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Rural Health Care: New Delivery Model Recommendations

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Rural Health Advisory Committee
Work Group on a New Rural Health Care Delivery Model
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Executive Summary

This report captures the discussion and recommendations of the New Rural Health Care Delivery Model Work Group, which was formed to examine the influence health reform legislation may have on rural health delivery, and to consider specific improvements that could be made to the system to better meet the needs of rural consumers and providers. The work group studied and discussed the concept and implementation of health care homes as they pertain to rural Minnesota as well as other models and components of health care delivery.

There are unique challenges to delivering health care in rural areas, and they include provider shortages, isolation, long travel distances, scarcity of specialty care, under-resourced infrastructure, and a predominately older population with multiple chronic conditions. However, out of necessity, rural areas also make it possible for smaller hospitals and clinics to be more innovative in overcoming the challenges of providing comprehensive and coordinated health care to residents. The absence of large, complex health care organizations fosters a prime environment for inventiveness. Both a pressing need and an opportunity for health care delivery innovation exists in rural Minnesota.

Recommendations

Recommendations have been placed in two categories: those pertaining to health care homes in rural Minnesota, and those relating to rural health care delivery coordination and systems integration.

One overarching recommendation:

Require rural impact assessments and statements on all components of health care reform. Rural patients and rural health care providers should be actively recruited for inclusion in all community assessments and implementation work groups established during health reform implementation process.

Recommendations Regarding Health Care Homes in Rural Minnesota

The infrastructure of the health care home concept as it applies to the delivery of primary care will only be successful statewide if implementation is inclusive of the perspectives on health and health care delivery from both rural and urban communities. Success in transforming health care delivery in Minnesota will depend on the following recommendations to support rural health care systems as they adopt the health care home concept.

- Pursue rural primary care workforce development strategies simultaneously with health care homes development.
- Establish multiple options for health care home certification.
- Broaden providers' perspective of the health care home through education and leadership development.
- Provide for community self-assessments for health care home readiness.
- Enable equitable participation from small, rural and independent health care providers.
- Provide health care home startup funding for small, rural providers.

Recommendations for Rural Health Care Delivery Coordination and Systems Integration Across the Continuum

The following recommendations target health professional training, technology, local and regional planning and provider payment to encourage system integration that will improve care coordination across the continuum while presenting opportunities for making health care delivery more viable and sustainable for rural providers and patients alike.

- Encourage communication improvements across a variety of sectors.
- Establish and encourage financial collaborations for meeting technology needs.
- Build upon regional networks, cooperatives, and collaborations for sharing resources.
- Provide planning and financial assistance for innovative approaches focused on key, high-need issues.
- Make payment reform a priority.

A comprehensive redesign of the health care delivery system will mean a new way of providing and experiencing health care services in Minnesota. It is important that the recommendations and issues identified in this report are carefully considered for successful changes in future health care delivery models and in health care reform initiatives. This work provides a step toward envisioning what a new model of health care delivery may look like.

The recommendations lead to notable progress in stabilizing and improving rural health care systems. They also position rural health providers to make the contributions needed to successfully meet health reform goals and provide citizens with the health care improvements they expect and need.

Introduction

In 2007, the Minnesota Office of Rural Health and Primary Care (ORHPC) published *Health Care Reform – Addressing the Needs of Rural Minnesotans.* The report analyzed the rural implications of statewide health reform proposals being considered by the Governor's Transformation Taskforce and the Legislative Commission on Health Care Access. The report included recommendations for ensuring that policy proposals are relevant to rural Minnesota. One recommendation was to improve the quality and safety of health care by "design[ing] and support[ing] a rural health care delivery model (e.g., health care home) in which chronic and acute care is seamless" (Minnesota Department of Health, 2007).

The Rural Health Advisory Committee (RHAC) is a statewide forum for rural health interests. The committee, appointed by the Governor, is composed of 15 members representing licensed health care professionals, higher education, legislative officials and consumers. The RHAC advises the commissioner of health and leaders in other state agencies on rural health issues. After examining health care access and delivery trends (including potential changes due to proposed health reform), the RHAC determined a thoughtful discussion around a new model for rural health care delivery was needed.

The New Rural Health Care Delivery Model Work Group was formed to examine the influence health reform legislation may have on rural health delivery, and how rural providers and consumers may directly benefit from improvements to the current health care system. The group consisted of RHAC members and additional stakeholders of the rural health care delivery system. The charge of the work group was to examine primary care and other essential health services in rural Minnesota and to identify the challenges and benefits associated with primary care becoming the foundation for a new health care delivery model. This report documents the efforts of the work group, leading to policy recommendations supportive of establishing primary care, integrated health systems and interdisciplinary teams as a new model of rural health care delivery.

Rural Health Care Delivery

What is Rural?

A slower pace of life, a sense of community, and a closer connection to nature and tradition are characteristics commonly associated with rural areas. For researchers studying rural policy, rural is defined more formally as an area within a particular geographical, political or economic unit. However, there is no single, universally accepted definition or method for identifying rural from non-rural areas, and often research analysis is limited to the geographical or political unit collected. Multiple definitions are used to identify rural areas, which can present various implications for health policy. In this report, references to "rural Minnesota" will refer to the 80 counties outside the seven-county Twin Cities metropolitan area.

Health Reform Movement

Nationwide, 90 million Americans live with at least one chronic illness and seven out of 10 Americans die from chronic disease (Wennberg, 2008). On a typical day, an estimated 70 Minnesotans die from chronic disease (Minnesota Department of Health, 2007). Research shows that early prevention and better disease management are effective in reducing hospitalizations, emergency room use and death from chronic disease. Specifically, the health promoting influence of primary care is regarded as the basis for prevention of early illness leading to healthier outcomes. Studies indicate improvement of health outcomes is contingent on the common characteristics associated with primary care, whether it is having a supply of physicians or a usual place to go for medical care, such as a "health care home" (Starfield, B. 2005).

