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QUARTERLY

Dog sledding in the Ely area. ©Minnesota Office of Tourism Photo

The mission of the Office of Rural Health & Primary Care is to promote access to quality health care for rural and underserved urban Minnesotans. From our unique position within state government, we work as partners with communities, providers, policymakers and other organizations. Together, we develop innovative approaches and tailor our tools and resources to the diverse populations we serve.

Mark Schoenbaum

DIRECTOR'S CORNER

Big Hairy Audacious Goals

A colleague recently shared a copy of "Good to Great and the Social Sectors" by Jim Collins. Collins wrote the business books "Built to Last" and "Good to Great," before turning to the social sector. He applies his business principles to such challenges as nonfinancial indicators for measuring results, leadership and recruiting within social sector constraints, and building the reputation and track record to attract long-term support.

Collins says the visions of great organizations are characterized by timeless core values and a relentless drive for progress, embodied by "Big Hairy Audacious Goals." A Big Hairy Audacious Goal is an ambitious long-term objective that serves as a clear and compelling focal point of effort. According to Collins, a Big Hairy Audacious Goal shouldn't be a sure bet, but the organization must believe "we can do it anyway." The three articles in this issue of the Quarterly report on visionary, multiyear efforts that apply evolving information technology to improve health care quality and access statewide, or Big Hairy Audacious Goals!

Tim Held reports on the new Web-based trauma registry. The goal of Minnesota's state trauma system is to ensure that all severely injured people are promptly transported and treated at trauma hospitals appropriate to the severity of their injury. Coordinated, rapid triage and transport to high quality definitive treatment for all, wherever they may be injured over Minnesota's 80,000 square miles clearly meets the characteristics of a Big Hairy Audacious Goal! The Web-based trauma registry gives hospitals, large and small, the information technology to continuously improve their trauma services and its value will grow as more hospitals use it. Integrating performance information into a trauma system from its beginning is conceivably a Big Hairy Audacious Goal on its own.

Bill Brand reports progress on the goals of Minnesota's eHealth Initiative: To accelerate the adoption and use of health information technology to improve health care quality and safety, reduce costs and improve public health—and we know Minnesota will excel in meeting these goals and become a leader among states. His article also discusses the eHealth Initiative's work with Minnesota's small and safety net health providers in rural and underserved areas, and here we find another Big Hairy Audacious Goal. The eHealth Advisory Committee proposes that "All health care providers in all settings in rural and underserved areas will have the capital and information resources needed to implement interoperable Electronic Health Records." This stretch goal, with its inclusion of all facilities regardless of location, population served or setting, including long term care, home care and ambulance, is shaping state investments in health information technology.

Maureen Ideker recounts Wadena's journey with telemedicine. In 1994, Tri-County Hospital and its partners began one of the state's first telemedicine projects. Over the last 12 years their vision brought telehealth to 15 additional sites. Most recently, Wadena became headquarters for the newly named Minnesota Telehealth Network, which is poised to expand to 37 over the next three years. Tri-County Hospital clearly has a Big Hairy Audacious Goal for telehealth. Jim Collins sets a 10- to 30-year time frame for Big Hairy Audacious Goals, and seeing what Tri-County has accomplished since 1994, I can't wait to see where they are over the next 10 or 20 years.

As a new year begins, these three leaders in health information technology offer great inspiration. May you realize your Big Hairy Audacious Goals and may you dream new ones in 2007.

Mark Schoenbaum is director of the Office of Rural Health and Primary Care. He can be reached at mark.schoenbaum@health.state.mn.us or (651) 201-3859.

The Minnesota e-Health Initiative: Connecting Patients and Providers

By Bill Brand, M.P.H., Minnesota Department of Health, Center for Health Informatics

An adult son is completing a long and complex health history for his elderly mother for the fourth time in as many weeks. He worries about forgetting something that could be important to the specialist seeing her for the first time. *If her medical history was all in one place, a new clinic could get a complete and accurate record, without this stress and frustration.*

The patient's list of medical conditions and medications is long. The physician worries that the new medication will react with one the patient forgot to tell her about. *If his complete medication history was available electronically, the record system could alert the physician to potential drug interactions.*

The health and health care sectors are undergoing what is arguably the largest and most widespread transformation in history. At a rapid pace that is itself historic, health information technologies are being adopted to improve patient safety, increase the quality of care, reduce costs, and strengthen and advance public health. Health organizations are steadily unburdening 21st century medicine from paperwork that has remained largely unchanged since the 19th century.

