.

**Mental Health**
Primary care providers find themselves caring for an increasing number of mental health issues with little training. Mid-levels, tele-health, and other innovations will be essential to cover such care and co-locate it with primary care to improve health status.

**Health Status**
A recurring theme is redefining the focus of primary care to include health promotion, wellness, preventative care, and improved health status. Core to this function is educating patients to understand their responsibility for personal care, positive choices, and self-motivation.

**Physicians**
As a group, primary care physicians are aging, and there are simply not enough graduates to replace them. Huge debt loads entice graduates into lucrative specialties that do not demand 24/7 shift work or call. For those in practice, reduced patient contact due to increased paperwork results in dissatisfaction. Many hope that the health care home team model may enable them to focus more on quality of care but worry about the added supervisory burden.

**Mid-Levels**
There is hope that mid-level physician assistants (PAs) and nurse practitioners (NPs) will be able to provide a good share of the future primary care. Mid-levels face similar challenges as doctors: large debt, the enticement of specialty care, and lack of interest in 24/7 shift work or call. In addition, they practice under the supervision of a physician although many hope that legislation will expand their scope of practice.
Nurses
Nurses advocate taking an active role in the care team since they can do a myriad of roles including care coordination and are trained to educate patients on health care improvement.

Community Health Workers
Community Health Workers function as patient advocates to help people navigate the health care system and understand how to follow protocols at home. This is an important function for the new health care team approach.

Pharmacists
Pharmacists see themselves as part of the primary care team as they counsel patients about medication uses and interactions, catch potential problems, and communicate with physicians whether based in a community pharmacy or practicing in the physician’s office.

Diversity
As Minnesota’s population becomes increasingly diverse, it becomes important for all involved in health care delivery to develop deeper understanding, tolerance, and appreciation for different health care beliefs, practices, expectations, and experiences. Many expressed the hope that practitioners of all sorts could become increasingly diverse as well.

Health Education
Many training programs are at capacity in this state, largely because of a shortage in clinical training slots. Hands-on training is key to creating effective health care workers and is a challenge for facilities to provide. Finding preceptors, who must work longer days and accept reduced income, are getting harder to find—preceptors simply get too tired to take on new assignments.

Schools also struggle to cope with reduced student readiness (math, reading, English language, and soft skills). Tuition assistance, job placement help, visa sponsorship for foreign-born graduates, and developing training for new job roles are all important issues in health education.

SUMMARY
This feedback (see sample of original data in Addendum below) illuminates the broad array of complexities involved in developing an adequate primary care workforce for the State of Minnesota. There is no simple, singular approach that will ensure Minnesota has the right combination and an adequate number of primary care practitioners to meet future needs of its population, especially with the needs to curtail costs. Envisioning a solution that supports adequate training programs, a payment system that supports teams of experts who work toward improved health status of individuals, families, and communities is an important challenge for the HRSA Primary Care Workforce Grant.
ADDENDUM

Sample of Strategic Input

The input and ideas at each strategic input meeting addressed a wide scope of concerns. The following notes summarize the input given at the Health Education Industry Partnership (HEIP) Council Meeting, December, 2010, one of the 21 meetings for the HRSA Primary Care Workforce Development Planning Grant. Each answer represents the viewpoint of the individual, not of any given organization or of the process.

Three Strategic Questions and Responses

1. What changes/developments in primary care (positive or negative) do we know will occur for certain in the next 10 years?

- Primary care delivered in healthcare homes
- Dentists and pharmacists will offer a component of primary care
- Person-centered rather than system-centered care
- Demand for care will outpace supply: 35 million more folks covered
- Immense mental health needs
- Mental health delivered in primary care/healthcare home settings
- Less face-to-face interaction with patients and doctors
- Tele-health/virtual medicine
- Electronic Health Record (EHR) will be norm
- Genomics will personalize medicine (knowing what meds work best for you)
- Acute and primary care will need more physician assistants (PA's) and nurse practitioners (NPs)
- People we serve will be older and diverse
- Increased demand in rural areas from aging population and retirees relocating
- Geriatric competence will be key across all professions
- Create rural training rotations (like RPAP) for PAs and NPs
- More diverse and aging workforce with different demands and needs
- Major workforce shortage
- There will be new jobs (60% of future healthcare jobs do not yet exist (Human Capital Institute)
- Unemployed nursing grads will have to be re-recruited in nursing later
- Unemployed graduates move out-of-state
Nursing students are moving into nurse practitioner (NPs) programs
More remedial students entering workforce may fragment current job role categories
More part-time providers trying to balance home, family and work
Decreasing nursing faculty
Clinical faculty may have less time for students if pulled into patient care duties
New incentives will be necessary to create more clinical training options
Loss of educational investment in new graduates due to economic/job downturn
Federal and State budget deficit will impact reimbursement

