Telehealth in Minnesota: At a Crossroads

Karen Welle & Stuart Speedie

This is a heady time for those who are taking advantage of health information and telecommunications technologies to provide affordable, safe and high quality health care. New acronyms and terms are popping up every day to deal with the growing use of technology to deliver health care. "Telemedicine" (provision of clinical services over distance), "telehealth" (a broader application including distance education, consumer outreach, etc.), "HIT" (Health Information Technology), "ICT" (Information and Communications Technology"), "EHR" (electronic health record), and "HIE" (health information exchange) are just a few. If those involved in the health care delivery system struggle to keep pace with new acronyms and terms, imagine the difficulty faced by consumers.

While various efforts have been under way for years to connect health care providers to each other and to their distant patients, several factors are now coming together to create a broad interest in pushing the agenda on the use of health information technology to exchange information and deliver health care in new ways. A few of those factors include: concern over patient safety and quality health care delivery, rapid deployment and use of broadband and wireless technologies, dismay over rising health care costs, and pressing health worker shortages experienced by many rural communities.

Rural communities see the benefits

Rural communities stand to gain from advances in health information and communications technologies. Telemedicine and telehealth activities began to appear in communities and regions across Minnesota more than a decade ago as an effective and efficient way to overcome the challenges of long distances and a shortage of specialty care providers. The benefits are numerous. Patients remain

with their families and in their communities. Travel time and costs are reduced or eliminated. Employers experience fewer lost work hours. Rural primary care practitioners receive support from their colleagues in larger metropolitan areas. Patients report a high level of satisfaction, and most importantly, medical outcomes are better as patients have access to needed services.

Telehealth has been used very effectively in a variety of settings:

- Specialty consultations between primary care physicians in rural communities and specialists in larger urban hospitals and clinics support practitioners and save patients from traveling long distances to see specialists.
- Videoconferencing connections over secure networks link patients directly to providers in separate locations. Telemental health and telepsychiatry are among the growing areas for this application.
- Teleradiology allows digital X-ray images to be instantly conveyed to a radiologist in a remote location for interpretation.
- Home telehealth connects patients in their homes to providers via a variety of simple technologies including web cams and monitoring devices that transmit blood pressure, heart rate, and other health indicators to a nurse in a clinic office.
- Distance learning for K-12 and college students in health care fields, medical professional trainees, and healthcare staff permits students to be educated and receive continuing education and advanced training in their own communities.
- Telepharmacy connections allow 24/7 pharmacy coverage in small-town hospitals and the development of remote retail outlets staffed by pharmacy technicians or nurses under the supervision of a pharmacist.

Telehealth and health information technology: mutual benefits

Today, the federal government has taken on the task of accelerating the development of electronic health records exchange. In January 2004, President Bush called for the widespread adoption of electronic health records within 10 years. An Office of the National Coordinator for Health Information Technology was established in the Department of Health and Human Services. Secretary Mike Leavitt's stated vision is "to link all health records through an interoperable system that protects privacy as it connects patients,

providers and payers, resulting in fewer medical mistakes, less hassle, lower costs and better health."

The new emphasis on the adoption of electronic health records clearly has widespread implications for patient safety and quality of care, privacy, public health, consumer involvement in health care decisions, and cost containment. But it is also creating an environment for the support and growth of telehealth services. The goals and activities of telehealth and electronic health records exchange are complementary and synergistic. The same infrastructure and systems that support the development of electronic health records and exchange of health information can also support the delivery of health care via telemedicine and vice versa.

Minnesota e-Health Initiative

There has never been a better time for the expansion and coordination of telehealth and telemedicine in Minnesota. In addition to the federal government's commitment to health information technology expansion and significant private sector investment, Minnesota has initiatives in place that will move development and coordination of telemedicine activities forward in significant ways. The first of those initiatives is the recent development of statewide activities to expand electronic health records.

The Minnesota e-Health Initiative is the result of legislation directing the Minnesota Department of Health to lead the coordination and development of electronic health records in Minnesota. In September 2004, a public/private advisory committee was convened, comprised of representatives of hospitals, health plans, physicians, nurses, other healthcare providers, academic institutions, state government purchasers, local and state public health agencies, citizens, and others with expertise in health information technology and electronic health records systems.