Like many other states, Minnesota has an e-Health Initiative that has widespread support and engagement, including that of the Governor and the Legislature. The Minnesota e-Health Initiative (MN-eHealth), begun in 2004, is a private/public collaboration to accelerate the adoption and use of health information technology to improve health care quality, increase patient safety, reduce health care costs and improve public health. The Minnesota e-Health Advisory Committee guides this collaboration and provides recommendations to the Commissioner of Health.

The historic changes brought about by e-Health are generally of three types:

- The switch from paper medical charts to electronic health records (EHRs)
- The ability to electronically and securely exchange patient data among providers so that it is available at the point of care and
- The empowerment of consumers with electronic personal health records, which capture ongoing health histories and provide prevention information.

Implementing EHRs is more than moving from paper to digital. When designed and used properly, they are not just an electronic version of a paper chart. A full-featured EHR can speed patient information capture and retrieval during a visit; prompt the clinician about preventive or other care; alert the clinician to any drug-to-drug or drug-to-patient interactions; and provide reports for quality improvement/measurement purposes.

Another e-Health component is health information exchange (HIE). The goal of HIE is to ensure that consolidated, complete health information can be securely accessed at the point of care, so the patient and the clinician can make the most informed decision possible. In other words, the right information is available to the right person at the right time and in the right way. Whether implementing a local, regional or statewide exchange, the issues are much the same: 1) how to enable the patient to consent to share what information with whom; and (2) issues related to access, authorization, authentication and auditing. Identifying and addressing such issues is the task of the Minnesota Privacy and Security Project (http://www.health.state.mn.us/e-health/mpsp/index.html).

While many larger hospitals and clinics have benefited from significant investments in health information technology (HIT), there is a very real risk that a gap will persist between urban providers and those in rural and underserved communities. Such a gap not only denies some Minnesotans the advantages of the e-Health transformation, but—particularly given the mobility of today's populations—it undermines the full potential of e-Health.

Of primary concern to the Advisory Committee are the challenges faced by rural providers in adopting health information technology, including:

- Purchasing and maintaining a costly EHR system, especially primary care providers
- Attracting and retaining qualified information technology staff
- Finding the time in already stretched staff schedules to do a systematic job of assessing needs, evaluating various products and solutions, and ensuring adequate training
- Finding credible technical consultation that is independent of any software product.

These specifically rural issues are overlaid by the global issues of:

- Ensuring appropriate policies that align incentives, and support public and private investment in HIT
- Ensuring the widespread adoption of health data standards to support interoperability across the health care system
- Improving public trust by enhancing privacy protections, security standards and data quality
- Ensuring improvements in community health remain part of how quality and success are measured.

Progress and Solutions

Of the 17 recommendations formulated by the e-Health Advisory Committee, three are most critical.

See "e-Health Initiative" *(back page)*

MnTrauma: A Web-based trauma registry for every hospital

By Tim Held, Minnesota Trauma System Coordinator

Most readers of this publication are aware that Minnesota is in the process of establishing and implementing a voluntary, statewide system of trauma care. As defined by the Health Resource and Services Administration (HRSA), a trauma system is a “pre-planned, comprehensive, and coordinated statewide and local injury response network that includes all facilities with the capability to care for the injured.”[1]

There are four primary components of the trauma system: trauma hospital designation criteria; trauma registry; EMS/pre-hospital triage and transport guidelines; and inter-facility (hospital to hospital) transfer guidelines.

Of these, the trauma registry is the foundation component that supports the others. It is through the use of the registry that the system as a whole is monitored and analyzed for efficiency and effectiveness, and at the local level for improved patient care and outcomes.

One design goal of the Minnesota trauma system was to anticipate and remove roadblocks that could prohibit rural hospitals from participating. Near the top of the list was the requirement that all participating hospitals collect, use and submit data to the Minnesota Department of Health (MDH) on all seriously injured patients—a very small subset of patients. However, the potential cost to each hospital of either creating or purchasing off-the-shelf expensive trauma registries was a serious concern.

To address this barrier, the framers of the system envisioned a user-friendly, state-provided, scaleable trauma registry solution for all hospitals to use at no cost. It would be important to integrate current and future technology into the solution, especially for data security and technological support by MDH. Further, the solution needed to integrate with trauma registries already in use.