Given evidence of primary care being beneficial to health, a recurring topic in health reform discussions occurring in 2007 and 2008 focused on making primary care the center of continuous, coordinated, comprehensive health care delivery, leading to what is being described as a "new health care delivery model." The rationale for redesigning the health care delivery system is not only about improving heath outcomes, it also is being offered as a solution for improving quality and bringing rising health care costs under control. The Governor's Health Care Transformation Task Force, created in 2007, set out to design a "blueprint" for comprehensive health reform for Minnesota in 2008 and beyond. In addition to the Governor's Task Force, the Legislative Commission on Health Care Access initiated a separate set of recommendations in 2008 also reforming Minnesota's health care system. Many of the recommendations from both proposals were modified, incorporated and signed into what is now entitled the 2008 Health Care Reform Act. Legislative intent for the 2008 Health Reform Act is a comprehensive redesign of Minnesota's health care system, placing a greater emphasis on prevention, improving access, establishing quality improvement measurement, restructuring provider payments, expanding greater use of technology to coordinate care, and reducing costs.

Why a New Health Care Delivery Model?

The New Rural Health Care Delivery Model Work Group was formed to examine the influence health reform legislation may have on rural health delivery, and to consider specific improvements that could be made to the system to better meet the needs of rural consumers and providers. There are unique challenges to delivering health care in rural areas, and they include provider shortages, isolation, long travel distances, scarcity of specialty care, under-resourced infrastructure, and a predominately older population with multiple chronic conditions. However, out of necessity, rural areas also make it possible for smaller hospitals and clinics to be more innovative in overcoming the challenges of providing comprehensive and coordinated health care to residents. The absence of large, complex health care organizations fosters a prime environment for

inventiveness. Both a pressing need and an opportunity for health care delivery innovation exists in rural Minnesota.

Better quality, lower cost and greater equity to health care services are most often cited as the rationale for designing a new health care model. Research has shown that health care in the United States is in need of improvement for the following reasons:

- It is highly fragmented and episodic.
- There is an over-reliance on specialized medical care.
- Care is often excessive and inefficient.
- The payment system creates incentives for procedures rather than wellness and prevention.

In 2005, the Institute of Medicine (IOM) called for fundamental reform of the U.S. health care system in its *Quality Chasm* series with recommendations for the alignment of incentives, integration of technology, and coordination of care and redesign of health care systems. The goal of these recommendations is to of make health systems safe, effective, patient-centered, timely, efficient and equitable (IOM, 2005). One report in the series (*Quality Through Collaboration – The Future of Rural Health*) drew attention to the fact that most quality improvement initiatives are designed with urban systems in mind, and that it would be necessary to determine the "rural relevance" of any quality improvement plan given the unique characteristics of rural settings (IOM, 2005).

Designing a new heath care delivery system was given legislative priority in 2008 largely because the escalating cost of health care continues to rank as a top concern for employers and consumers in Minnesota. Commitment to community is often strong in rural areas, often times leading to practical solutions to complex problems. Statewide policy initiatives to improve quality and access to Minnesota's health care system while lowering costs should be attentive to the unique aspects of rural health care delivery and the innovative nature of rural communities.

Health Care Home: One New Model of Patient Care

The health care or medical home concept emerged over time as an understanding that primary care could be and should be delivered in a new way. In its report, *Primary Care: America's Health in a New Era* (1996), The Institute of Medicine recommended a new definition of primary care as "the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family community."

In Minnesota, the health care home concept is being proposed as a solution for better management of the population's growing health care needs and will focus initially on patients "who have or who are at risk of developing chronic health conditions" (S.F. No. 3780, Article 2, Sec. 1 [256B.0751] Health Care Homes). In fact, Minnesota was among 27 states in the past year proposing health reform legislation that included some form of the health care home concept, ranging from simply using the term "medical home" to creating health care home demonstration projects or systems of care.

The "medical home" concept first emerged in 1967 as a health care model for children. Health care professionals recognized that children with special needs could benefit from having their health care coordinated with their needed social services. The American Academy of Pediatrics, along with the American Academy of Family Physicians, American College of Physicians, and American Osteopathic Association later expanded the concept to include adults with chronic conditions by developing a set of joint principles to characterize the medical home concept. The principles are*:*

- Physician directed medical practice
- Personal doctor for every patient
- Comprehensive
- Coordinated and family-centered
- Accessible, continuous and high quality
- Compassionate and culturally effective and
- A payment system recognizing the added value for patients.

National efforts to enhance the quality of primary care and make it more patient-centered and cost-efficient are using the organizing principles of medical homes to address the nation's growing needs of the chronically ill. The National Committee for Quality Assurance (NCQA) has established a voluntary certification program for physicians and other health providers applying the joint principles to their practices. As part of health reform, many states, including Minnesota, are looking to the NCQA criteria as guidance for certifying health care providers. Medical home demonstration programs are up and running, such as TransforMED, which is a national pilot project testing the principles of medical homes in family-medicine practices across the country.

Although Minnesota's primary care providers have incorporated elements of the medical home model into practice, medical home formalization began in Minnesota in the mid-1990s with a partnership among the Minnesota Department of Health's (MDH) Minnesota Children with Special Health Care Needs, the Minnesota Department of Human Services, the American Academy of Pediatrics, and Family Voices. In 2004, the first Medical Home Learning Collaboratives began to support individual clinicians and the clinic systems they work with to meet the needs of all individuals with chronic, complex health conditions or disabilities.

These community-based care model collaboratives ask the primary care provider *– a pediatrician, family physician, nurse practitioner and/or physician assistant –* to become an active co-manager with the specialists involved in the child's care. The collaborative teams generally include a primary care provider, a staff person who can act as a care coordinator, and two parents or youth with special health care needs. There are currently 25 active collaborative practice improvement teams in Minnesota; more than one third of them are located in rural areas.