2. What changes/developments in primary care (positive and negative) might catch us by surprise?
New graduates take boards and leave the state
Students may not be academically ready for nursing studies
ESL Students (English as 2nd Language) present an additional challenge to schools
Accreditation changes may challenge colleges and faculty
Create 2-year curriculum for biology graduates to work in hospitals
Increase the pipeline of 9-12th graders interested in healthcare
Target biology graduates with lab classes for lab training
Develop common courses that cross all healthcare areas
Increase use of simulation because shortage of clinical training sites
Competency-based rather than time-based clinical training
Use of Advanced Practical Nurses (APN’s) will increase access
More unlicensed personnel
Consumer demands (especially boomers’) will change healthcare
Team-based care, with physicians will see the most complex cases.
PA’s and NP’s will handle more family practice and day-to-day clinic visits
Use of complementary/alternative medicine is increasing
Caregiver diversity needs to increase
More care in the home and community rather than in the office.
People work longer so there may be no job shortage
Technology professionals needed to maintain high level of hardware & software
Need biomedical technicians to work on records and virtual telemedicine
People are already connecting with doctor’s office through Wii
3. What ideas/strategies/programs/initiatives/training options etc. will help increase the availability of primary care practitioners by 10%+ in the next 10 years?

- Healthier, active people may create less need for care
- People may work longer delaying or erasing workforce shortages
- Technology in home may connect to healthcare (via Wii, etc.)
- Care delivered in home and community electronically
- Need people to maintain new technologies
- Creative budgeting due to deficits
- New nurses may quit if struggle with staffing issues in acute care settings
- Nurses may select primary care settings leaving acute care with nursing shortage
- Adapt innovative approaches to fill pipeline of students interested in healthcare
  
  Note: MN has lowest # of secondary students pursuing healthcare careers
- Tap into retired primary care professional individuals to mentor college and high school students
- Focus on guidance counselors to help students consider all healthcare professions
- Increase student financial assistance with tuition and room and board
- Add child care for adult learners
- Increase on-line options for working students
- Credit for prior learning
- Allied health classes at night/options for evening faculty
- Medical training programs have to choose candidates interested in primary care: need a “peace corps” personality type
  
  Note: MN has 15-20% of med students choosing family practice!
- Need to increase family practice/primary care residency slots
  
  Note: used to have 100 until Regions closed: now 80
- Graduate Medical Education needs change: (facilities choose programs due to funding)
- Family practitioners partner with NPs and PAs
- Healthcare home is already being utilized; continue to grow this model
- Virtual consultants via technology (providers to patients and provider to provider)
- Change title to Comprehensivist instead of Intensivist to elevate primary care
✓ Allowing medical faculty to maintain practice is good for all parties
✓ Create incentives for healthcare professionals involved in education: tax credit, maintaining benefit structure, job share/joint appointments, etc.
✓ Cap malpractice premiums
✓ Focus funding for RPAP to create interest in rural practices and to help sites thrive
✓ MDE & MnSCU innovative approaches may be applied elsewhere (OVAE grant)
✓ Payment models need to change for training and primary care
✓ Education and accreditation take too long for the changes we need
✓ Flexible mindset and action-oriented strategies: look at corporate models of change

VIII. HCMC Summary of Strategic Focus Groups

In the spring of 2011, a series of focus groups were held to elicit strategic thinking of key leadership for HCMC, nursing leaders from several Minnesota nursing programs, and a sampling of patients. The goal was to help set strategic directions and initiatives for HCMC and in particular, HHF. Knowing that health care education is a core component of HCMC’s purpose, questions focused largely on the future of health professional education along with serving the needs of its varied patient population.