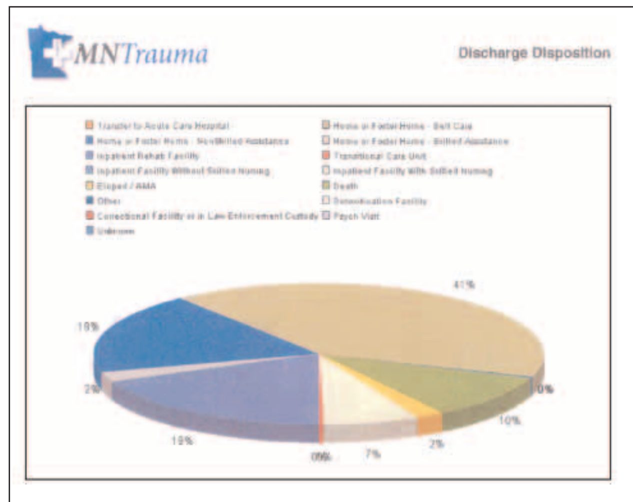
All of this was realized with the launching of MnTrauma, a database-driven Web application that allows authorized persons secure access from anywhere at anytime. It is a scalable product that provides standardization of data at the state and local level. Every hospital in Minnesota and several border trauma centers in North and South Dakota already have secure, individualized locations on the system. All that is required for a hospital to use the system is a computer and internet access. The system, developed by ImageTrend, Inc. of Lakeville, Minnesota, is owned and supported by MDH.

MnTrauma has numerous features for all levels of users. For a small rural hospital that sees a handful of severe trauma cases a year, it is a simple online data collection and submission tool, with many helpful drop-down menus and automated business logic that should significantly decrease the time to complete a report.

For larger centers that regularly handle severe trauma, it also does robust analytical reporting for quality improvement purposes.

All users have access to standardized reports that allow them to compare elements of their internal system and care against aggregate statewide data. This is private information, intended for use by the local hospital only. The system allows for focused ad hoc reporting as well. These reports can be generated automatically or on

demand, and in numerous formats. These reports can be updated on whatever schedule the user chooses, and may even be automatically emailed to a designated recipient (e.g., the hospital administrator or the trauma program medical advisor).



Looking to the future, MnTrauma was designed to seamlessly integrate with the Minnesota State Ambulance Reporting system (MnStar), which is a similar ImageTrend-developed Web-based system for EMS providers to submit required data to the EMS Regulatory Board (EMSRB). This allows hospitals to pre-populate their EMS-related registry requirements from the identical MnStar data already submitted. This integration will eliminate data redundancies, ensure patient centric data aggregation, and maximize staff efficiency. Although this feature is not in use today, it will be offered when MDH and the EMSRB complete their joint effort to ensure that all state data sharing rules are adhered to.

Hospitals do not need to be part of the state trauma system (i.e., designated as a trauma hospital) to begin using MnTrauma to submit state mandated traumatic brain and spinal cord injury data to MDH. In fact, all hospitals are encouraged to do so. Contact Curtis Fraser, MnTrauma support for MDH, at (651) 201-5477, or at curtis.fraser@health.state.mn.us and he will provide administrative rights and training tutorials.

Direct other questions to Tim Held, State Trauma System Coordinator, at (651) 201-3868, or tim.held@health.state.mn.us.

Visit the trauma system Web site, www.health.state.mn.us/traumasystem, for the most current information and resources available to hospitals and other interested stakeholders.

[1] U.S. Department of Health and Human Services. Model Trauma System Planning and Evaluation, February 2006.

Fairview Southdale Hospital, Edina, and Riverwood Healthcare Center, Aitkin, were the first hospitals to be designated trauma centers under the new statewide trauma system. To receive Level III hospital designation, the two hospitals had to establish formalized trauma programs within their facilities and coordinate a unified approach to providing, measuring and improving trauma care within their emergency and surgical departments. Their trauma care providers meet specific trauma-related education requirements and each related department in the hospital has equipment for people of all ages.

As Level III hospitals, Fairview Southdale Hospital and Riverwood Healthcare Center are optimally prepared to respond to traumatic emergencies with established protocols and resources to efficiently manage seriously injured patients. Additionally, they will collect and contribute data to the statewide registry.

Minnesota Commissioner of Health Dianne Mandernach designated both hospitals as level III trauma centers following a recommendation from the State Trauma Advisory Council. “I applaud and congratulate Fairview Southdale and Riverwood for applying to become the first trauma centers under our new system. I encourage other hospitals to apply for these designations so that we can achieve our last step in creating a statewide trauma system,” said Commissioner Mandernach.

Minnesota Commissioner of Health Dianne Mandernach designated Riverwood Healthcare Center in Aitkin, and Fairview Southdale Hospital in Edina, as level III trauma hospitals in December 2006, following a recommendation from the State Trauma Advisory Council.