Most of these rural teams have been in existence for five or fewer years. All of the teams have made improvements in coordinating care not only within their system but through interactions with public health, school nurses, therapists, other

specialists, social service and advocacy organizations. Examples of improvements include: fewer emergency room visits, fewer missed school and work days, and improved preventive care. Family involvement in developing quality improvement strategies has been crucial to the successful outcomes teams across the state have been able to achieve.

The Centers for Medicare and Medicaid Services (CMS) are also joining the trend. They recently announced plans to implement a medical home demonstration program in 2009, which will operate for three years in rural, urban and underserved areas in up to eight states (Iglehart, 2008). Numerous states have already created medical homes for their Medicaid enrollees. Among the 42 million Medicaid beneficiaries nationwide, 6.5 million are enrolled in a primary-care case management program, where the primary care provider receives a small per-patient monthly fee for care coordination (Spencer, 2008). Some states are going an additional step and tying Medicaid payments to improvements made in patient care through the use of electronic health records and e-prescribing, medication management, and referral tracking. The national momentum for the medical home concept continues to increase and now it has become a centerpiece for health care system improvement. Whether medical homes will be as successful as anticipated is still being debated.

Health Care Home and Rural Health Care Delivery

The success of the health care home concept in Minnesota will depend on many factors. With the exception of a successful pediatric model, evidence is still being gathered as to whether health care homes will achieve the same success when the model includes the adult patient population.

Many questions remain and merit serious consideration: How will health care homes be defined? Will smaller health care providers be able to meet the criteria? What needs to be changed to implement the model? How will stakeholders be obliged to ensure success? Will the proposed payment incentives be worth the investment?

Despite the concerns about the health care home model, there are some obvious advantages in rural communities increasing the odds of its success statewide.

Features of Rural Communities Supporting Health Care Homes Success

- **Rural physicians are trained and experienced in family practice.** There is a strong primary care infrastructure in rural communities and primary care is the foundation of the health care home model. In rural areas, 78 percent of all physicians are primary care physicians; 45 percent of physicians in metropolitan areas practice primary care (MDH, 2008).

  Twenty-seven percent of physicians in rural Minnesota report more than 25 years of experience; 66 percent of physicians providing pediatric services in rural Minnesota counties are family medicine specialists (MDH, 2007). Practicing primary care physicians in rural areas are the frontline of the health care delivery system in rural Minnesota since they are likely to be the first to see and treat a wide range of patients. More importantly, health care in rural areas is likely to be characterized by less choice and competition, frequently compelling primary care physicians to provide a wider array of services in order to accommodate the needs of the community (IOM, 2005).

- **Rural communities are concentrated. Patients are less scattered among multiple delivery systems.** Generally there are fewer health care organizations and health professionals of all kinds in rural communities. Consequently, patients do not have to navigate a complicated set of independent health care systems like those found in more densely populated areas. Rural health systems have the agility to pilot new concepts when building upon existing health care services for their patients. For example, in Staples, Minnesota, the Lakewood Health System has already developed a working health care home model. This rural health system is applying many of the principles of the health care home to their chronically ill patient population. This includes provider-supervised patient care; individual care plans with follow-up; electronic health records; medication management; and care coordination with home care, pharmacy, physical therapy

and other health-related therapies. They put the health care home concept into action due to their commitment to more proactive medical care for their patients, while being adaptable to employing new methods of health care delivery.

- **Rural health care delivery often includes established teams of care providers.** Interdependence among practicing health care providers often exists out of necessity given the limited resources and fewer health care professionals within a rural area. Frequently, primary care providers in rural areas have formed well-established networks with hospitals, clinics, nursing homes, pharmacies and emergency services to share resources and expertise. It is not uncommon in greater Minnesota to find health providers working together to regionalize health care delivery to ensure access and improve the quality of care across multiple rural communities.

  The regionalization of health care services is a vital component of access to health care and is supported by the Medicare Rural Hospital Flexibility Program (Flex Program). Minnesota's Flex Program supports regional approaches to providing health care, and encourages networking among the primary and safety net providers. The creation of regional centers, where health care home provider teams are able to learn from one another and collaborate may also be a way of bridging the geographic distances that exist. Area Health Education Centers (AHECs), established in four regions of the state, also address the health professional workforce needs of Greater Minnesota in partnership with academic institutions, health care agencies and communities.

- **Many rural communities are involved and engaged in health care access and delivery.** Rural residents are committed to their communities and are often actively engaged through local businesses, churches and schools in the improvement of living conditions for the whole community. Health professionals in smaller, rural communities are often public figures frequently serving on city councils, planning commissions and advisory committees. Rural providers also know their patients as neighbors and familiar members of the community. These rural cultural norms contribute to a level of community engagement that leads to a

shared interest in accomplishing what is not easy to come by given the existing challenges in rural settings.

Challenges of Rural Health Care Delivery Affecting Health Care Homes

Paradoxically, the advantages of rural health care systems may also present unique challenges to implementation of health care homes statewide. These challenges vary as does every rural community, but upon examination and combined, they include four major categories: workforce, care coordination, technology and reimbursement. Successful health care home implementation will, in part, depend on how these rural challenges are addressed.

- **Workforce**. An important feature of 2008 Health Care Reform legislation involves health care homes and assigning patients a primary care provider, defined as a "primary care physician, advanced practice nurse or physician assistant," trained to provide first contact, continuous, comprehensive and coordinated care. One of the greatest concerns in smaller, rural communities is the declining number of health care providers practicing in rural areas. Providers' age and geographic location are two important factors contributing to the primary health care workforce challenges. A large share of the primary health care workforce is near retirement, and the health care workforce is disproportionately located in urban areas.

    - The median age of a rural physician is 48 years.
    - Thirty-seven percent of Minnesota's rural population lives in a Health Professional Shortage Area (HPSA) or a Medically Underserved Area (MUA). Parts of 30 Minnesota counties – mostly in the western and northern parts of the state – are designated as HPSAs.
    - Rural counties, with 13 percent of the state's population, account for only 8 percent of primary care physicians and 2 percent of specialists. The primary care physician-to-population ratio in rural counties is 74 per 100,000 versus 131 per 100,000 in metropolitan counties (Minnesota Department of Health, 2007).
    - Approximately 10 percent (or 195) of nurse practitioners work in rural counties, while 78 percent (or 3,040) of nurse practitioners work in metropolitan area counties.