Participants included several physicians, nursing leadership from HCMC and around the state, allied health, ambulatory care, and emergency medicine leadership, and a sampling of patients. A list of participants is included in the Addendum. Jane Foote, Executive Director, HealthForce Minnesota, facilitated all but one of the focus groups; Tim Crimmons, M.D. facilitated the additional group.

Section A. Physicians Focus Groups

1. How do you expect health professions education to change in the next 5 to 10 years and why?

- Key piece with technology is that we don’t lose sight of human connections in education to keep educational process exciting, productive and effective.
- More technology isn’t necessarily better—personality and face to face connections are often lost in on-line education
- Key players (teacher and learner or patient and provider) are “end users” and should drive the teaching and learning together.
- Students will encounter patients earlier and in more meaningful ways.
• Interdisciplinary care teams will interact in meaningful ways perhaps through projects or competitions, (not just sitting through lectures together.)
• Education in the health professions will become more intentional and competency learning and learner focused.
• Individual learners will drive the learning delivery and length of time in various settings.
• New metrics will allow for learner competency to be the focus.
• Challenges in the transition period will include adjusting to the potential changes in productivity that the current work/hours based model provides.
• There will be a need for new metrics that focus on competencies of learner and educators.
• Ambulatory training will increase as hospital-based model is not how care will be delivered in the future.
• Primary care training will have an emphasis on geriatric care/managing elder care
• Specialists will continue to teach primary care providers management of specialty problems. This model will expand to primary care providers teaching long term care providers to help manage elders in non-acute settings.
• Postgraduate medical education will change in several ways including an increase in providers and a decrease in specialist training.
• Research and reference information will continue to be augmented by technology
• We will need to retrain the existing workforce with ongoing certification and competency evaluation for providers.
• Patients will continue to be more involved in their care decisions. Providers will not be “doing for” or “doing to” but rather will be providing care with patients.
• Education is moving more towards Interactive Platforms. These include more social, interactive, immediate and more “doing” while learning than in the past.
• Adult learning principles will be essential to all types of learning
• Simulation fits well within this interactive platform. It includes incorporating virtual reality into learning as well as blogs and podcasts on specific topics.
• Conferences will continue to provide a way for human interaction to come together for learning.
• Resident education will also include virtual reality learning
• Meaningful connections with providers will need to be sorted out--totally patient centered care doesn’t excite providers.
• There are additional benefits for getting away from traditional silos. Silos were described by this focus group as care delivery systems. An example was connecting to smaller hospitals and working together to put the patient at the center of care delivery.
• Payment reform will drive changes in care delivery overall. Agencies that are the “next step out” of HCMC were discussed as having an impact on Length of stays (LOS) in the medical center. Psychiatry is an example of an area that impacts LOS due to limited facilities able to accept patient discharges
2. What would be the essential elements of an educational program that would help students learn to think critically and learn clinical reasoning?