Meeting over the course of approximately eight months, the e-Health Advisory Committee came up with fourteen recommendations for priority action to be included in a report to the 2007 Minnesota Legislature. While the focus of those recommendations — to empower consumers, inform and connect health care providers, protect communities, and enhance the infrastructure — center around electronic health records development, they emphasize that rural and underserved communities must not be left out of the development of a health information exchange system. In fact, one of the Initiative's recommendations points directly at the necessity of ensuring that e-Health system development is integrated with and supports

statewide telehealth services, with the goal that by 2012 all Minnesotans will have access to reliable, secure, and robust telehealth services that are fully integrated with e-Health systems. To learn more about the e-Health Initiative, go to: http://www.health.state.mn.us/e-health/

Planning for the telehealth future

Telehealth must be included in any infrastructure and system development planning so that the resulting system evolves in a way that supports telemedicine services. To do otherwise would be a missed opportunity for rural communities.

Common requirements for both telehealth and health information exchange networks include:

- **Establishing and maintaining networked relationships.** Telehealth networks, which often consist of one or more hospitals and multiple affiliated clinics, require multiple independent organizations to work together toward a common goal of providing health care, keeping in mind established patient referral patterns and provider relationships. They need to be built with a critical understanding of the existing political and economic structure of the health care system in the region served in order to fully realize the benefits of remote clinical services.
- **Overcoming resistance within the organization.** Change is difficult, even positive change. Champions for developing remote health and medical services often come from organizations or departments with different needs and expectations. New alliances between leaders from HIT, clinical medicine, telecommunications and public health are needed to overcome resistance to change.
- **Surmounting the absence of standards and guidelines.** Standards have been a long-standing issue in telemedicine. Advocates for the development of telemedicine have wrestled with incompatible software and devices using proprietary specifications combined with a lack of agreed-upon protocols, guidelines and business strategies. With the growing maturity and size of the videoconferencing market and the new government emphasis on implementing HIT, collaboration should focus on mutually agreed-upon technical benchmarks and high quality communications networks that assure interoperability on several levels and that allow health

professionals providing distant care to have immediate access to a patient's health history.

- **Financial sustainability.** Sustainability of a telehealth system is dependent upon adequate revenues and cost savings. Insurance or third-party coverage of telehealth services, while significantly improved from ten years ago, is still not at the level needed to support a self-sustaining business model. It is clear that multiple solutions are needed and that collaboration is key.

  Some telehealth networks have developed a membership model, wherein all participating facilities pay an administrative fee to cover infrastructure-related costs. Other models build upon providing off-hours emergency room support or scarce psychiatric services, where the benefits and proven cost savings justify the initial infrastructure costs.

  The Universal Service Administrative Company (USAC) administers the Federal Communications Commission's (FCC) Universal Services Fund and through its subsidy program helps keep telecommunications services affordable for rural health care providers. This program will continue to be a significant factor in the growth of health information technology and telehealth services.

  In late September 2006, the FCC announced a new pilot program starting in 2007 to support state or regional telecommunications networks with the goal of expanding regional access to telehealth services and capacity. Discussions are under way among leaders in telehealth on the best way to position Minnesota to access this program. It has the potential of being a significant driver of Minnesota's telehealth network expansion.

Minnesota telehealth success stories

Rural Minnesota communities have a history of developing innovative strategies to assure patient access to high quality care. Current community and regional successes have benefited from the creativity and initiative of a few individuals determined to respond to needs for health care services that might not otherwise be available. Those individuals gathered support, networked, found resources, and kept their focus on finding ways to connect their patients to the services they needed. Some of the current efforts under way to deliver telehealth services in Minnesota include:

Minnesota Telemedicine Network (MTN). Beginning with a single connection between the University of Minnesota Medical

School and Tri-County Hospital in Wadena, the original network has grown into the MTN, which comprises 18 rural hospitals and clinics, including tribal health facilities. Over the next year it will expand to include 25 partners.