- Urban areas, with 72 percent of the state's population, account for 81 percent of primary care providers and 75 percent of the physician assistants (Minnesota Department of Health, 2005-2008).

The health workforce shortages in rural Minnesota are being felt in all health care sectors, including pharmacy and dental. Nursing homes and emergency medical services in rural Minnesota are especially vulnerable given the growing chronic health care needs of a population that is aging.

In May 2008, as part of its health reform efforts, the Minnesota Legislature passed legislation requiring that "the Commissioner of Health in consultation with the health licensing boards and professional associations, shall study changes necessary in health professional licensure and regulation to ensure full utilization of advanced practice registered nurses, physician assistants, and other licensed health care professionals in the health care home and primary care delivery system" (SF3780, Article 2, section 50). In September 2008, the Commissioner of Health convened a Health Workforce Shortage Study Work Group including representatives of Minnesota's physician, advanced practice registered nurse, physician assistant and pharmacist professional associations[1] and the related licensing boards – Medical Practice, Nursing and Pharmacy – to gather input on the health care home and primary care delivery system. The Health Workforce Shortage Study Work Group will complete its work and their report and recommendations will be submitted to the Commissioner of Health in early 2009.

- **Care Coordination**. The delivery of health care services involves many disciplines, (e.g., clinicians, nurses, specialists and emergency medical technicians), and organizations (e.g., clinics, hospitals, nursing homes and local public health) making it important to pursue a coordinated approach. Care coordination can be challenging for rural communities with many small, independent providers, scarce resources, and health care services that must cover vast geographical areas. Care coordination requires subspecialty consultation, referrals, and knowledge of where such services can be obtained. It can be

[1] Minnesota Medical Association, Minnesota Academy of Family Physicians, Minnesota Nurses Association and Minnesota Pharmacists Association

especially burdensome to find access to specialty health services such as obstetrics, mental health or chemotherapy and sometimes there can be barriers for primary care providers and specialists to communicate.

- **Technology**. Rural health care is undergoing a dramatic transformation in the way patient care is being delivered and how future generations of health care professionals are being educated due in part to technology. Electronic health records (EHRs) and telehealth services are being used more frequently, bridging the geographical distances that can interfere with access to health care. However, the rural health care infrastructure is under- resourced and not all rural health providers have the financial capacity to fully implement EHRs or exchange information electronically. It is estimated that 68 percent of Minnesota's primary care clinics have EHRs (Stratis Health, 2007). However, among those clinics reporting full or partial implementation, only 48 percent were from rural areas (Stratis Health, 2007). According to the Minnesota Hospital Association, 15 percent of hospitals statewide report full implementation of EHRs, while 49 percent of hospitals have partial implementation.

  Investment in health information technology is beyond the reach of many rural health care providers. The lack of reimbursement for telemedicine services also hampers broad rural acceptance and utilization of this technology. A survey of providers in 2007 revealed cost as the top reason preventing implementation of telehealth services. Improvements in technology constantly evolve, making existing technology infrastructure quickly obsolete. Independent rural providers (those not a part of a hospital system) are especially reluctant to make the initial financial investment in necessary equipment. A shortage of technical workforce to support and maintain equipment adds to the challenge of being early adopters of new technology. Additionally, the lack of coordination and communication across information systems is the biggest challenge for small providers. Broadband networks have not yet reached some of the more remote locations in rural Minnesota preventing some residents of small towns from being directly engaged in their own health care, an important feature of the health care home.

- **Reimbursement**. The issue of payment is pivotal to whether the concept of health care homes will be accepted among providers and payers. Current payment policies do not adequately reimburse for many activities essential to primary care delivery. This provides little incentive for providers to offer care coordination services. Instead, the existing payment system, both private and government, pays for health care services on an episodic, visit-related basis, having the perverse effect of rewarding volume over prevention and collaboration. Primary care physicians spend approximately 20 percent of their time in unreimbursed coordination of care tasks (Farber, 2007).

  Small providers located in sparsely populated areas typically have lower patient volumes and fragile financial margins. Rural health systems are more dependent than urban systems on public payment programs, such as Medicaid and Medicare, and concern about the equity of rural physician payments persists. Outside influences, like reductions in provider payments due to worsening federal and state budgets, have heavily impacted rural health care systems. Rural health systems are likely to require more financial stability to make the necessary investment to meet the criteria of a health care home and offset the potential reduction in utilization of health services.

  Current health care home models intend to bring savings through improved disease management and lower utilization rates. However, some unintended consequences may arise if current payment inequities are ignored. For example, Critical Access Hospitals (CAHs) provide essential inpatient services and contribute to the economic livelihood of small, rural communities. Heightened primary care access and reimbursement for health care homes may adversely affect CAH inpatient admissions and in doing so decrease revenues. Additionally primary care providers have little leverage to persuade specialists to change their practices in keeping with the health care home program, and it can be anticipated that the response of these providers will be to increase volume or intensity of services for other patients to maintain current income levels (Fisher, 2008). As the health care home model criteria are being established, the underlying

determinants of our current health care spending will also have to be recognized and explicitly addressed.

Care Integration Across the Continuum: Patient-Centered Connections, Communication and System-Level Coordination

The continuum of care includes all stages of personal health care – from the most basic to the more complex. One model, highlighted by the RUPRI Center for Rural Policy Analysis, includes seven stages:

- Personal Behavior
- Emergency and Primary Care
- Routine Specialty Care
- Inpatient Care
- Rehabilitative Services
- Long Term Care
- Palliative Care.

