Minnesota e-Health Initiative

Report to the Minnesota Legislature 2012

Minnesota Department of Health

March 2012

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Protecting, maintaining and improving the health of all Minnesotans

March 22, 2012

The Honorable David Hann
Chair, Health and Human Services Committee
Minnesota Senate
Room 328, State Capitol
75 Rev. Dr. Martin Luther King Jr. Blvd.
Saint Paul, MN 55155-1606

The Honorable Jim Abeler
Chair, Health and Human Services Finance Committee
Minnesota House of Representatives
479 State Office Building
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The Honorable Steve Gottwalt
Chair, Health and Human Services Reform Committee
Minnesota House of Representatives
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To the Honorable Chairs:

As required by Minnesota Statutes, section 62J.495, this Minnesota e-Health Initiative report outlines progress toward Minnesota's goals for health information technology. Significant advances for 2011 included:

- Releasing a new guide to assist Minnesota providers in adopting nationally recognized standards – a key component to achieving compliance with the Minnesota e-health mandates and requirements to receive federal incentives.
- Administering the $9.6 million funding for the State Health Information Exchange (HIE) Cooperative Agreement Program to develop the infrastructure necessary to support health information exchange and meaningful use of electronic health records (EHRs).
- Coordinating statewide responses to proposed federal health information technology regulations to ensure that the needs of Minnesota's health care community are adequately addressed in final regulations.
- Providing timely communications to facilitate stakeholder awareness of state and federal activities related to the HITECH Act, including meaningful use of EHRs and opportunities for involvement in Minnesota e-Health Initiative policy development activities.
- Performing comprehensive assessment of Minnesota's status of EHR implementation and convening stakeholders through the Minnesota e-Health Advisory Committee to recommend actions to further the adoption and effective use EHRs and increase health information exchange statewide.

The Minnesota e-Health Initiative is ensuring that these and many other activities in the public-private sectors across the state are occurring in a coordinated and focused way.

Sincerely,

Edward P. Ehlinger, M.D., M.S.P.H.
Commissioner
P.O. Box 64975
St. Paul, MN 55164-0975

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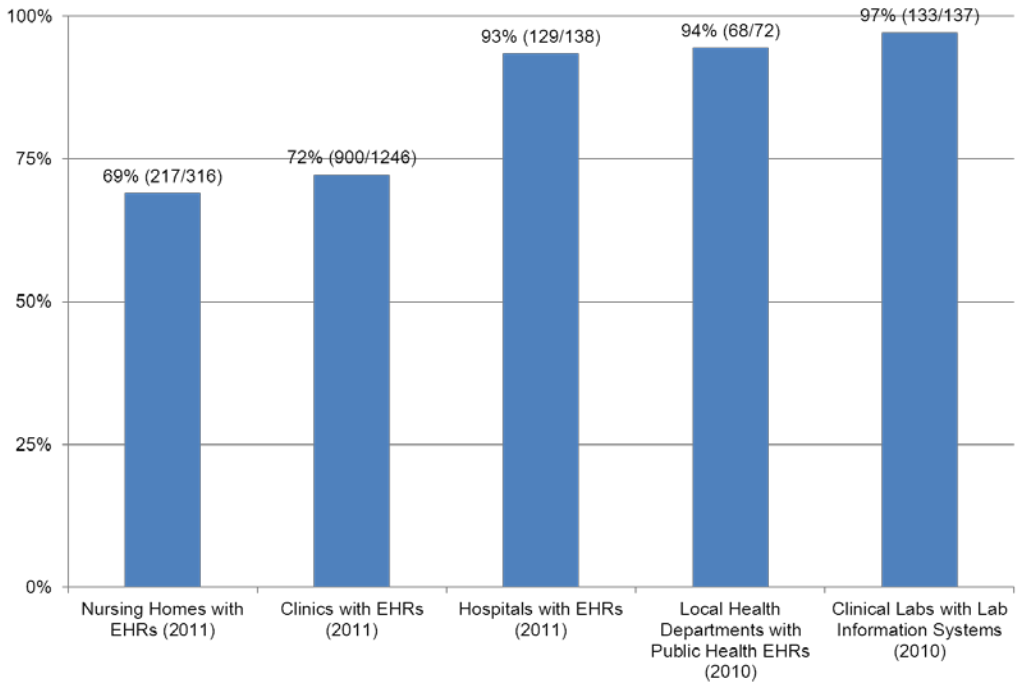
Executive Summary

Health information technology and health information exchange offer transformative opportunities to improve the health and health care of citizens. Minnesota has been a leader in pursuing bold e-health policies to accelerate the adoption of electronic health records (EHRs) and other health information technology, including the use of statutory mandates and funding to accelerate adoption of EHRs and health data standards. It has also provided a model for effective public-private collaboration to advance e-health goals. As a result, Minnesota health and health care providers are making remarkable progress towards achieving the 2015 Interoperable Electronic Health Records mandate, as established by the Minnesota Legislature in 2008 (Minnesota Statutes, Section 62J.495).

Adoption

Minnesota leads the nation in the adoption of electronic health records and related health information technology (HIT). The health and health care settings surveyed (Figure 1) had an adoption rate of at least 69% for all settings. The majority of ambulatory clinics and hospitals that have not adopted EHRs have plans to do so in the next one to three years, which implies that these practices are on track to meet the requirement for interoperability by 2015.

Figure 1. Adoption of Electronic Health Records and Related Health Information Technology in Minnesota



Source: Minnesota Department of Health, Office of Health Information Technology, www.health.state.mn.us/e-health/assessment.html

While much of the foundation has been laid through the efforts of the Minnesota e-Health Initiative, considerable work remains to ensure all providers and all Minnesotans can share in the benefits of e-health. The State e-Health Alliance has noted that *"…the high costs, avoidable deaths, poor quality, and inefficiency of the current system drive urgency for transformation. But … if not smartly coordinated, it may only result in an electronic version of the 'siloed,' inefficient system we have today."*[1]

Effective use

Although there are high EHR adoption rates in Minnesota, the real value from investing in and implementing an EHR, and other HIT, comes from using it effectively. Effective use is about utilizing the full potential of the EHR to achieve the core values of increased patient safety and improved quality of care that accrues both to the organization and to the patients and communities it serves[2]. Indicators of effective use of EHRs available for clinics, hospitals, nursing homes and pharmacies include the use of clinical decision support, e-prescribing and computerized provider order system (CPOE) of medications, use of medical guidelines, reminders or alerts for preventive care, and tools to monitor and improve the health of high-risk populations.

E-prescribing

E-prescribing is the bi-directional electronic information exchange between prescribing providers, pharmacists and pharmacies, and payers or pharmacy benefit managers (PBMs). An important element in improving the quality of patient care, e-prescribing in Minnesota has made significant progress since December 2008 when only 57% of pharmacies were e-prescribing. As of October 2011, 90% of pharmacies were e-prescribing with more than 13.5 million e-prescribing transactions occurring during the first 11 months of 2011, a 40% increase from the same time the previous year[3].

Health information exchange

Health information exchange (HIE) makes health information available when and where needed to improve the quality and safety of health and healthcare. Minnesota's approach to health information exchange is based on public good principles to ensure patients will have access to their health information when they need it. Minnesota supports an open market strategy for secure health information exchange that allows for private sector innovation and initiative, and uses government oversight to assure fair practices and compliance with state privacy protections. As a result, many efforts are underway throughout Minnesota to enable the secure electronic exchange of clinical information between organizations using nationally recognized standards.