MTN meets the needs of rural Minnesotans by providing access to a range of specialty medicine consultations (dermatology, orthopedics, neurology, gastroenterology, asthma/allergy, adult psychiatry, child psychiatry, and wound care), chronic disease management, and health professional education. The network plans include continued growth into an open network of multiple telemedicine providers and users to reach a larger percentage of the state's rural underserved populations in multiple settings, including hospitals, clinics, homes and long-term care facilities.

Wilderness Health Care Coalition: telepharmacy. The current shortage of pharmacists and the demise of local retail pharmacies has placed some rural communities at risk for losing pharmacy services altogether. The Minnesota Wilderness Health Care Coalition, comprising ten northeastern Minnesota hospitals, came together to identify a solution that would assure each hospital the after-hours pharmacy coverage they required to meet accreditation requirements and to provide better care for their patients. The Wilderness project developed a telepharmacy solution to do just that. Working in collaboration with St. Luke's Hospital in Duluth, they developed a system that allows a St. Luke's staff pharmacist to provide services to each hospital as needed on a 24/7 basis by supervising pharmacy technicians or nurses at the remote site. Using a combination of video cameras in each location to allow the pharmacist to verify medication orders and dosages, bedside barcode scanning devices, and remote dispensing equipment, the Coalition is able to preserve timely, cost-effective pharmacy services for its member hospitals.

University of Minnesota Medical School Duluth Center for Rural Mental Health Studies. The Center for Rural Mental Health Studies (CRMHS) at the University of Minnesota Medical School Duluth is integrating mental health into primary care settings for underserved rural populations using telemedicine. CRMHS partnered with the communities of Bigfork, Cook and Grand Marais and the Human Development Center in Duluth to develop a telemental health service delivery system.

This primary telemental health service uses a modified shared care model of service delivery. Psychologists from the medical school in Duluth work with a patient's primary care physician to

provide behavioral health services within the clinic via televideo communication. Patients receive timely, local mental health services that can be accessed without the stigma associated with entering a mental health clinic or the costs involved with travel to distant sites for consultation. Following the session(s) with the patient, CRMHS providers call the referring community physician, summarize their clinical impressions and offer treatment or further referral recommendations. This is followed up with a written communiqué for the patient's medical file. Patient satisfaction with the arrangement is reported to be very high.

Good Samaritan Health Care. Starting in 2001 with a Bush Foundation grant, and augmented with USDA assistance, four Good Samaritan home care agencies provide home telehealth services to an average of 80 to 100 clients at a time in seven southwestern Minnesota counties. Program staff have found that some elderly clients are initially afraid of using technology to communicate with their home care nurse, but they tend to adjust very quickly and, in fact, like it. The technology permits approximately five to six telehealth visits for each in-home visit. The savings of time and mileage result in a positive bottom line for the home care agencies and, most significantly, less frequent emergency room visits and hospital readmissions for their clients. Program staff are finding that clients are taking control of their health and are experiencing a better level of health than seen under traditional home health visit scenarios.

Continuing challenges

In September 2006, the Minnesota Department of Health's Office of Rural Health and Primary Care convened a group of about 30 individuals and organizations interested in promoting telehealth development in Minnesota. The group learned some basics of telehealth and heard about Minnesota's current telehealth initiatives. They also reviewed what other states are doing to organize and support telehealth development and identified the barriers and challenges that must be addressed to create an effective telehealth system. These include:

Isolated, uncoordinated efforts. While there were many excellent efforts currently under way, participants soon realized that these efforts have often been, and continue to be, isolated from each other. This lack of coordination and support has sometimes resulted in networks that do not or cannot communicate with each other

and staff that do not receive the support required to handle the challenges of using technology to deliver health care.

Referral patterns, local regulations and existing business arrangements. In addition to telecommunication network conflicts, existing health care referral patterns and provider relationships can interfere with connecting the most appropriate or available health care provider with the patient in need of care. Local physicians can be reluctant to refer their patients to telemedicine providers outside of their existing referral network or not associated with an affiliated organization. In addition, many rural hospitals require that any treating physician be credentialed at their facility, creating a potential for lengthy and expensive delays before telemedicine can be made available.