Although there may be some logical linear progression from one stage in the continuum to the next, people actually enter the continuum at different stages, and often move back and forth between stages. This care continuum model, as applied to rural residents, establishes the importance of focusing on the patient and their location (Mueller, 2003). Included in the IOM's aims of patient-centered and effective care is that care is customized and based on continuous healing relationships. It is therefore argued the continuum incorporate multiple dimensions of health care, including mental, physical, social, oral and spiritual health. Not all needed health care services may be available locally for rural residents, but the ability to seamlessly move from one stage in the continuum to another is an important factor in quality care (Mueller, 2003).

Frequently, the challenges facing rural health delivery systems provide opportunities for patient-centered connections, communication and integration to occur among traditional health care organizations and beyond. Common connections often occur within and across the following health care arenas:

- Personal outpatient health services (e.g., clinics, mental health, pharmacy, dental, specialty care)
- Acute and post-acute care (e.g., inpatient, skilled nursing facilities, home care) and

- Public and community resources (e.g., local public health services, transportation, schools, community education, churches, business).

Rural hospitals, whether they are independent or part of a larger health system, often assume a coordinating role in developing accessible, integrated community-based care (Casey, 2004). Their ability to collaborate with community organizations, assess and prioritize local health care needs, and develop health programs to address community needs is imperative to successfully addressing the IOM's rural quality strategies (Gregg, 2008).

Connections within each arena are well developed, while integration across the three arenas continues to be a work in progress. For example, work group members discussed how providers and patients in the acute and post-acute care system are often unaware of the availability of public community services, such as local public health or community education. As a result, primary care does not work collaboratively with the full spectrum of health care services to achieve favorable outcomes. There is a need for any new system of health care delivery to not only recognize and support existing connections contributing to community-wide health improvement, but also to promote a favorable environment for establishing new forms of integration in rural environments.

Rural hospitals, primary care clinics, nursing homes and other community-based organizations have long exercised that ability to work with the challenges of providing health care in rural areas by creating connections with other providers in the community. Though there are several challenges to ensuring access to quality health care in rural areas, rural health facilities and systems tend to be less complex than their urban counterparts. Consequently, this may provide rural health providers an advantage in creating and adapting to systemic changes in addressing patient access, safety and quality of care.

Examples of Alternative Models of Health Care Delivery in Rural Minnesota

- Sanford-Canby Health System exemplifies a connection of acute and post-acute care by providing telehome monitoring for local patients in need of chronic care management. The collaboration involves home care nurses and pharmacists monitoring patients and checking-in with primary care doctors. Health information technology holds much promise for keeping patients connected to their health care providers, allowing them to continue to live independently and prevent additional hospitalizations. The primary barrier to fully utilizing technology in rural areas is inadequate reimbursement to cover all costs, including time spent filling out documentation for third party payers. These technologies will get more expensive if the reporting is very time consuming. In the past, some managed care companies have required frequent, ongoing and repetitive documentation making an entire program cumbersome and expensive.
- An example of integration involving acute/post-acute care and public and community resources is the Todd-Wadena Healthy Connections (Healthy Connections) collaborative formed by the Lakewood Health System. Healthy Connections was established in 1993 as a health coalition made up of public and private health agencies serving the communities of Todd and Wadena counties. It involves three hospitals, several clinics, senior care centers and two public health organizations. Their mission is to provide a communication and collaboration forum to improve the health of the community. This collaboration defies the usual expectations of autonomous, competing systems, coming together to create unified messages around public health awareness and sharing limited resources, such as immunization outreach, maternal and child health education, and translation services, to expand access to essential health care services.
- St. Elizabeth's Hospital in Wabasha connected acute/post acute care and personal outpatient services by filling a gap in a community's need for mental health services with a full-time psychiatrist on location. Mental health services can now be coordinated with the hospital's clinical services resulting in better management of patients' physical and mental health needs. As a critical access hospital (CAH), St. Elizabeth's is actively involved in assessing, prioritizing and marshalling the necessary resources to address local community health needs.

Rural nonprofit hospitals, especially CAHs, tend to be successful in their ability to collaborate with community organizations, assess and prioritize local health needs, and develop and implement health programs to improve community health (Gregg, 2008). However, the capability of all rural hospitals to be oriented and responsive to community needs is likely to be influenced by the mix of providers and available resources within the community. St. Elizabeth's ability to employ a psychiatrist is an exception rather than the rule for all rural hospitals. Smaller, more remote facilities are hard-pressed to meet basic health needs and typically not likely to have the resources for mental health services (Gregg, 2008).

Healthy rural communities depend on strong integrated systems that include the provision of health care services through family practice clinics, local hospitals, ambulance services, skilled nursing facilities, hospice and home care services and local public health services. Health care systems contribute to a rural community not only through direct care services but also by providing a significant economic base. Health care services in some communities are one of the largest employers, providing jobs and health insurance (Minnesota Department of Health 2008).

It is important to not overlook the alternative connections that exist in the rural health care delivery system. Efforts should be made to identify these existing connections, while being aware that new models of health care integration may need to be encouraged in some of our smallest, rural communities.

Recommendations

Recommendations have been placed in two categories: those pertaining to health care homes in rural Minnesota, and those relating to rural health care delivery coordination and systems integration. One overarching recommendation is to ***require rural impact assessments and statements on all components of health care reform.***

Under Minnesota's Health Reform Act of 2008, an assessment of the "readiness of the primary care delivery system to implement health care homes for targeted populations with chronic or complex condition, [along with] consumer understanding and readiness in Minnesota for implementation of health care homes" will be conducted to guide capacity building efforts for a statewide health care home system. As noted in the 2007 report, *Health Care Reform: Addressing the Needs of Rural Minnesotans*, health care planning and policy development must be responsive to rural differences in demographics, distance, health care workforce, and health system characteristics to accomplish policymakers' health reform goals (ORHPC, 2007). With this in mind, rural populations should be identified as subpopulations to be considered when adjusting payment incentives and other components of health reform implementation. In addition, rural health providers should be specifically identified for consideration as standards, criteria and requirements are developed. Rural patients and rural health care providers should be actively recruited for inclusion in all community assessment and implementation work groups established during health reform process.