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[1] *Accelerating Progress: Using Health Information Technology and Electronic Health Information Exchange to Improve Care*, State Alliance for e-Health, September 2008.

[2] A Practical Guide to Effective Use of EHR Systems (Guide 4). Accessed: www.health.state.mn.us/ehealth/summit/g4effectiveuse2009.pdf

[3] Office of the National Coordinator, Surescripts (2011)

Currently, most health information exchange in Minnesota takes place between hospitals and clinics in the same system or with affiliated partners. In 2011, 87% percent of hospitals and 64% percent of clinics electronically exchanged health information with one or more partners. However, the rates decrease for electronic exchange with unaffiliated partners and other providers, which includes nursing homes, hospice and home health providers.

Conclusion and recommendations

Ensuring the smart and coordinated implementation of health information technology and health information exchange to improve the health of Minnesotans will continue to be the vision and focus of the Minnesota e-Health Initiative and the Minnesota Department of Health. In 2012-2013, the Minnesota e-Health Initiative will continue to focus attention on the following ongoing priorities:

- Advancing adoption and effective use of EHRs and other health information technology to improve quality of care and population health, especially for those with chronic conditions.
- Assessing the progress on adoption and use of EHRs, identifying gaps and barriers to success, and developing pragmatic guidance and resources for organizations to address them.
- Targeting state and federal financial resources to close gaps in adoption and effective use.
- Implementing the federal State Health Information Exchange Cooperative Agreement establishing the framework necessary to enable health information exchange to improve continuity and coordination of care.
- Promoting widespread adoption and use of standards based on national recommendations and Minnesota law.
- Evaluating the impact the adoption of these technologies have on health care quality, patient safety, cost efficiencies, and public health; and to identify and disseminate best practices, practical guidance and resources for organizations to fully realize the potential of these tools.
- Engaging patients and consumers to take an active role in their health and health care, with a clear understanding of how e-health tools can assist them in achieving their health goals.
- Continuing investments in Minnesota's EHR grants and loan programs will assist small health care providers to achieve interoperable electronic health records across the continuum of care, meet federal meaningful use requirements and recoup investments through Medicare-Medicaid meaningful use incentive payments.

Overview of the Minnesota e-Health Initiative

What is e-health?

E-health is the adoption and effective use of Electronic Health Record (EHR) systems and other health information technology (HIT) to improve health care quality, increase patient safety, reduce health care costs, and enable individuals and communities to make the best possible health decisions. Across the nation e-health is emerging as a powerful strategy to transform our ailing health care system. Minnesota is a leader in pursuing bold e-health policies to accelerate the adoption and use of EHRs and related HIT.

In Minnesota, e-health consists of multiple public/private collaborative activities and efforts related to:

- Increasing adoption and effective use of certified EHRs and other health information technology
- Connecting health care providers – clinicians and facilities – to ensure continuity of care for every Minnesotan
- Maintaining outcomes that focus on the patient
- Safeguarding privacy and confidentiality of individuals' information
- Empowering consumers to understand and access personalized health information to facilitate active management of their health
- Using national standards to guide electronic data interoperability, quality measurement and community health improvement
- Improving public health, primary prevention and enabling community preparedness through the use of health information technology
- Informing health research and policy development for improved patient safety, quality of care and population health
- Leveraging existing information systems and incrementally adding improved ones
- Contributing to the development of federal standards efforts

Why is e-health important?

When EHRs and other health information technology are used effectively and health information is securely exchanged so it is available to the physician and patient at the point of care, e-health can provide:

- Improved safety and quality
- Cost savings through both administrative and clinical efficiencies
- Improved continuity and coordination of care through health information exchange
- Increased opportunities to engage patients in their own health and care
- Improved disease management and research capabilities
- Stronger privacy protections

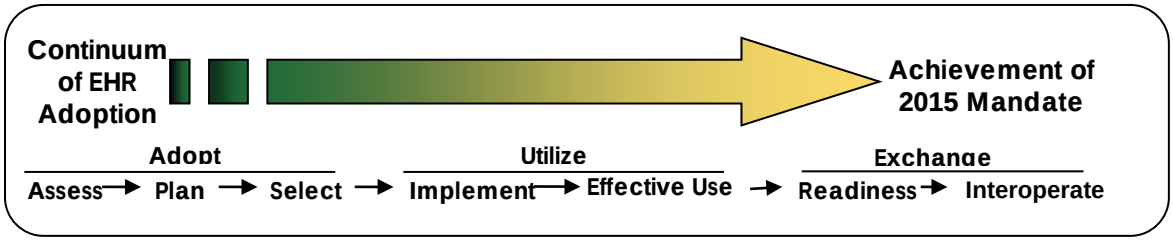
All of these benefits and others add up to healthier communities with healthier citizens and workers.

Who is Leading e-Health Activities in Minnesota?

Over the past seven years, the Minnesota e-Health Initiative, the Minnesota e-Health Advisory Committee (a legislatively chartered 25-member committee), workgroups, and dedicated volunteer participants have provided leadership in the state and nation for the adoption and effective use of interoperable electronic health record (EHR) systems and health information technology (HIT). In 2008, the Initiative developed the Minnesota Model for Adopting Interoperable EHRs. The model contains seven major steps in adopting, implementing and effectively using an interoperable EHR. The seven steps can, in turn, be grouped into three major categories:

- **Adopt**, which includes the sequential steps of Assess, Plan and Select.
- **Utilize**, which involves implementing an EHR product and learning how to use it effectively.
- **Exchange**, including readiness to exchange information electronically with other partners, and implementing regular, ongoing exchange between interoperable EHR systems.

Figure 2. Minnesota Model for Adopting Interoperable Electronic Health Records



Minnesota Statutes, section 62J.495, required the Commissioner of Health to develop a plan for the state to achieve the statutory mandate that all providers and hospitals have in place "an interoperable electronic health records system within their hospital system or clinical practice setting." The plan, *A Prescription for Meeting Minnesota's 2015 Interoperable Electronic Health Record Mandate—A Statewide Implementation Plan*, was developed through the Minnesota e-Health Initiative and released in June 2008. The plan represents a community-wide consensus for advancing interoperable EHR systems in all settings (e.g. clinics, hospitals, local public health, long term care, etc.) across the state.

The Initiative and Advisory Committee have chartered workgroups for the past seven years, involving hundreds of volunteer participants representing a broad range of stakeholders that are committed to advancing the vision of the Minnesota e-Health Initiative and achieving Minnesota's EHR Mandate. The efforts of the e-Health Advisory Committee and workgroups have resulted in the development of critical resources and policy recommendations that have positioned Minnesota and our health care providers and hospitals to qualify for federal funding opportunities to help protect, maintain and improve the health of all Minnesotans through effective use of EHRs and other HIT.

In 2011, the Advisory Committee convened five workgroups to provide recommendations and stakeholder feedback. They are:

- *Adoption and Meaningful Use*
- *Communications and Outreach*
- *Health Information Exchange*
- *Privacy, Legal and Policy*
- *Standards and Interoperability*

In September 2009, the Commissioner of Health established the Minnesota Office of Health Information Technology to coordinate and facilitate an integrated statewide approach to health information technology and health information exchange. The Office was established in coordination with the statutory designation of the Department of Health as the state agency responsible for carrying out duties related to the State Health Information Exchange Cooperative Agreement Program established pursuant to section 3013 of the HITECH Act (See page 23 for additional information).