WADENA'S TELEMEDICINE JOURNEY

by Maureen Ideker, B.S.N., M.B.A., Director of Patient Care Services, Tri-County Hospital

Tri-County Hospital has been providing medical specialist outreach via telemedicine since 1994. This 25-bed Critical Access Hospital in Wadena, Minnesota, with Joint Commission of Accreditation of Health Care Organizations standing, has one of the most active telemedicine programs in the country and is the headquarters for the new Minnesota Telehealth Network.

Wadena's unique location

Wadena is surrounded by four federally designated Health Professional Shortage Areas and three Medically Underserved Areas. Ten family practice physicians, one general surgeon and one radiologist practice in Wadena, as well as six midlevel practitioners. Wadena Medical Center, and four rural clinics in four small communities within a 25-mile radius of Wadena, provide medical services. The physicians and midlevel providers refer to St. Cloud, Fargo and the Twin Cities. The Twin City referrals are mostly for trauma and subspecialty services.

Early telecommunications

In 1994, Tri-Country Hospital (TCH) and the University of Minnesota participated in a federal grant to explore the implementation of medical specialty services provided at a long distance using new and emerging telecommunications technology. At that time, it meant $110,000 worth of cameras, monitors and conferencing equipment, a dedicated T1 fiber connection, and free care to patients willing to try it. A dedicated T1 connection is equivalent to 26 telephone lines provided at the exact same time to send audio and visual data packets to enable the real time digital television quality transmission needed for "virtual visits." The original program linked Wadena to University of Minnesota Physicians (UMP) specialists and was developed by Stuart Speedie, Ph.D., Bioinformatics Department.

The first leg of this journey involved a constant pioneering effort of solving problems, testing equipment and discovering the best ways to use the equipment for patient care. Due to involvement at the federal level, TCH and the University were trying, along with a handful of others in the United States, to shape the future deployment and reimbursement of telemedicine services. The federal government was committed to using this technology to reduce discrepancies in access to medical specialty service in frontier, rural and underserved areas.

Transition to telemedicine

The two main accomplishments for Wadena have been integrating telemedicine into the way day-to-day specialty services are provided and using specialists across the state. Telemedicine services are offered and provided through the same medical outreach department at TCH that the onsite specialists use. The only difference is the virtual versus real presence of the physician. The nurse presents the patients in a dedicated patient room where the equipment resides. A rehabilitation therapist for orthopedics or respiratory therapist for pulmonology may also be with the nurse.

Revenue

The revenue generated through telemedicine falls into two categories. First, specialists are paid for telemedicine visits in the same way they are paid for face-to-face visits. Second, the revenue generated to the patient's rural site can be looked at through an episode of care. For example, a facility fee, x-rays, scans, labs, rehab therapy (PT/OT), home health visits and swing bed fees are generated for an orthopedic patient. The revenue is generated for the rural facility when services are provided.

Equipment

Equipment includes the videoconferencing system and TV monitor, a document projector, and at least one video camera. The real expense for providing telemedicine service is the ongoing dedicated T1 fiber line. Telehome monitoring uses regular telephone lines to transmit blood pressure, pulse, weight and oxygen saturation measurements.

Telehealth Applications

Identification of need is the first step. When Wadena began providing specialty services with UMP, several specialty needs were identified: dermatology, child psychiatry, cardiology and orthopedics. During initial services development, TCH also started offering telehomecare and using teleradiology.

A somewhat newer service, telepharmacy, connects TCH and its Rural Health Clinic in Sebeka. A pharmacy technician in Sebeka is linked 8 hours a day with a pharmacist at the hospital in Wadena. The pharmacist verifies the prescription that the technologist sets up and provides one-on-one counseling for new prescriptions to patients, as legally required. A waiver from the Minnesota Board of Pharmacy has been required to provide this service. Satisfaction with the telepharmacy is very high and steady growth has occurred over the four years of the pharmacy's existence.

Another important telehealth application is the provision of wound care services by a certified wound care nurse to one of the area's long term care facilities. New services that are being explored are dietitian services, speech

therapy to schools, jail health for emergency triage services, and triage services to the 16-bed Community Behavioral Health Hospital in Wadena.