Recommendations Regarding Health Care Homes in Rural Minnesota

The infrastructure of the health care home concept as it applies to the delivery of primary care will only be successful statewide if implementation is inclusive of the perspectives on health and health care delivery from both rural and urban communities. Patients' concepts of health and health care delivery are affected by place of residence and community-level culture. These perspectives are reflected in health-related behaviors and in how preventive medicine is offered and illnesses are treated (Long, 1993). Success in transforming health care delivery in Minnesota will depend on the following recommendations to support rural health care systems as they adopt the health care home concept.

- **Pursue rural primary care workforce development strategies simultaneously with health care homes development.** Improving the availability of primary care providers in rural areas will be essential to the success of the health care home model in rural Minnesota. Robust health care teams allow primary care physicians to provide better patient care and are more attractive to students considering practicing in rural areas. Support must be provided for approaches such as Rural Primary Care Clerkships, the Rural Summer Experience for premedical students, and loan forgiveness programs. The Area Health Education Centers (AHECs) and Health Education-Industry Partnership (HEIP) both employ long-term strategies to expand the primary care pipeline by fostering community, education and health care industry partnerships for local planning, recruitment and retention of health care professionals.

- **Establish multiple options for health care home certification.** There is significant interest in the standards that must be met for providers to qualify as health care homes. In addition there is concern among rural interests whether they will contain enough flexibility to encourage full participation by rural providers, especially small and financially fragile practices. Accountability to goals rather than to specific mechanisms should be emphasized so as not to create barriers to meeting health care home criteria. Allowing the maximum level of participation as a health care home will require some flexibility in qualification standards, especially if they are to include smaller providers. Recognition that health care delivery in rural and underserved areas does not have same workforce capacity is vitally important in the development of health care home standards. As policymakers begin implementation of standards for the certification of health care homes, factors that may present challenges to rural participation, such as underdevelopment of electronic health records or formal quality reporting systems, should be adjusted for in ways that encourage rural providers to both meet eligibility requirements and speed system development.

- **Broaden providers' perspective of health care home through education and leadership development.** While the health care home concept is not new, for the first time in Minnesota it is being broadly expanded to include the adult patient population, requiring consistent, ongoing contact with a personal clinician or team of clinical professionals through the entire care continuum. This expansion to serve the entire life cycle is especially relevant in rural

Minnesota, where the population is disproportionately older. The "Health Care Home Collaborative" created in Minnesota's health reform legislation [S.F. No. 3780, Sec.1 Subd.3©], will build on the pediatric model of Minnesota's Medical Home Learning Collaborative (The Learning Collaborative), which was established in the early 1990s and focused on children with special health care needs. The Learning Collaborative provides an educational forum for providers and families to come together, share experiences, and collaborate to improve health care delivery for the pediatric special needs population. The University of Minnesota's Extension Services and Area Health Education Centers (AHECs) are existing programs serving rural communities through community and academic partnerships, and will be able to generate consumer buy-in and expand provider participation in rural Minnesota.

- **Provide for community self-assessments for health care home readiness.** Supportive, integrated communities are essential to the success of health care homes. Assisting smaller communities in the identification of existing and additional resources for needed health care home implementation will be necessary. Developing a community readiness assessment tool to inventory available services and "knock down silos," to build up resources and connections appropriately would ensure greater health care home participation. The readiness assessment of the primary health care delivery system currently planned as a part of health reform implementation should include related community resources such as senior centers, schools, extension educators, rural cooperatives and churches, all of which frequently play an important informal role in accomplishing continuity in rural communities.

  Expand infrastructure boundaries of health care home membership to engage pharmacists, dentists, school nurses, local public health and other ancillary health care services, such as mental health providers and paramedics. Building a primary care base is a key component to establishing a health care home, yet a "distinctive feature of many rural health care settings is the broader scope of practice for primary care providers and the greater use of midlevel professionals (e.g., nurse practitioners) and technicians (e.g., pharmacy and physical therapy) (IOM, 2005). Currently, health care home legislation encourages the inclusion of advanced practice nurses and physician assistants as participants in primary care delivery. Utilizing the

full potential of advanced practice nurses and physician assistants increases the likelihood of successful health care home implementation and delivery in rural communities.

However, given the growing shortage of medical providers in rural areas, it is also worth considering an expanded team of pharmacists, dentists, school health nurses, emergency medical technicians and other possible ancillary medical professionals be included in the health care home. These professions are not specifically mentioned in the health care home model, yet they are frequently in contact with residents of a rural community.

If the goal of better care coordination is to be achieved, especially in rural settings, expanding the health care home to include non-physician health professionals improves the chances of a successful delivery model. The transformation of the health care home from a pediatric model to a health care delivery model for all patients regardless of age must consider the likelihood that family involvement is not always possible, especially for elderly residents in rural Minnesota. Family surrogates, such as "care navigators" for patients isolated in smaller, rural communities, could be included as part of the health care home team. Expanding the boundaries of health care teams can also foster greater sustainability of the health care home in rural settings, where the retirement of a physician or advanced practice nurse could interrupt its implementation.

- **Enable equitable participation from small, rural and independent health care providers.** Health care homes place smaller providers at greater financial risk. It is important to create a "floor" for every provider to ensure a minimal level of reimbursement when participating as a health care home. Establishing regulatory parameters early in the implementation process that distribute the financial benefits and risks among all health care home providers will create a greater incentive for small, independent providers to participate.

  Realign financial incentives to appropriately reimburse for the diagnosis and clinical decision-making required of health care homes rather than for procedural tasks. Reimbursement for coordination of care tasks are scheduled to begin in 2010 under Minnesota's 2008 health reform law. The law envisions that reimbursement of care coordination should be based on the complexity of the patient care provided. These care coordination payments are focused on primary care and are expected to include patient

consultations outside the office visit, patient/family member education, care after hospital discharge, time spent handling specialist referrals, and cost of e-referrals and consultations. In establishing care coordination payments, rural factors such as low patient volumes and frequent post-hospital coordination by older populations should be accounted for if payments are to be attractive enough to interest rural providers in participating as health care homes. It also would be wise to address what will be a growing need among rural providers for federal waivers helping to set the stage for eventual reform of the entire Medicare reimbursement system. Policymakers may want to consider some level of care coordination floor payment for each small clinic that becomes a certified health care home so that small practices have the minimum resources needed to support basic care coordination capacity.