The Office of Health Information Technology's responsibilities include:

- Carrying out the e-health responsibilities assigned to the Department of Health under Minnesota Statutes, sections 62J.495 to 62J.4982.
- Convening stakeholders to create a comprehensive and unified vision for the use of electronic health records and health information exchange in Minnesota.
- Developing and implementing Minnesota's strategic and operational plan for health information exchange to expand the secure, electronic movement and use of health information among health care organizations according to nationally recognized standards.
- Collaborating with other federally-funded programs designed to promote the adoption and use of electronic health records and health information exchange (e.g., Regional Extension Centers, Medicare and Medicaid incentive programs, the State Office of Rural Health and Primary Care).
- Coordinating across state government to maximize federal and state investments in health information technology and infrastructure development (e.g. the Minnesota Department of Human Services, Minnesota Management and Budget, the Minnesota Department of Corrections, and the Minnesota Department of Commerce).

What has Minnesota Invested?

The work of the Minnesota e-Health Initiative, its Advisory Committee, workgroups and the Minnesota Department of Health over the past seven years has positioned Minnesota well to fulfill the Minnesota EHR mandate and respond to federal programs. Because of Minnesota's upfront investment and planning, leveraging of federal funding to support health information technology and health information exchange, health and health care organizations in the state will receive from $450 - $800 million in federal incentive payments and further advance Minnesota as a national leader in improving the quality of health and health care with the help of health information technology.

Minnesota Policy Recommendations for e-Health

The Minnesota e-health landscape is continuing to evolve rapidly as consumers, providers and health organizations increasingly adopt and use electronic health records (EHRs) and begin to electronically exchange health information. The Minnesota e-Health Advisory Committee has monitored this progress since 2004, and continues to identify needs and make recommendations to support the adoption and effective use of EHRs and other health information technology (HIT).

In 2011, the Minnesota e-Health Initiative, led by the Advisory Committee, developed themes and recommended actions for 2012, based on Minnesota assessment data. The recommendations are part of an ongoing effort to describe the Minnesota e-health landscape and are intended to be used by the Commissioner of Health, the e-Health Advisory Committee, statewide leaders and policy-makers to further the adoption and use of electronic health records (EHRs) and increase health information exchange statewide. The following policy considerations and recommendations are key abstracts from the recommendations made by the Advisory Committee. Minnesota's e-health progress is detailed in the *Minnesota Progress on e-Health* section of this report beginning on page 13.

Adoption of Electronic Health Records Policy Considerations

With the variation in adoption rates of EHRs, targeted/individualized outreach should be directed towards specialty clinics and associated medical groups and non-adopting hospitals. Some recommendations to increase rates of EHR adoption include support for efforts that:

- Champion further standards development in settings that have not been adequately addressed such as local health departments.
- Work individually with non-adopting clinics and hospitals to achieve full adoption of EHRs.
- Encourage and work with all health care providers, particularly those that are eligible for meaningful use incentives, in adopting EHRs.
- Expand assessment activities to better understand the adoption and use in other settings such as chiropractic offices, nursing homes, home health care organizations, jail and correctional facilities, and dental offices.

Electronic Health Record Effective Use Policy Considerations

Effective use of EHRs is an important activity to improve the quality and safety of health and health care. However, rates of EHR effective use lag behind adoption rates and vary by care settings and location. Achieving effective use is complex and is impacted by user behavior, organizational processes and practices, and EHR functionality.

Ongoing efforts are needed to fully realize the potential of an EHR, including:

- More applied research and distribution of best practices regarding effective use including understanding the limitations of current technology.

- Expanded consumer engagement and support for patients' use of "summary of care" or "after visit summary" documents and through personal health records (PHR) so that patients can have access to their health information.
- Resources and commitment devoted to ensure the coordination and open distribution of knowledge, practical tools, tips and templates regarding effective use of EHRs.
- Continue to clarify the knowledge gaps and needs of hospitals, providers, and consumers relating to the Minnesota 2015 Interoperable EHR Mandate and federal rules on meaningful use.

Increased collection, analysis and dissemination of the following activities would support effective use:

- Identify, develop and disseminate workflow improvement tools and tips.
- Identify and disseminate best practices on effective EHR use.
- Support applied research on effective use in a variety of areas including computerized provider order entry (CPOE), e-prescribing, clinical decision support, mobile health applications, data use, public health reporting, and registries.
- Compile and disseminate stories on value and benefits of EHRs and PHRs to consumers and communities.
- Continue to monitor and report on national activities on patient engagement and use of PHRs.

e-Prescribing Policy Considerations

Although e-prescribing rates continue to increase, some prescribing providers, pharmacies and group purchasers/payers are not yet in compliance with the e-prescribing mandate that became effective January 1, 2011. The Minnesota Department of Health has been encouraging those out of compliance to meet the mandate in a variety of ways, including action to:

- Encourage prescribing providers to adopt certified EHR systems that incorporate e-prescribing functionality to maximize their technology investments.
- Encourage prescribing providers to meet meaningful use requirements in order to qualify for incentive payments to offset implementation costs. [E-prescribing is required to meet federal Stage 1 meaningful use criteria for eligible professionals in 2011 and will likely be included in Stage 2 criteria for hospitals to demonstrate by 2014 (see page 24 of this report)].
- Deploy federal funding to help pharmacies adopt and implement electronic prescribing through the Minnesota e-Health Connectivity Grant Program (discussed on page 30 of this report).

Additional actions needed to advance the benefits of e-prescribing in Minnesota:

- Conduct assessment activities to monitor progress and continue to understand how Minnesota is advancing the goals of e-prescribing.
- Continue funding to activities to increase e-prescribing such as grant programs that assist prescribing providers and pharmacies to address barriers to e-prescribing.
- Consider statutory changes to align Minnesota law with updated federal rules that remove barriers to the electronic prescribing of controlled substances and support the goals of improved patient safety through e-prescribing.
- Continue education on e-prescribing options for all parties affected by the e-prescribing mandate.
- In the event that assessment activities indicate an ongoing lack of compliance with the Minnesota e-prescribing mandate, consider enforcement mechanisms (e.g. penalties).

Health Information Exchange Policy Considerations

Review of the available data indicates that electronic health information exchange is occurring, but is most common between affiliated providers and between prescribing providers and pharmacies. Among the primary barriers to HIE in Minnesota is an awareness and understanding amongst health care providers on the options for HIE services, and the requirements, standards and technical capability necessary for EHR interoperability. There is also a need to clarify key issues regarding interoperability with personal health records and ensuring privacy and security concerns are addressed.

In order to continue progress on health information exchange, additional work is needed in Minnesota to:

- Develop guidance materials designed to fill the knowledge deficit, and inform Minnesota health and health care providers of their health information exchange options.
- Coordinate among statewide programs as well as national partners to ensure consistency of information resources.
- Develop resources to support patients in understanding their secure health information options and benefits to participating in health information exchange.
- Develop recommendations on specific instances where health information exchange should be routinely implemented in order to increase patient safety and improve patient outcomes.
- Document the evidence of value and cost savings related to effective use of electronic health records and health information exchange.

Workforce Policy Considerations

Assessment activities in all settings have identified a critical need to expand the e-health workforce and build its capacity. This includes preparing graduates from health informatics

programs with training in specialized skills and training the existing workforce in advanced knowledge of EHR systems. In order to address these gaps, the Minnesota should continue to:

- Align efforts with national initiatives in order to leverage resources and build capacity in Minnesota.
- Align workforce competencies and educational preparation with the needs of clinics, hospitals, and other settings.
- Develop informational and educational opportunities for existing workforce especially in the areas of EHR implementation, health information exchange and organizational change.