- The timing of learning clinical reasoning and clinical judgments would be earlier.
- Regional teaching was suggested as an innovative strategy. Students would learn “heart” as a region and in this region they would get a deep understanding of anatomy, physiology, pathophysiology, diagnosis and treatments of diseases, pharmacology.
- Hearing from patients with disease processes about their disease and the management issues they experience. For example doing a rheumatoid exam on a patient with that diagnosis.
- Deeper discussion of differential diagnosis.
- Creative problem solving in groups and as individuals.
- Faculty will participate in professional development activities to strengthen their teaching skills.
- Expert clinicians will add expertise in education.
- Tele-health and video capacity will be integrated.
- Simulation will tie closely to competency testing.
- The potential to record interactions with patients will be available to evaluate provider patient interactions remotely.
- Regarding facilities: an auditorium is needed that facilitates active learning (not with fixed seating). It was noted that motivation can be rallied in larger groups, and an auditorium facilitates this.
- Evaluation capacity in every care area was suggested.
- Concepts of IDEAL and IMMEDIATE were discussed. There were three levels of programming that were presented including must do, need to do and nice to do.
- Training family members to become participatory in care is an opportunity.
- Existing and emerging technologies will be integrated into care provision.
- In house training would offer advancement as well as competency validation.
- HCMC does many types of training without reimbursement. This will likely need to change at some point.
- A social educational model was proposed which builds upon the strong relationships that HCMC has with diverse populations. There are many patients in the system with strong cultural skills and ideally there will be ways to engage them into training and facilitating them to enter the health care delivery system.
- The ideal program will depend on the needs of the learner. Students have different needs.
- Strong programs are based on Adult learning principles.
- There will be more interactivity, but the degree of interactivity will depend on the comfort levels of the learner.
- Ideal programs will have curriculums that can be tailored to individuals and be competency based.
- There are challenges in residency training because of a historical expectation for a certain length of time in training. Time doesn’t create competency.
• Faculty will have a background in education. This is a new opportunity for health care education.
• Additional competencies in teaching will be recognized as professional development.
• Orientation and ongoing skill competence will involve simulation, including core specific essential skills for providers of care. (Lumbar punctures and codes were mentioned as an example)
• Clinical reasoning comes with experience, it is not learned didactically or by books.
• Online interactive learning may assist with this type of thinking, but this is not absolute.
• Simulation can assist in procedural steps and initial clinical reasoning.
• Having “entire cases” standardized and simulated with actors can be helpful. Debriefing changes frames. Frames drive actions and actions get results. In this way simulation is an active way to improve clinical reasoning.
• Clinical reasoning takes time. Learning evolves into clinical reasoning.
• Teaching reflection is important. The transfer of debriefing to clinical practice setting is important.
• Small group discussions can improve clinical reasoning in practitioners but it is not futuristic.

3. **How will student learn to have conversations with diverse populations of patients?**

• Interactions with diverse populations increases skills.
• Active engagement with populations leads to more meaningful interactions.
• Productively and EHR needs have driven down the time that faculty and student spent together in the presence of patients. A return to more face-to-face engagement is needed and using portable technology to be at the bedside more is a way to accomplish this.
• The concept of “connecting points” was introduced. This centers on the concept of using technology to support learner needs.
• Clinical skills require patient contact. Face to face contact and human caring is important.
• There is a vision of clinical care which is supported by “technology tools” that allow providers to access the high volume of knowledge needed. EPIC is an example of this. On site service for this was suggested.
• Relationships are important and alumni were mentioned as a key strength at HCMC. Having an intentional design for how to connect with alumni and build upon the positives that already exist is ideal.
• Diversity is not learned by lecture. Good teaching can overcome the challenges but how it gets ingrained is by application.
• Relevance is a primary step, and why it matters. For resident interns a primary concern is not to kill people but cultural competence is the “frosting”
4. **Other relevant thoughts that arose in this conversation:**

- Patient choices for Accountable Care Organizations (ACO’s) will drive demand.
- Right now we reimburse for illness and this is not sustainable.
- Pilots need to be underway for preventative care models that are effective.
- Primary care is stressful and this is related to reimbursement for primary care activities.
- Students today want balance in their lives, and they are not choosing areas that appear not to have a desirable lifestyle. Desirable lifestyle is related to hours. Money, and the ability to take breaks and balance their work life with other aspects of their lives.
- Providing learners with decision-making responsibilities that are aligned with their level of practice is a key to learning clinical reasoning.
- Practicing steps and processes that advance thinking without exceeding ability is important.
- The key to critical thinking and clinical reasoning is good teachers and mentors. Thinking “out loud” for students to learn clinical reasoning from expert experiences is important.
- Providing cases and other situational learning so that students can look at the big picture as well as “go down the wrong path” and learn. Simulation was offered as a tool to learn from.

**Question 5: How do you see your program incorporating teaching to help students become part of an interdisciplinary team?**

- Doing “teams well” is important
- By first valuing teams and then establishing teams, learning comes naturally.
- There is a process that happens in creating effective teams that takes time.
- Faculty professionals would benefit from additional reflection skills
- Creating teams with positive attributes and role modeling interdisciplinary care was described as strategy.
- Include team concepts at all levels of the organization so that the staff understand the basics.
- Excellent “silos” of care accomplish much, but can still fail if they don’t recognize the importance of team based care models.
- When the patient is at the center of the care circle the definition of team changes to include far more members and extends into the community further.