- **Provide health care home startup funding for small, rural providers.** The financial instability of the rural health care system requires establishing a financial incentive to pay up-front costs related to significant organizational change inherent under current health care reform legislation. Funding might be used to offset the initial investment required to coordinate care through a single primary care provider. Given the difficulty in controlling outside influences on health care costs, integrated delivery systems that share savings by improving quality of care, and providing better patient outcomes (consequently lowering the costs for all their patients) should be promoted.

Recommendations for Rural Health Care Delivery Coordination and Systems Integration

The health care home provides a framework for improving the delivery of primary care. While health care homes represent an important development in the delivery of primary care, there is still a critical need to support and encourage system level integration or coordination across the different health care sectors composed of personal outpatient services, acute and post-acute care, and public and community resources. The following recommendations target health professional training, technology, local and regional planning and provider payment. The recommendations encourage system integration to improve care coordination across the continuum while presenting opportunities for making health care delivery more viable and sustainable for rural providers and patients alike.

- **Encourage and support efforts by higher education to offer provider training in team-based, inter-professional care, especially in rural settings.** Care coordination involves the

exchange of patient information among health care providers to ensure everyone is working toward a common goal. Coordination takes place among providers, their patients and their patients' families. Health care professionals are not necessarily trained in care coordination. A study revealed 18 percent of patients reported receiving conflicting advice regarding the same condition from different physicians because the providers were not communicating with one another (Bodenheimer, 2007). However, collaborating professionally is not solely about communicating. It also involves observing what other professions are doing, allowing for health professionals to learn and train together. One approach to improving health care provider coordination is to change training at the academic level to include rural health care settings for care coordination and/or inter-professional training. Those selected to receive inter-professional training in rural settings should be chosen based on their commitment to practicing in rural communities. An inter-professional and education program established in 2004 by the University of Minnesota and financed by the Minnesota Education Research Costs (MERC) program has funded 14 projects statewide, demonstrating the positive impact of inter-professional care on community health outcomes. The continuation of an inter-professional education program supplemented by additional opportunities for provider training as a health care home, (including team training for physicians, registered nurses, physician assistants, dentists and pharmacists) will encourage greater rural health care home participation.

- **Encourage communication improvements across a variety of sectors.** Assistance in removing existing barriers for connecting to both formal and informal support systems can go a long way to improving care coordination in rural areas. Incorporating patient care plans and registries as part of the health care home will likely require greater communication between primary and specialty care. The use of information technology is vital in rural areas, where primary care is often practiced on a smaller scale and in isolation, requiring providers to coordinate a larger number of transfers to distant locations where specialty care is available (IOM, 2005). Communication technology can also contribute to onsite professional training, conferencing, and formal and informal networking providing individuals the ability to augment their skills, receive interdisciplinary training and pursue higher academic credentials that otherwise would be inaccessible in smaller, rural health care settings. Communication entry points should also include community resources outside the medical field, such as social

services, schools, ambulance services, mental health services and local public health, provided that data privacy is adhered to as stated under the 1996 Health Insurance Portability and Accountability Act (HIPAA). Adequate coverage and payment for health care services delivered electronically provide the most potential for broadening acceptance and reducing current communication barriers among the various sectors within a community.

Statewide initiatives for rural providers to expand use of interoperable electronic health records and health information technology should be continued. And, it is important that new technology mandates be scalable. Much of the success of the health reform legislation is dependant on the use of health information technology (HIT) in a rural health care setting. Incorporating HIT requires thorough and systematic planning involving key stakeholders, which can be time consuming. For rural providers, simply budgeting for time and staff to implement HIT can be very challenging since staff often have both management and direct patient care responsibilities. Multiple strategies are being used to help rural providers plan and implement electronic health records (EHR). The Minnesota e-Health Initiative, a public-private collaborative, has accelerated the adoption and use of interoperable EHRs among health care providers statewide. In 2008, the Lac qui Parle Health Network in Madison and the Minnesota Rural Health Cooperative in Cottonwood were awarded e-Health funding to establish interoperable EHR implementation. An additional solution may be to encourage collaborative learning in preparation for HIT adoption, providing rural health care providers additional capacity to meet the statewide technology mandates.

The 2006 Minnesota Legislature appropriated $1.3 million in matching grants for the adoption of interoperable EHR systems and HIT. To assist rural health care providers in meeting the statutory requirements for HIT adoption, the 2007 Legislature added additional funding to support providers in rural and underserved areas, increasing the biennial grant appropriation to $7 million dollars and adding $6.3 million in no-interest loans.

As technology transforms the health care delivery system, rural providers who do not have EHRs should not be prevented from being able to participate in health care homes or any other new delivery model. The state should continue to assume the responsibility of ensuring EHR implementation is carried out in rural Minnesota. It is vital to continue funding these

current statewide initiatives to ensure that rural providers can implement health information technology. The development of new legal requirements in health information technology must recognize the unique implementation challenges for rural health care providers, and build solutions accordingly.

- **Establish and encourage financial collaborations for meeting technology needs.** Some rural communities and health care providers have in place the infrastructure to handle telecommunication requirements for health information exchanges, but the cost of delivering telecommunication services to sparsely populated areas continues to be significantly higher compared to urban areas. Rural electric cooperatives are early examples of regional collaboration with federal financial assistance that led to electrical expansion into rural areas that had been ignored by the commercial electric industry. Locally owned rural electric cooperatives got their start by borrowing funds from the Rural Electrification Administration to build lines and provide service on a nonprofit basis (National Rural Electric Cooperative Association, 2008). Minnesota has some regional success in bringing technology to rural health providers of the state. SISU Medical Systems is an example of a health information exchange model bringing information technology to provider-based health care systems in northeast Minnesota. Both the Lac qui Parle Health Network and Minnesota Rural Health Cooperative are examples where regional collaboration has been awarded financial assistance in the form of e-Health funds to meet local technology needs.