The policy considerations outlined in this section represent the consensus recommendation of key stakeholders in Minnesota. An abstract of the key data supporting these recommendations is detailed in the next section, *Minnesota Progress on e-Health*.

Minnesota Progress on e-Health

Minnesota leads the nation in EHR adoption and has high rates of e-prescribing. Once providers have adopted EHRs, continued efforts are needed in order to harness the full capacity of EHRs, and ensure that health and health care personnel within the facility effectively use them. The effective use of EHRs and progress towards achieving health information exchange are moving at a consistent but slower rate because it takes more time to be ready for health information exchange.

Activities to measure and assess e-health progress provide an understanding of the status of adoption and use of EHRs, and other HIT, and health information exchange. The Minnesota Department of Health, in partnership with the Minnesota e-Health Initiative, is responsible for assessing e-health in a variety of health and health care settings.

Progress is measured in these settings in three areas:

- Adoption of Electronic Health Records and other Health Information Technology
- Effective Use of Electronic Health Records
- Health Information Exchange

The next section covers e-health progress made by Minnesota clinics, hospitals, pharmacies, clinical laboratories, nursing homes and local health departments in these three areas.

In Minnesota, all e-health assessment activities adhere to study methods that uniformly collect and routinely share the results of assessment activities statewide. The assessment information is used to:

- Measure Minnesota's status on achieving state and national goals to accelerate adoption and use of electronic health records and other HIT and to achieve interoperability of health information;
- Identify gaps and barriers to enable effective strategies and efficient use of resources;
- Help develop programs and inform decisions at the local, state and federal levels of government; and
- Support community collaborative efforts, including those of the e-Health Initiative and e-Health Advisory Committee.

Methodology for Measuring e-Health

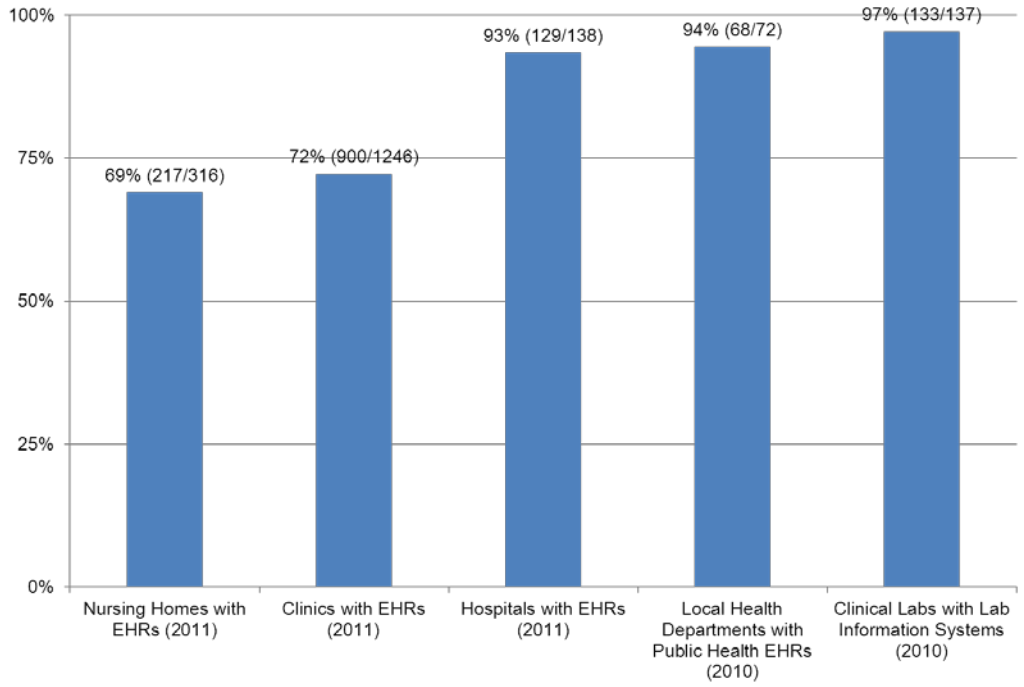
To assure high quality data, all assessment activities use a scientific approach that includes achieving a high response rate. There is extensive community involvement throughout the collaborative process including survey development, community outreach, and interpretation of the data. Detailed information on the methodology for each survey used for this report can be found in the methodology section of each report found at: www.health.state.mn.us/e-health/assessment.html. The assessment activities are supported by temporary funding through

the State Health Information Exchange Cooperative Agreement program that ends in February 2014, and specifically provides dedicated staff to lead, coordinate and support assessment activities. In addition, each survey or domain is supported by external partners and stakeholders.

Adoption of Electronic Health Records and other Health Information Technology

Through a community consensus process, Minnesota was the first state to implement a mandate to accelerate the adoption and effective use of EHRs. The 2015 Interoperable Electronic Health Record Mandate, passed in 2008 by the Minnesota Legislature, requires that "all hospitals and health care providers must have in place an interoperable electronic health records system within their hospital system or clinical practice setting" by January 1, 2015 (Minnesota Statutes, section 62J.495).

Figure 3. Adoption of Electronic Health Records and Related Health Information Technology in Minnesota



Source: Minnesota Department of Health, Office of Health Information Technology, www.health.state.mn.us/e-health/assessment.html

Progress is being made in the adoption of EHRs, and other HIT, as shown in Figure 3. Nursing homes, with an adoption rate of 69%, had a 103% increase in the number of EHRs adopted from a previous survey conducted in 2008. The nursing homes without EHRs generally were smaller, rural, and stand-alone. The barriers for adoption, use and implementation identified by nursing homes were staff training, cost to acquire, and effects on workflow.

In 2011, 900 clinics had an EHR, a 20% increase from 2010. The clinics without EHRs included a significant number of specialty clinics such as ophthalmology, pediatric/adolescent, and psychiatry/behavioral health. Most clinics without an EHR have plans to adopt one in the next one to three years. Common barriers to implementation of EHRs for clinics without an EHR included cost to acquire, return-on-investment, and lack of internal knowledge or technical resources.

Almost all hospitals (93%) reported having an EHR in 2011. This is an increase of 16% from 2010. Of the nine hospitals without an EHR, five were critical access hospitals[4]. Eight of the nine hospitals planned to deploy an EHR in the next 18 months, the remaining critical access hospital was uncertain of future plans regarding EHRs.

Most local health departments (LHDs) had a public health EHR. These systems were used along with other "home-grown" systems, Excel files and Access databases to address the needs of the LHDs. There is limited data available prior to 2011 on LHDs' adoption of EHRs.

Figure 3 shows 93% of Minnesota clinical laboratories had a laboratory information system (LIS). An LIS is a software system used in a clinical lab to computerize laboratory business processes such as test processing, test scheduling, specimen and sample tracking, and quality control and quality assurance management. Of the three clinical labs without an LIS, only one had no plans to purchase an LIS in the next year.

Effective Use

Although there are high adoption rates in Minnesota, the real value from investing in and implementing an EHR, and other HIT, comes from using it effectively. Effective use is about utilizing the full potential of the EHR to achieve the core values of increased patient safety and improved quality of care that accrues both to the organization and to the patients and communities it serves[5].