**Question 6: How will students learn to have conversations with diverse populations of patients?**

- Role modeling effective conversations with diverse populations is essential.
- HCMC has a breadth and depth that makes learning about diversity easier.
- Physicians need help learning best practices in education.
• Excellent care leads to excellent teaching.
• “We value it here, we do it well, and we teach it well”
• Teaching deep appreciation of the patient is at the heart of having conversations.
• Being open to ask questions and realizing that we can’t solve all the problems is important.
• Being sensitive enough to ask questions, read patients, and remain open and aware.

Other Key points from the discussion

• There are many things that would be nice to improve.
• “Creating a culture change also changes the view of the problem.”
• Everyone has needs to see the “big picture” of the system, regardless of their role
• Human Resources could play a bigger role in selecting employees with key qualities.
• Create strong sense of organizational mission from the beginning
• Foster a sense of connectedness and willingness to “paying it forward”

Note: Dr. Gonzales shared a story of the best education experience he had and what made it that way. It began with a genuine interview in which he felt a determination was made to match him to the organizational mission in a deep and authentic way. From this first interview process he began in a cohort of learner who supported one another and connected to prior and subsequent cohorts in a “pay it forward” type of model of sharing and connectedness. He remembered it was a warm and supportive environment.

Section B. Emergency Medical Services Focus Group

Question 1: How do you expect health professions education to change in the next 5 years, 10 years and why?

• More didactic aspects of the programs will be placed on line for initial learning with learners coming together for application pieces of the program.
• Simulation will be used to validate and refine skills both for health professionals and learners.
• Simulation will need designated space and support, as well as a degree of mobility to reach learners where they are. An example of simulation in an ambulance was provided as an example.
• EMS has a “wish list” of great ideas in the area of simulation that are practical and they would like to be an active part of this discussion.
• More partnerships with colleges and schools that can assist in expansion needs by using sites and expertise collaboratively.
• Industry partners may generate revenue by training community based agencies and even individuals.
• Grant writing or sponsorships could be sought to promote healthy communities by offering first responder CPR skills in community-based settings.

Question 2: What would the essential elements of an educational program be that would help students learn to think critically and learn clinical reasoning?

• A “formula” of online didactic + group discussion+ simulation that is convenient will be essential and become expectations for learners.

Question 3: How do you see your program incorporating teaching to help students become part of an interdisciplinary team?

• In the EMS area disciplines learn together by practicing skills

Question 4: How will students learn to have conversations with diverse populations of patients?

• HCMC has a diverse workforce in many areas, but EMS has an opportunity to improve in becoming a more diverse department.
• Public schools in Minneapolis are a rich source of diverse youth and there are opportunities to recruit and interact with school age youth to encourage them to consider careers in EMS/healthcare/law enforcement areas.
• Individual assessments (IDI personal inventory) are a good place to start to raise personal awareness.

Section C. Ambulatory Care Focus Group

Question 1: How do you expect health profession education to change over the next five to ten years and why?

• MORE. Rapid changes in the health system delivery model create challenges in communicating. For example EPIC required rapid changes and strategic delivery of training.
• Planning for educational needs better is an opportunity. The groups described a training session on diabetes that was successful and resulted in increased knowledge in the clinics.
• People are being hired into the system that have social issues impacting their work. In some cases their communication expectations are not aligned with the expectations of the organization.
• EHR skills are core to everything. Older workers can be resistant to them; it is unclear how best to help them with these needed skills.
• Keyboarding and checking email is a basic skill everyone must have.
• More web-based and on-line meetings and training for in-house staff that allows them to stay at their location and not travel. Should not need to drive downtown for training. The clinics have conference rooms and projectors for local training to be delivered on their sites.

**Question 2: What would the ideal program look like? How would it be different?**

• It would be tailored to workflow so that it lessens the impact training has on productivity.
• Educational offerings would be centrally supported but decentralized in implementation.
• New employee training is not tailored, and being able to tailor education to learner and site needs is an opportunity. Spread out the orientation more so new employees are not so overwhelmed. Professionalism should be included in orientation for all new employees.
• More “hands on” activities. Didactic strings of classes are not ideal.
• More simulation
• Right training at the right time was a suggestion for improved delivery.