SPECIALTY OUTREACH VISITS VIA TELEMEDICINE 2006	TOTAL VISITS
Orthopedics:	236
Knee: 13	
Shoulder: 162	
Foot/Ankle: 22	
Wrist/Hand: 36	
Cranio/Facial: 3	
Dermatology	240
Psychiatry	84
Neurology	3
TOTAL	**563**

Wadena's expanding role

Part of Wadena's journey with telemedicine has been to teach others across the state how to provide these services. Since 1994, the University of Minnesota's telemedicine network has used Wadena as its training site. Wadena's expertise has helped 15 additional rural sites and numerous specialists, mostly in central and northeastern Minnesota, to build and provide telemedicine services.

Over 1,200 visits are provided annually in the areas of orthopedic surgery, dermatology, cardiology, pulmonology, wound care, gastroenterology, clinical psychology, adult and child psychiatry, fetal and maternal health, neurology, asthma/allergy and chronic pain management. Teleradiology and telehomecare visits are in addition to these. Of these visits, 98 percent of submitted claims are paid.

Collaboration

Recently the Office of the Advancement of Telehealth awarded TCH a grant that involves changing the University of Minnesota Telemedicine Network into the Minnesota Telehealth Network. The Network plans to contract with the existing University telemedicine services and expand to additional sites in northwestern Minnesota and North Dakota affiliated with SISU and the North Region Health Alliance. Up to 22 additional sites will be added over the next three years from these affiliates. Each site will identify their specialty needs, establish specialists to provide services online, and receive equipment and training. Wadena will serve as a training site for the nurses learning to provide telehealth services. By the end of the three-year period, the Minnesota Telehealth Network will have grown to 38 Minnesota counties and eight North Dakota counties.

TCH has been involved in three Office for the Advancement of Telehealth grants with the University of Minnesota (1994, 1997, 2003) and is now the lead agency in the 2006 project. A virtually private Wide Area Network in the Wadena service area that connects seven schools, five clinics, the hospital and a long term care facility was the result of two USDA Rural Utilities Services grants received in 2000 and 2006.

Why telemedicine?

- Avoids travel for both patients and providers
- Allows for increased outreach
- Stretches scarce health and medical professionals
- Keeps revenue in local communities.

Why it works in Wadena:

- Existing need for specialty services
- Access to specialists
- Supportive physicians making referrals
- Visits conducted the same as face-to-face
- Gold standard equipment and telecommunications
- Excellent nurses and supportive administration.

For information about telemedicine, contact Tri-County Hospital and the Minnesota Telehealth Network through Robin Klemek, R.N., telemedicine and outreach manager at (218) 631-7497 or robin.klemek@tricountyhospital.org.

To learn more about the Office of Rural Health & Primary Care programs, visit our Web site: www.health.state.mn.us/divs/chs/orh_home.htm.

Mark Schoenbaum, Director
Mary Ann Radigan, Editor
Cirrie Byrnes,
Editorial Assistant

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e-Health Initiative *(continued from page 3)*

Priority: **Additional capital funding and incentives, especially for rural and underserved areas.**

Progress: Awarded $1.3 million in grants to support interoperable electronic health records in rural and underserved areas.

Potential solutions for remaining gaps:

- Continue and expand funding for rural and underserved areas.
- Provide technical assistance for implementing, adapting to, and maximizing the use of electronic health records and other technologies.

Priority: **Enhance patient privacy protections while facilitating health information exchange**

Progress: Conducted a systematic review of privacy laws and practices.

Potential solution for remaining gaps: Modify patient consent requirements to maintain consent, but better facilitate providers' electronic exchange of patient information.

Priority: **Update, improve and interconnect public health information systems**

Progress:

- Established a joint state-local governance structure to coordinate action.
- Identified policy and technical changes needed to improve and interconnect information systems.

Potential solutions for remaining gaps:

- Update local and state public health information systems to meet emerging data standards.
- Establish standardized electronic connections with private clinics, hospitals and laboratories.

In 2006, Governor Pawlenty called for $12 million to establish interoperable EHRs among collaboratives in Minnesota's rural and underserved areas. Using the $1.3 million that the Minnesota Legislature subsequently appropriated, MDH awarded seven planning and five implementation grants to community e-Health collaboratives. The number of proposals indicated that rural and underserved areas are committed to investing in e-Health. It also highlighted the need for cooperatives to provide IT support and for a pool of consultants, who are knowledgeable in clinical, workflow and business aspects of health care.

Impressive success stories are emerging, despite HIT challenges. Consider sharing your story through the MN e-Health Initiative's Project Profiles Web site at www.health.state.mn.us/e-health.

85 E. 7th Place, Suite 220
P.O. Box 64882
Saint Paul, Minnesota 55164-0882