Some indicators of effective use of EHRs that are available for clinics, hospitals, nursing homes and pharmacies include use of clinical decision support, e-prescribing and computerized provider order system (CPOE) of medications, and tools to monitor and improve the health of high-risk populations. Indicators for effective use were not assessed for local health departments and clinical labs as the focus of the surveys were to measure health information exchange.

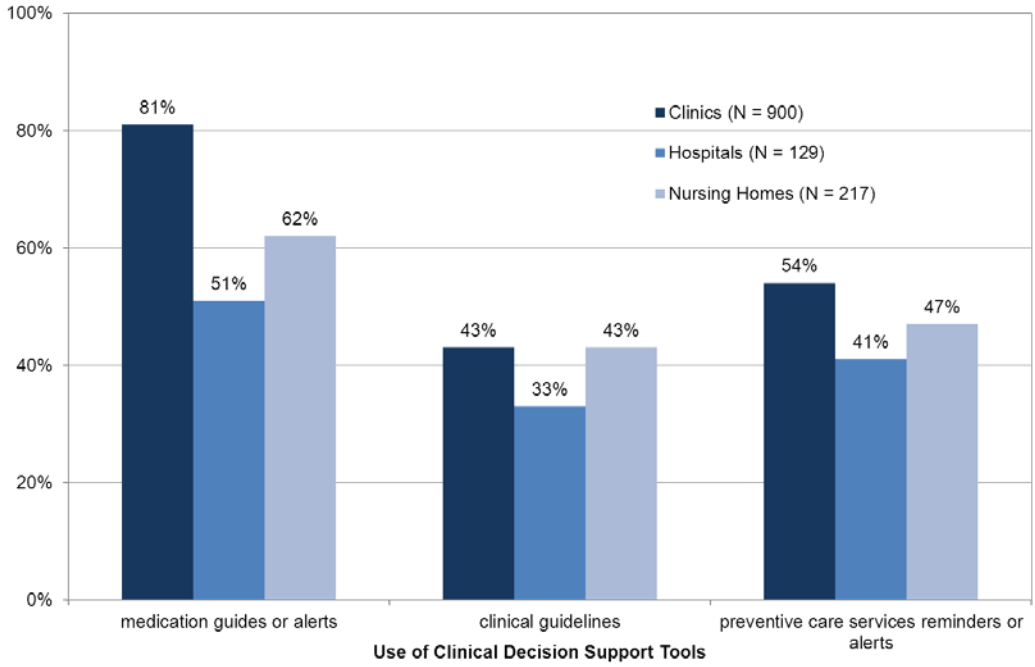
Clinical Decision Support

Clinical decision support (CDS) refers to a function of the EHR that can provide clinicians or patients with clinical knowledge and patient-related information, intelligently filtered or

[4] Critical access hospital is a federal designation for small, rural hospitals.
[5] A Practical Guide to Effective Use of EHR Systems (Guide 4). Accessed: www.health.state.mn.us/ehealth/summit/g4effectiveuse2009.pdf

presented at appropriate times, to enhance patient care. Clinical knowledge of interest could range from simple facts and relationships to best practices for managing patients with specific disease states, new medical knowledge from clinical research and other types of information[6]. A recent study found that the use of clinical decision support tools improved the adoption of evidence-based practices (based on rigorous scientific evidence) for administering blood transfusions in children[7].

Figure 4. Use of Clinical Decision Support Tools by Minnesota Clinics, Hospitals and Nursing Homes (2011)



Source: Minnesota Department of Health, Office of Health Information Technology, www.health.state.mn.us/e-health/assessment.html

There are many types of clinical decision support tools used through the EHR; Figure 4 shows the use of three types. The use of medication guides or alerts was the highest in all settings. Medication guides or alerts include drug allergy alerts, drug-drug interactions and drug dosing support. Less than half of all clinics, hospitals and nursing homes use clinical guidelines. Clinical guidelines are based on patient problem list, gender and age. Using beta blockers for a post-myocardial infarction patient is an example of a clinical guideline. Finally, the use of preventive care services reminders or alerts ranged from between 41% to 54%. A reminder or alert for the flu vaccine is an example of this type of clinical decision support tool. Some barriers to the use

[6] http://www.himss.org/ASP/topics_clinicalDecision.asp

[7] Adams, E.S., Longhurst, C.A., Pageler, N., Widen, E., Franzon, D., & Cornfield, D.N. (2011). Computerized Physician Order Entry with Decision Support Decreases Blood Transfusions in Children. *Pediatrics 127(5): e1112-e1119.*

of clinical decision support tools include training required for staff and the resources to build, implement and maintain the clinical decision support tools.

E-prescribing and Computerized Provider Order Entry of Medication

Electronic prescribing or "e-prescribing" means secure bidirectional electronic information exchange between prescribing providers, pharmacists and pharmacies, and payers or pharmacy benefit managers (PBMs). E-prescribing is an important element in improving the quality of patient care because it enables a provider to electronically send an accurate and understandable prescription directly from the point-of-care to a pharmacy.

In addition to improving the efficiency of prescription routing, when the prescription benefit and formulary information and prescription medication history features are used effectively, patient safety and care are much improved through prevention of medication errors such as the wrong drug, dose or patient. Research has shown that e-prescribing reduced medication error rates by almost sevenfold including near elimination of errors due to illegibility in community-based office practices[8]. A reduction in medication errors due to investments in HIT and HIE from 1997-2007 saved the US Department of Veterans Affairs $4.64 billion by decreasing drug-event related hospitalizations and outpatient visits[9].

The Minnesota mandate for e-prescribing by 2011, passed by the Legislature in 2008, provided a focal point for health and health care stakeholders to work incrementally toward overall interoperability of clinical transactions. This law applies to pharmacists and pharmacies, prescribing providers, and group purchasers/payers. As a result, Minnesota has achieved significant progress, evidenced by more than 13.5 million e-prescribing transactions, including new prescriptions and renewal response messages that occurred during the first 11 months of 2011. There was 40% increase in e-prescribing transactions between January 2011 and November 2011. Other indicators of e-prescribing progress include:

- 90% of pharmacies (393) were actively e-prescribing, sending or receiving electronic new prescriptions, refill requests, or refills in October 2011 compared to 57% three years earlier.
- 68% of clinics (615), 39% of hospitals (50) and 3% (6) nursing homes were e-prescribing in 2011.
- 46% of clinics (415) used patient specific formulary information at point of prescribing, a proxy indicator of group purchasers and payers ability to participate in e-prescribing.

[8] Kausha, R., Kern, L., Barron, Y., Quaresimo, J., & Abramson, E. (2010). Electronic Prescribing Improves Medication Safety in Community-Based Office Practices. *J Gen Tern Med 25(6):530-6.*

[9] Byrne, C. M., Mercincavege, L. M., Pan, E. C., Vincent, A. G., Johnston, D. S., & Middleton, B. (2010). The Value from Investment in Health Information Technology at the U.S. Department of Veterans Affairs. *Health Affairs 29(4):629-638.*

Another use of the EHR that can reduce medication errors is computerized provider order entry (CPOE). This functionality electronically enters a provider's orders for medications, which are then augmented by clinical decision support tools that allow for the orders to be compared against such items as standards for dosing and checks for allergies. The provider is then alerted to potential problems[10] prior to completing the orders. A study conducted in a community-based, multispecialty health system found that CPOE reduced the odds of medication errors by 70%. The types of errors with the greatest reduction in odds of medication errors were illegibility (97%), inappropriate abbreviations (94%), information missing (85%), and wrong drug strength (81%)[11]. Less than half of hospitals and nursing homes are currently using CPOE for medication but many indicated plans to start using in the next year to 18 months. Common barriers to CPOE include the amount of staff training- some providers use handwritten or paper orders (a behavioral resistance of providers) and/or that it requires resources to build, implement, and maintain.