**Question 3: What would the clinical component look like? How would it be different from what is in place today?**

• We need to have people working at the “top of their scope” as we seek to deliver more healthcare at less of an expense. For example requiring RNs to do follow up teaching instead of Medical Assistants in the clinics adds expense and prevents RNs from other more complex duties.
• Deliver “Just in time” (JIT) training and have additional EHR trainers available.
• Residents need JIT training to be able to function better in fast paced clinics.
• “Virtual Teams” and teamwork that allows for solving problems. Have folders with information that everyone on a team can access to improve communication and teamwork.
• Regular annual training throughout the year (2 hours per month) to learn new skills and then time to ‘hardwire it”

**Question 4: What are the essential elements of an educational program that would help students learn to think critically and learn clinical reasoning?**

• More hands-on learning and simulation.
• Increased mentorship and precepting in ambulatory areas.
• More competency based learning for increased clinical reasoning.
• Training seminars that span two days, for example triage as a topic for RNs.
• Have core training or core information such as infection control, customer service and falls offered in clinics. Diabetes was also mentioned.
• Have ambulatory educators on site as a resource.
• Five phases were described by this group for changing how we teach critical thinking and reasoning.
• “Pre” phase set up by managers.
• Hospital phase of learning
• Observation/shadow phase
• Central clinical that involves competency testing.
• Mentorship on site (which was described as lacking at this time)
• Circling back to check in and reflect on progress and gaps.

Question 5: How do you see your program incorporating teaching to help students become part of an interdisciplinary team?

• Work needs to be done on role clarification and how various roles intersect. Examples given included RN and MA role and the overlap that happens in clinics for these two levels of care.
• Communication with team members with clear expectations across members is essential.
• Organizational development and leadership could offer team-building exercises.
• They value teams and see them as essential so this needs to be a clear message.
• Hold high expectations for everyone.

Question 6: How will students learn to have conversations with diverse populations of patients?

• Diversity at HCMC is socioeconomically based, not color based.
• There is social and educational disparity within the HCMC workforce that needs to be noted.
• Having cultural acceptance with in the policies
• Diversity work is never done—expect constant evolution.
• Currently only two hours are devoted to diversity training for new hires, is this enough given the culture of the community?
• The recently changed care model has had an impact on ambulatory care. It is Provider/MA centric, not nurse centric
• Eliminate bias and offer more training for providers.

Section D: Department Leads Focus Group

1. What medical initiatives should HCMC champion?

• Aging Issues was noted because of the geriatric fellowship program
• Trauma and Critical Care was noted
• International health and Immigrant health expertise.
• Safety net status

2. Which investments are potential opportunities for HCMC?

• Primary care specialties with physician extender roles (NP/ PA).
• Interpersonal system based practice
• Quality team training
• Simulation center
• Clinical pharmacists could be expanded
• Opportunity to physician leader training
• On site
• Formal mentoring
• Leadership Domains
• Human resources
• Cultural diversity
• Quality management
• Team based training
• Conflict resolution
• New system of senior care
• Electronic health record
• Cost effective care
• Better solutions by necessity
• Leading in the new normal of scarce resources
• Data driven care
• Leveraging content creation.

A brief discussion regarding what sets HCMC apart from the U of MN brought forth the following points.

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<th>University of Minnesota</th>
<th>HCMC</th>
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<tbody>
<tr>
<td>Undergraduate Medical Education and Graduate Medical Education</td>
<td>Graduate Medical Education</td>
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<td>Research and discovery</td>
<td>Clinical practice Share</td>
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“Heart of the City” mission of the organization, responsive to needs. Education for a lifetime.

**Section E: Nursing Leaders Focus Group**

Nursing leaders stated that HCMC is a highly valued, complex container for learning clinical reasoning. It provides “an atmosphere of learning” and “a diversity of patients and clinicians” that are not found at other healthcare institutions. Following are the primary themes reflected in this focus group.