- **Build upon regional networks, cooperatives and collaborations for sharing resources.** Cooperative integration in the management of patients is a strategy often used for building stable rural health care delivery systems, which can address workforce supply issues, reduce costs for rural providers delivering care, and permit reallocation of resources to improving community health. Approximately one-third to one-half of rural providers are already involved in a cooperative or voluntary alliance of some kind, with “rural hospitals figuring prominently in these networks as both members and anchor institutions” (Moscovice, 2003). The purpose of networks depends on its members and their organizational needs. Some cooperative networks are formed to address many shared areas of activity, while some have only formed to address a certain issue, like improving member operational efficiencies.

Building upon existing rural alliances where clinical functions and financial risks can be shared would establish greater integration and potentially improve care coordination activity.

- **Provide grants and technical assistance for community-specific, locally-organized, collaborative health care access and delivery planning**. Many health care providers and community organizations are aware of the specific barriers to health care in their communities, but are at a loss for how to plan for, implement and finance new services. Financial and/or technical assistance gives rural communities an opportunity to leverage their resources to address the existing barriers. Grant funding and technical assistance for rural initiatives also provides an incentive or the spark sometimes needed to drive or ignite statewide reform. Moorhead's community dental clinic is a model program in which local rural health care providers and area leaders collaborated with the community technical college's dental hygiene program to establish the first community-based dental clinic to expand services to the area's underserved population while providing valuable training experience for oral health students. The success of the Moorhead program has led to similar oral health programs emerging in underserved, rural communities throughout Minnesota. Opportunities for expansion of local rural initiatives, like the community dental clinic program, can improve the participation of providers and encourage children and families to use health care services across Minnesota.

- **Provide planning and financial assistance for innovative approaches focused on key, high-need issues.** Although many rural health care providers are financially vulnerable, they are often the strongest organization in terms of leadership, number of employees, and community outreach and integration. Some rural hospitals have identified the need for services hospitals may not traditionally provide, and create the necessary partnerships and programs to address those needs. Examples include: rural hospitals that provide dental services; hospitals and clinics that provide unique patient coordination and outreach such as assisting uninsured patients with enrollment in public programs or helping patients navigate larger or different health care systems, and health education and wellness programs. Care coordination for the elderly and transportation are high priority areas in many rural communities, but frequently are addressed separately in grant programs in different agencies. Targeting financial assistance for demonstration projects proposing initiatives outside the

traditional scope of services may be the most direct approach to addressing a multi-level need in a rural community. Over the long term, it will be just as important to develop better reimbursement policies to make these demonstration projects sustainable.

- **Make payment reform a priority.** Redesigning payment policies that uncouple reimbursement for clinician visits and reward provider collaboration and system integration will need to occur. Right now there are few incentives for health providers to collaborate with one another. For rural health care systems, payment reform means not having to place existing services or facilities at risk of being financially disabled given their limited patient volumes. Medicare also will have to lead payment reform not only because third-party payers tend to look for Medicare to lead, but also because rural health care providers are more reliant on compensation from public programs, like Medicare and Medicaid. A performance incentive for health care providers consulting and collaborating with other sectors by building health care teams of midlevel professionals, technicians, local public health nurses, and/or other community partnerships will encourage involvement from both traditional and non-traditional health care resources available within a community. Some rural health care systems have demonstrated an ability to develop networks and collaborate with partners as a way of sharing resources, creating efficiencies and expanding basic health services to local residents. Medicare will have to reform its payment system to compensate care coordination activities. Payment policies should be changed to reward these types of collaboration within and across the different segments of the health care sector.

Conclusion

Our nation's health care delivery system is undergoing a vast amount of change primarily because there is a cost and quality imperative that can no longer be ignored. Like other states, Minnesota implemented health reform legislation in 2008 to improve the quality and cost of health care delivery. One component of the legislation focuses on redesigning primary care delivery by assigning health care homes to patients to enhance care management coordination. Providers and patients alike will potentially benefit from the health care home concept since it focuses on using enhanced care delivery teams and technology to improve patient outcomes. Providers will be spending more time with patients, coordinating their care with a team of health professionals, while patients will experience more responsiveness from health providers and potentially healthier outcomes. However, despite these promising results, reinventing the system requires special attention be given to smaller, rural health providers, who are often saddled with fewer resources, workforce shortages and financial uncertainty to be investing in substantial organizational change. Policy involving health care homes must recognize the need to continue focusing on rural workforce development through leadership and education, being flexible in setting certification standards, providing startup funds for smaller providers, and realigning reimbursement with prevention and wellness.

In addition to health care homes, it is also important to encourage and support health care system communication and integration across the entire health care continuum. Some rural health care providers have forged ahead by using grant monies for health information technology investment or creating informal voluntary cooperatives to share limited resources. For many other rural providers, there is still a need for either investment or continued support for innovative projects and programs that improve care coordination across the various health care sectors. Support could mean creating more inter-professional training for health professionals at rural clinical sites or continuing to target financial support of electronic health records and health information technology initiatives to rural providers. Support could also include programs that build on existing regional voluntary networks, and providing funding and technical assistance for locally-organized, collaborative health care access and delivery planning, and promoting provider collaboration and communication via payment reform.

A comprehensive redesign of the health care delivery system will mean a new way of providing and experiencing health care services in Minnesota. It is important that the recommendations and issues identified in this report are carefully considered for successful changes in future health care delivery models and in health care reform initiatives. This work provides a step toward envisioning what a new model of health care delivery may look like.

Taken together, the recommendations lead to notable progress in stabilizing and improving rural health care systems and positions rural health providers to make the contributions needed to successfully meet health reform goals and provide citizens with the health care improvements they expect and need.

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