Monitor and Improve the Health of High-Risk Populations

The ability of health and health care providers to identify high-risk populations is significant because it allows for targeted outreach for prevention and treatment, which can reduce the burden of disease. When this functionality, sometimes called care or disease registries, is part of an EHR, a provider can generate a report of patients by condition, such as diabetes or asthma. This can be a powerful tool for addressing many population health issues. For example, the care team can better coordinate care and provide advanced follow-up and treatment services that help assure that individuals are current on medications or other services. A 2011 study in the New England Journal of Medicine found that compared to sites using paper medical records, "[a]cross all insurance types, EHR sites were associated with significantly higher achievement of care and outcome standards and greater improvement in diabetes care."[12] Another study found that providers in primary care settings using EHRs "with clinical decision support may mitigate blood pressure control disparities between whites and blacks, which may in turn reduce racial/ethnic disparities in morbidity and mortality from cardiovascular disease."[13]

Most clinics (94%) and hospitals (80%) with EHRs were able to generate reports for high-risk populations. The common conditions or high-risk populations for which reports can be generated include diabetes, depression, vascular disease and asthma. Other uses of the EHR that increase a clinic's or hospitals' ability to manage the health of high risk populations include identifying and reminding patients of preventive services and/or routinely sending patients

[10] Adapted from United States Department of Health and Human Services. Office of the National Coordinator for Health Information Technology (ONC) Glossary: http://www.hhs.gov/healthit/glossary.html

[11] Devine, E.B., Hansen, R.N, Wilson-Norton, J.L, Lawless, N.M., Fisk, A.W., Blough, D.K., Martin D.P., & Sillivan, S.D. (2010). The Impact of Computerized Provider Order Entry on Medication Errors in a Multispecialty Group Practice. *J Am Med Inform Assoc 2010 (17): 78-84.*

[12] Cebul, R.D., Love, T.E., Jain, A.K., & Hebert, C.J. (2011). Electronic Health Records and Quality of Diabetes Care. *New England Journal of Medicine 365(9):825-33.*

[13] Samal, L., Lipsitz, S.R., Hicks, L.S. (2012). Impact of Electronic Health Records on Racial and Ethnic Disparities in Blood Pressure Control at US Primary Care Visits. *Archives of Internal Medicine 172(1): 75-76.*

reminders for follow-up appointments; tracking tobacco smoking; and identifying patient-specific education resources.

Patient Access to Electronic Health Information

When patients and their families have direct access to their health information and records, they are better able to track their care and, in some cases, communicate electronically and securely with their health care provider(s). With access to past medical tests, procedures and results, a patient or resident can be more empowered to ask questions and get the information necessary to ensure safe and appropriate care. There are similar benefits when caregivers have access to the health information and records of a patient. In addition, it can reduce the amount of time and costs of requesting, printing, copying and carrying the information.

Slightly more than one-third (315/900) of ambulatory clinics in Minnesota with EHRs offered online personal health records, an increase of 16 percent from 2010. Other methods used by clinics for patient access to health information include connecting through a web portal or on a physical device. Meanwhile, half of Minnesota hospitals with an EHR were capable of providing patients with an electronic copy of their information that included diagnostic test results, problem lists, medication lists, allergies and discharge summaries. The most common methods for providing the information were USB drives or other physical devices and through a patient portal. Only 10% of nursing homes provide a resident and/or their family access electronic to health information using a personal health record. Another 5% used secure email with 2% using a physical or portal access.

Health Information Exchange

The goal of health information exchange (HIE) is to help make health information available, when and where needed, to improve the quality and safety of health care. For example, research has shown that "[a]ccess to additional clinical data through HIE in emergency department settings is associated with net societal saving."[14] Organizational support of HIE would also confer both financial and clinical benefits across a wide array of care settings.

> *"...information should follow the patient, and artificial obstacles – technical, business related, bureaucratic – should not get in the way."*
>
> Dr. David Blumenthal
> Director, Office of the National Coordinator, U.S. Department of Health & Human Services
> 2009-2011

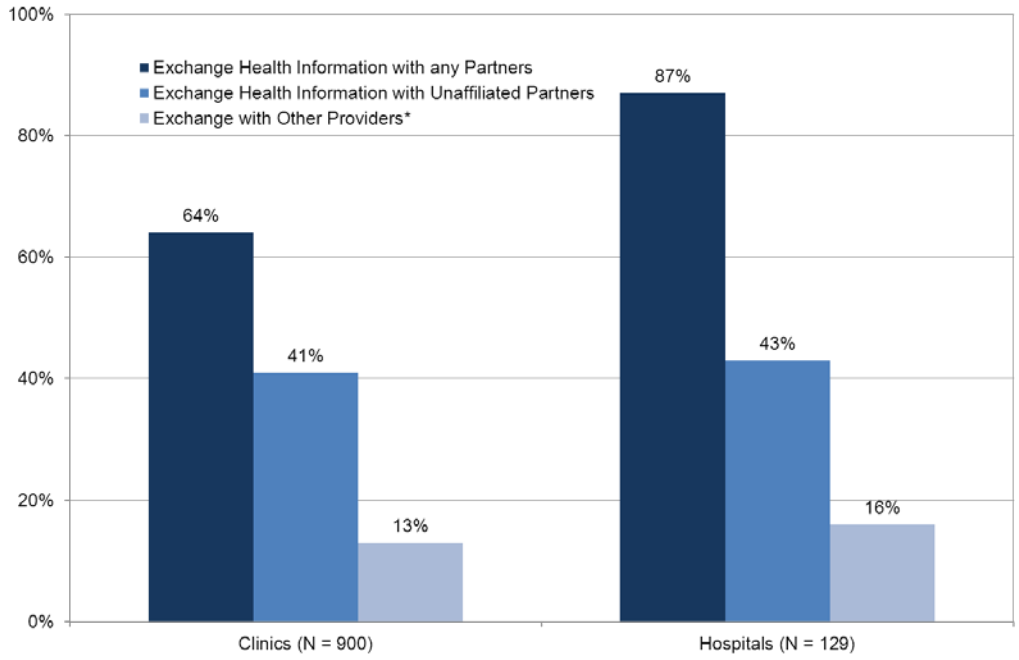
[14] Frisse, M.E., Johnson, K.B, Nian, H., Davison, C.L., Gadd, C.S., Unertl, K.M., Turri, P.A., Chen, Q. (2011). The Financial Impact of Health Information Exchange on Emergency Department Care. *J Am Med Inform Assoc. doi: 10.1136/amiajnl-2011-000394 [published Online First: 9 November 2011].*

Minnesota supports an open market strategy for secure health information exchange that allows for private sector innovation and initiative, and uses government oversight to assure fair practices and compliance with state privacy protections. As a result, many efforts are underway throughout Minnesota to enable the secure electronic exchange of clinical information between organizations using nationally recognized standards.

In 2011, 87% of hospitals and 64% percent of clinics electronically exchanged health information with any partners (Figure 5). The rates decrease for electronic exchange with unaffiliated partners and other providers, which includes nursing homes, hospice and home health providers. Currently, most of the health information exchange happening in Minnesota is primarily between hospitals and clinics in the same system or with affiliated partners.