1. How do you expect health professions education to change in the next 5 years, 10 years and why?

   - HCMC will be challenged in providing interdisciplinary teams as nurse practitioners take on increasingly complex patients.
   - Primary care needs to recognize the leadership of nursing at the bedside and in primary care clinics. The medical model is limited because its focus is on illness whereas nursing is focused on both, but primarily health.
   - The DNP provides an opportunity to manage illness and promote health.
   - Evidence based practice needs to be defined and have resources available on the units to explore these issues in real time.
   - Changing conceptualization of faculty roles. Increased faculty collaborations and preparation. HCMC is ripe for this as the staff embraces teaching as a role.
   - Engaging the staff in an active role with faculty.
   - Making room for mistakes that lead to teachable moments without affecting patient care or outcomes. Finding a way to incorporate the learning curve.
   - Curriculum models will change as the generalist model is no longer relevant. There is an opportunity to customize education to match student interest and future practice.
   - Registered nurses of the future will need more education due to the complexity of care. Create clear goals and partner two-year programs with 4 year Universities to facilitate articulation and career pathways.
2. What would an ideal health education program look like? How would it be different from what is in place today?

- Simulation has a significant role in developing confidence and clinical reasoning for both students and faculty. We could create simulation modules for educators to become skilled in helping students reflect clinical practice.
- In situ (i.e. close to care sites) provide standardized care programs/curriculum.
- Simulation could also address cultural competence and diversity.
- The benefits of a center like HCMC are that it offers complexity from chronic illness to managing care in community settings. It has the potential to facilitate health for specific (i.e. diabetics, chronic care) populations. The hospital experience is a slice of a person’s life, but what we need to influence is how they maintain their health within the context of their lives.
- Create cultures of practice that facilitate success for diverse students of color.

3. What would the clinical component of that education look like? How would it be different from what is in place today?

- Designated Education Units (DEUs) could be trialed at HCMC. The beauty of a DEU lies in the collaborative partnership between staff and faculty.
- Potential to pilot DEUs research outcomes in three areas; interdisciplinary pilot potential, increasing staff engagement and role, and to shift the paradigm for faculty and staff. At the same time, such a pilot could define future roles for faculty and staff in nursing student education. Faculty could be freed up to facilitate deep reflection while staff fully engage with students delivery of beside cares.
- A new paradigm is needed for clinical education. Currently there is a very limited definition for what comprises a clinical experience.
- The pendulum of education has shifted from the pure apprenticeship model to one in which nurses have academics and scholarship at the baccalaureate level combined with clinical skills.
- Having adjunct or part time faculty do clinical experiences is a problem. Simulations would increase their skill and confidence as educators.

4. What would be the essential elements of that educational program that would help students learn to think critically and learn clinical reasoning?

- Clinical agencies would identify key issues that need development (i.e. clinical skills, disease management).
- Clinical reasoning happens over time.
• Timely debriefing is important.
• Simulation requires deep reflection.

5. How do you see your program incorporating teaching to help students become part of an interdisciplinary team?

• We teach the importance of the interdisciplinary approach but haven’t had the chance to apply it.
• Interdisciplinary engagement in teams is important in providing quality care.
• Less of a medical model is anticipated for the future. There will need to be undergraduate and graduate levels within interdisciplinary teams.
• Logistical barriers exist in getting disciplines together. Perhaps an on-line format could assist in this area. The University of MN has an ethics pilot underway.
• Inter-professional simulations hold great promise for studying cases collaboratively.
• Faculty are content versus process driven is a challenge. The relationships that are developed in interdisciplinary work can facilitate better understanding of diversity and promote collegiality. Process teaches collegiality.

6. How will students learn to have conversations with diverse populations of patients?

• More diverse faculty are needed.
• It is challenging to find and retain diverse faculty.
• Associate degree programs have high levels of diverse students.
• Building relationships between two and four year students has three great potentials. First, two-year students would be encouraged to continue their education to obtain a BSN/MSN. Second, four-year students would be exposed to the rich diversity in their two-year colleagues. Third, two-year students would improve communications.