Policy and regulatory barriers. Public policies can also get in the way and must be addressed before a truly integrated telehealth network can exist. An example: removing the challenge of time and travel suddenly exposes the challenge of trying to connect providers who are licensed in one state with patients who reside in another state.

Broadband network availability — "the last mile". While broadband is becoming more available to some rural communities, telecommunications providers are not likely to make the investment in laying cable to communities that are remote and unlikely to provide the kind of financial return they would expect in the long term. This leaves communities that most need remote services out of the loop.

Equipment and user costs. While the Universal Service Fund helps to ease the higher cost of line charges telehealth providers must pay in rural areas, it does not provide support for the equipment needed to get a telehealth operation up and running. Even though equipment costs have dropped dramatically in the last decade, they are still not trivial. Providers often look to grant funding, which is sometimes available and always temporary.

Privacy and security. High-speed bandwidth is not enough to get the job done. For a patient and a provider to connect over distance, security is a must. A simple Internet connection, even a high-speed one, is not enough and in fact is an invitation for trouble. Telehealth networks, in order to assure patient confidentiality and conform to

HIPAA requirements, must operate in an environment that is secure. The balance between interoperability and security is critical.

Third-party reimbursements. Great strides have been made in recent years to overcome some of the reimbursement challenges that providers have faced as they have attempted to deliver services remotely. Live, interactive consultations between specialists and primary care physicians or patients are now largely covered at face-to-face rates. Teleradiology is widely, if not completely, covered. Minnesota Medicaid does pay for home telehealth skilled nurse visits; such visits are allowed as an "episode of care" under Medicare prospective payment regulations, but do not count as stand-alone reimbursable visits. Medicare and other payers do provide a small facilities fee to assist remote sites in covering their telemedicine operating costs, yet they do not fully reimburse the costs of providing telemedicine services. There is still work to be done.

Other states' telehealth initiatives

Minnesota's telehealth system, when compared to other states, is somewhere in the middle of the pack. While there is development in place, Minnesota has a long way to go before the state will be on par with other states that have developed organizational, technical, and operational systems as well as funding sustainability. The models are varied. Nebraska, Kentucky, Arizona, Montana, Washington, Virginia and Missouri are examples of public-private telehealth networks funded by a combination of state, federal and membership dollars. California's Center for Telemedicine and e-Health has received heavy funding from state health care foundations to establish and build its programs and infrastructure. Many of the networks originated, are housed in, and/or partner with their state's university medical center. While each state is somewhat unique in its approach, what is common to almost all of these models are public-private partnerships, common network infrastructures, training resources and technical assistance capacity, and broad applications that connect with other sectors, such as education or corrections.

What's next for Minnesota

Minnesota is poised to move forward in developing a supported, integrated, and interoperable telehealth system. Those who attended the September Minnesota telehealth forum identified steps to ensure that further development in Minnesota is coordinated and sustainable. Among them:

1. To establish a statewide public-private initiative that coordinates, develops, and supports telehealth as an integral component of e-Health policies and activities in Minnesota.
2. To develop and publish a dynamic directory of all existing telehealth services and functional capabilities in Minnesota in order to raise awareness of telehealth and to connect people and providers to services.
3. To identify telecommunications and health care regulatory and policy barriers to achieving telehealth goals and propose possible solutions.
4. To develop an open, interoperable, secure telehealth network that is accessible to all consumers and providers statewide and integrates with e-Health systems.

State agencies, such as the Minnesota Department of Health, Minnesota Department of Human Services, and the Office of Enterprise Technology are beginning discussions to ensure that public efforts are mutually supportive and align with identified priorities. Diverse partners such as the University of Minnesota, the Blandin Foundation, current telehealth providers and networks in Minnesota, North and South Dakota, telecommunications providers, and professional trade associations are also bringing their knowledge and experience to the table.

At the front and center of telehealth system development in Minnesota is one overarching goal: to be able to connect any patient in Minnesota with any health care provider. It is ambitious, but it is achievable. It is ultimately about access to health care for all rural Minnesotans.