Slightly more than one-third of nursing homes were capable of exchange but routine exchange is limited. Common barriers to exchange identified by hospitals and clinics include competing priorities, cost of subscription rates for exchange services, and lack of or difficult access to technical support/expertise. Barriers for nursing homes were that capabilities of others to exchange was unknown or limited, and EHRs unable to exchange.

Figure 5. Electronic Exchange of Health Information in Minnesota Clinics and Hospitals (2011)



*Other providers includes any provider that is not a clinic or hospital, can include nursing homes, assisted living, home health providers
Source: Minnesota Department of Health, Office of Health Information Technology, www.health.state.mn.us/e-health/assessment.html

Almost three-fourths of local health departments were electronically exchanging health information in 2011. Their most common exchange partners were the Minnesota Department of Health and Minnesota Department of Human Services. Although only 4% of local health

departments were exchanging with ambulatory clinics and hospitals, a majority of local health departments identified a need to exchange with them because they have patients/clients in common. Barriers to health information exchange among local health departments include lack of nationally certified EHR systems in the local health department setting and the lack of widespread adoption of common standards by local health departments.

Exchange of Care Summary Records

The exchange of care summary records supports transitions of care and referrals by providing a standard set of clinical information including diagnostic test results, problem lists, medication lists, and medication allergy lists.

Thirty-five percent of clinics were providing care summaries for most transitions of care and 29% for referrals. Slightly less than half of hospitals (49%) were electronically exchanging care summaries using the national standard CCR (Continuity of Care Record) or CCD (Continuity of Care Document) formats. Thirteen percent of clinics and 39% of hospitals were using the national standard HL7 CCD (HL7 is a type of standard for moving clinical data between independent medical applications, such as an EHR). Nursing homes did not report on exchange of care summary records, however, 97% reported a need to receive a care summary record through electronic exchange.

Exchange of Laboratory Data

The electronic exchange of structured lab orders and results is essential to achieving the full value and benefits of EHRs. This type of exchange involves components including storing and sending test names and results, exchange of lab information between partners, and storing structured lab results in the EHR using national standards.

Minnesota is making progress in this area as most labs used electronic methods to receive test orders and send results. Over 80% of clinics and hospitals were able to use the EHR to retrieve or view lab results including structured data. Although only 18% of nursing homes were able to view lab results, a quarter indicated a plan to do so in the next 18 months.

Public Health Information

Exchange of public health information involves submitting specific information to the Minnesota Department of Health and other public health authorities as required to support prevention and control efforts that reduce the burden of mortality and morbidity, improve the delivery of care and save costs. According to the U.S. Department of Health and Human Services, the reporting of both immunization record data and lab reports to state public health agencies can protect communities from potential disease outbreaks[15]. When state agencies have access to this data, they can more accurately and efficiently identify gaps in care, especially for underserved

[15] United States Department of Health and Human Services, Health Resources and Services Administration. http://www.hrsa.gov/healthit/toolbox/HealthITAdoptiontoolbox/MeaningfulUse/whatistheclinicalcase4objs.html. Accessed 19 January 2012.

populations. It can also allow the agencies to communicate with health care providers on disease outbreaks, effective treatments and disease trends.

Slightly more than half of ambulatory clinics (51%) and hospitals (54%) were capable of electronically submitting data from the EHR to the Minnesota Immunization Information Connection (MIIC), a statewide immunization registry. As more providers and provider organizations submit immunization data to the state registry, they will be able to access better information on individual immunization coverage, practice-wide coverage, and accurate forecasts for patients as well as guidance on new vaccines and immunization schedules.

Forty percent of hospitals were capable of electronically submitting reportable lab results from the EHR to public health agencies while 14% of clinical labs were electronically reporting lab results to the Minnesota Department of Health. As these numbers increase the timeliness of disease outbreak notification will improve, which in turn will allow a more rapid response to control outbreaks. This is the first step toward the bi-directional movement of information electronically that would enable health departments to issue electronic alerts that can be embedded in an EHR as a resource for clinicians.

Coordination with National Activities

In 2009, Congress passed the Health Information Technology for Economic and Clinical Health Act (HITECH Act). The HITECH Act authorized new financial incentives through the Medicaid and Medicare programs to ensure that the adoption and use of health IT contributes to a more efficient, effective and safe health care system that achieves improved health outcomes. Current estimates indicate that Minnesota providers and hospitals could access between $450-$800 million in incentives through Medicare and Medicaid.

In addition to the incentive programs, the HITECH Act provided $2 billion to the Office of the National Coordinator for continuing health information technology policy and standards development, and the implementation of several additional programs to support providers and hospitals in becoming meaningful users of electronic health records. See Table 1 for a brief description of each program, the intended purpose and the approximate amount of funding available for Minnesota.

Table 1: Key Programs Established Under the HITECH Act (2009)

HITECH Act Program	Minnesota Recipient	Funding
Centers for Medicare and Medicaid Services (CMS) Incentives for "meaningful use" Provides Medicare and Medicaid incentives for certain health care providers and hospitals that meet criteria established by CMS for the meaningful use of certified EHRs. Medicare providers who do not become meaningful users of EHRs will receive penalties in the form of payment reductions beginning in 2016.	Eligible Professionals and Hospitals in Minnesota	$450-$800 million* *estimated
Regional Extension Centers Provides funding for the establishment of Health Information Technology Regional Extension Centers that offer technical assistance, guidance and information on best practices to support and accelerate health care providers' efforts to become meaningful users of Electronic Health Records (EHRs).	Key Health Alliance: Stratis Health, The College of St. Scholastica, and Rural Health Resource Center	$19 million
Health Information Exchange These programs support states in establishing secure health information exchange (HIE) capacity among health care providers and hospitals in their jurisdictions, including establishing and implementing appropriate governance, policies, and network services within the broader national framework to rapidly build capacity for connectivity between and among health care providers.	MN e-Health Connect MDH	$9.6 million

HITECH Act Program	Minnesota Recipient	Funding
HIT Workforce Development These grant programs support the development of Curricula, training programs and competency testing for a competent and prepared health information technology workforce	University Partnership for Health Informatics (UP-HI) Normandale Community College	$5 million $800,000
Beacon Community Program Provides funding to communities to build and strengthen their health information technology infrastructure and exchange capabilities to demonstrate the vision of meaningful health IT.	Southeast MN Beacon Community: Mayo & Partners	$12 million
Strategic Health IT Advanced Research Projects (SHARP) Achieving breakthrough advances in health information technology to address key problems such as Secondary Use of EHR Data.	Mayo & Partners	$15 million

Meaningful Use

In order to access federal HITECH incentives, providers and hospitals must demonstrate "meaningful use" of an EHR system. Congress established three measures of meaningful use in legislation: the use of nationally certified EHR systems that include e-prescribing, the submission of clinical quality measures and the electronic exchange of health information. Further definition and guidance were released in a proposed rule by the federal Department of Health and Human Services on January 13, 2010. CMS proposed a phased, incremental approach of adoption of certified EHR technology across three stages. CMS described these stages as reflecting reasonable criteria based on currently available technology and provider practice experience that build over time to a more robust definition of meaningful use, consistent with anticipated development of technology and health IT infrastructure. The current rule only specifies objectives and measures for Stage 1. CMS is currently establishing Stage 2 and plans to establish Stage 3 criteria through rulemaking processes. CMS describes each Stage as follows:

- Stage 1 meaningful use criteria focus on: 1) capturing health information in a coded format, 2) using the information to track key clinical conditions; 3) communicating captured information for care coordination purposes; and 4) reporting of clinical quality measures and public health information.
- Stage 2 criteria were proposed to expand upon Stage 1 criteria in the areas of disease management, clinical decision support, medication management, support for patient access to their health information, transitions in care, quality measurement, research, and bi-directional communication with public health agencies. The Department of Health and Human Services (HHS) has postponed the start of Stage 2 meaningful use from its original 2013 start date to 2014. The final recommendations for criteria to be

expected of clinicians for Stage 2 meaningful use is still under review, with a notice of proposed rulemaking released for public comment in February 2012.