Section F. Patient Advisor Focus Group

Two patients took time to share their personal stories. One patient was of childbearing/childrearing age who had extensive experiences in OB, neonatal and pediatrics services. The other was a retired RN patient with oncology, cardiac and alternative medicine service patient experiences to share. Both patients share very moving stories about their care at HCMC. Both patients shared that they come here because HCMC saved their lives. The following themes emerged between these two patient stories as essential to their health and healing during very stressful times in their lives. Staff across services and at all levels were described as very caring.

1. What personality traits of caregivers are important?
- Knowledge of clinical care. This was noted to be exceptional, patients were confident that the knowledge of the providers was “state of the art”
- Patients reported validating this was true by reading and talking to others
- Emergency room care at HCMC was noted to be exceptional.
- The “human element” is exceptional and this helped the patients during traumatic times.
- Important that patients not feel rushed or pressured to make a decision
- Important that all their questions were answered
- A balanced amount of information is important and was provided (not too much and not too little)
- Staff were able to read the “non verbal” cues and respond to them.
- People are in crisis when they are here and they need to feel supported
- Personal relationships are important.
- Nurses can incorporate and reinforce the care needed from a range of health care disciplines.
- The importance of nutrition needed to heal was an example cited.
- Patients need resources to make decisions and change their behaviors and lifestyles.
- The patients appreciate honestly in receiving their diagnosis and discussing treatments
- Candidness, “direct” and blunt communications were differentiated.
- Patients preferred candid and direct communication, as this was described as more “artful” and allowed for more flexibility.
- “Blunt” communication was described as “blurting out” the information and this was not appreciated.
- Overall the positives outweigh the negative with how staff communicates to them.
- The impact of HCMC being perceived as a “County Hospital” was discussed.
- Providers may feel elevated because of the population they are serving, but this group shared that hierarchal relationships are not healing.
- Stereotypes are not helpful and can lead to paternalism.
- Patient centered care addresses paternalism.
- Role models need to model the desired care delivery skills.

2. How do you feel being involved in a teaching role regarding patient centered care. Their ideas included:

- Using their expertise to teach by writing down their experiences and talking to others at a peer level.
- Both patients were comfortable with speaking to groups.
- They have information to share on what it is like “to be sick”
- Humanistic connections are essential in feeling cared for and in healing.
- Experiences are remembered for a long time
- Making and breaking a person’s spirit is within the care provider’s control in many ways.
- Caring is essential.
- Patients don’t get diagnosed, families do.
• Allowing people to have control as much as possible important.

Addendum: Participants

HCMC Staff and Faculty Participants

Michael Belzer, MD
Terri Bratt
Tim Crimmins, MD
Emily Fuerste
Art Gonzalez, MD
Danielle Hart, MD
Mike Harristhal
Ky Iver
Don Jacobs, MD
Jennifer Kelly
Larry Kerzner
Kevin Larson
Louis Ling, MD
Charlie Moen
Mary Peterson
Jeanne Ripley
Christine Stenson
Jeff Stillman, MD
Thomas Stillman, MD
Joan VanCamp
Megan Walsh

Twin Cities Nursing Leadership

Bonnie Watts, Minneapolis Community and Technical College
Marcia Stevens, Minnesota State University Mankato
Patricia Young, Minnesota State University Mankato
Margaret Kotek, North Hennepin Community College
Patricia Gonzales, Normandale Community College
Margaret Dexhiemer Pharris, St. Catherine’s University
Sandra Edwardson, University of Minnesota
Kathy Krishbaum, University of Minnesota
Mary Rowan, University of Minnesota
## IX. Employment Projections for Health Care Professionals in Minnesota

State Health Care Jobs Projections 2009-2019

### Employment Projections for Select Health Care Occupations in Minnesota, 2009 to 2019

<table>
<thead>
<tr>
<th>Title</th>
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<th>Replacement Openings</th>
<th>Total Openings</th>
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Medical Records and Health Information Technicians  21.6  799  750  1,549

Source: MN Department of Employment and Economic Development, Labor Market Information Office

Twin Cities Health Care Jobs Projections 2009-2019

Employment Projections for Select Health Care Occupations in the Twin Cities, 2009 to 2019

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Technicians

Source: MN Department of Employment and Economic Development, Labor Market Information Office