- Stage 3 criteria will likely focus on achieving improvements in quality, safety and efficiency, focusing on decision support for national high priority conditions, patient access to self-management tools, access to comprehensive patient data and improving population health outcomes. CMS expects to propose Stage 3 criteria by the end of 2013.

The definition of meaningful use at each stage is important because it will be a key measure that determines provider eligibility to receive incentive funds and will have an impact on Minnesota providers and hospitals. The Minnesota e-Health Advisory Committee and related workgroups are actively monitoring proposals related to stage 2 and stage 3 and will be providing comment at every opportunity to ensure the needs of Minnesota's stakeholders are conveyed to federal policy-makers.

As of December 2011, Minnesota hospitals and eligible providers have received **$33.6 million** in meaningful use incentive payments.

Center for Medicare & Medicaid Services
YTD Combined Medicare Medicaid Payments by State

While the Centers for Medicare and Medicaid Services will determine the requirements for Medicare incentives, federal law gives states some flexibility for determining the definition of meaningful use for Medicaid incentives. In Minnesota, the Department of Health and the Department of Human Services work closely with the Minnesota e-Health Initiative on an on-going basis to respond to Federal rulemaking activity and to explore options for tailoring the requirements to meet the needs of the Minnesota Medicaid program.

As a part of the broader e-health efforts, the Minnesota e-Health Initiative views the definition of meaningful use as part of our framework for effective use of electronic health records. This approach recognizes that the real value in EHR systems comes from using them effectively to support efficient workflows and effective clinical decisions, which have a positive and lasting effect on the health of individuals and populations.

Minnesota's Approach to Health Information Exchange: Market-based with Government Oversight

In 2010, Minnesota enacted legislation requiring all organizations that provide HIE services for the transmission of clinical meaningful use transactions to apply for a Certificate of Authority to operate as a Health Information Exchange (HIE) Service Provider in Minnesota, in accordance with Minnesota Statutes, sections 62J.498-62J.4982. The HIE Oversight Law has many benefits for Minnesota health and health care providers and consumers, including:

- Ensuring that information follows the patient across the full continuum of care;

- Preventing the fragmentation of health information that can occur when there is a lack of interoperability or cooperation between health information exchange service providers;
- Ensuring that organizations engaged in health information exchange are adhering to nationally recognized standards;
- Ensuring that health information exchange service providers properly protect patient privacy and security; and
- Ensuring that Minnesota has a reliable health information exchange infrastructure in place to allow Minnesota providers and hospitals to achieve meaningful use incentives.

Minnesota e-Health Connect

In 2011, the Minnesota Department of Health (MDH) Office of Health Information Technology received $9.6 million from the Office of the National Coordinator for Health Information Technology (ONC) to implement the State HIE Cooperative Agreement program over three years. MDH is using these funds to expand HIE capacity, support secure electronic exchange of health information statewide and help healthcare providers achieve Minnesota's mandate for interoperability by 2015.

To ensure that all Minnesota providers and hospitals have secure health information exchange options for achieving meaningful and robust interoperability, an assessment of Minnesota's health information exchange landscape was conducted by MDH to arrive at strategies to address the gaps in technical infrastructure, assessment/information and connectivity, which can be found in Minnesota's Strategic and Operational Plans for Health Information Exchange at: http://www.health.state.mn.us/divs/hpsc/ohit/hiemn.html.

Technical Infrastructure: The strategies being implemented support the development of technical infrastructure to ensure interoperability between disparate mechanisms for health information exchange offered by State-Certified Health Information Exchange Service Providers and used by providers in the Minnesota market. The development of this technical infrastructure is necessary to support providers in meeting meaningful use and Minnesota's goal for robust interoperability by 2015. The strategies ensure coordination and connectivity between State-Certified Health Information Exchange Service Providers.

Assessment and Information: The strategies also support a comprehensive assessment of Minnesota's health information exchange landscape. That information is used to develop and provide resources to health care providers and hospitals on the benefits of participating in health information exchange, assess their readiness and awareness of options for health information exchange, and support patients in understanding their secure health information options and benefits to participating in health information exchange.

Connectivity: Strategies to support Minnesota's State-Certified Health Information Exchange Service Providers establish targeted outreach programs include performance-based incentives for enrolling providers and expanding connectivity. Minnesota's health care providers and hospitals will also benefit from direct financial support to encourage connection to the network

of certified health information service providers Minnesota. For more information on Minnesota's e-Health Connectivity for HIE Grant Program, see page 30.

Ensuring Statewide Coordination on Health Information Technology and Heath Information Exchange Initiatives

The State Health Information Exchange Cooperative Agreement program requires that states play an active role to ensure coordination of health information technology and health information exchange initiatives at the state level. The following is a description of coordination activities currently in progress that will be continuing in 2012.

Coordination with Minnesota Health Care Reform Initiatives

The effective use of electronic health records is a critical tool in moving forward on Minnesota's health care reform initiatives. MDH has been working to coordinate e-health and health reform efforts, particularly as it relates to the assessment of the status of EHR adoption and use. Minnesota health reform legislation, passed in 2008, included provisions for a Minnesota Statewide Quality Reporting and Measurement System which requires that all physician clinics complete an HIT ambulatory clinic assessment survey. Health reform rules, established in the fall of 2009, require Minnesota acute care hospitals to submit information on their activities related to the adoption and effective use of EHRs and other health information technology. The surveys that measure these health care reform components can be found at www.health.state.mn.us/e-Health.

These surveys, in conjunction with other surveys and data, provide an important profile of the information necessary to demonstrate progress on Minnesota's e-health goals and to begin measuring the impact that the effective use of EHRs is having on the transformation of health and health care in Minnesota. The section of this report titled *Minnesota Progress on e-Health* provides a summary of the data currently available.

Coordination with the Regional Extension Assistance Center for HIT (REACH)

Key Health Alliance, a partnership between Stratis Health, the National Rural Health Resource Center, and The College of St. Scholastica, operates the Regional Extension Assistance Center for HIT (REACH) for Minnesota and is receiving HITECH Act funding to provide technical assistance to health care providers and hospitals in the implementation and meaningful use of electronic health records. REACH partners have a long history of providing assistance and support in the adoption and effective use of health information technology while focusing on the needs of rural and underserved populations. REACH has demonstrated a commitment to utilizing the existing e-health infrastructure in Minnesota for planning and feedback, including working with MDH and the e-Health Advisory Committee and its workgroups.

Coordination with Minnesota Department of Human Services

Minnesota's State Medicaid HIT Plan will accelerate the development of Medicaid's capacity to facilitate care coordination and improved quality and efficiency. To facilitate an integrated

approach to health information technology in Minnesota, Minnesota's Strategic and Operational Plan for Health Information Exchange and State Medicaid HIT Plan are aligned and consistent. The Office of Health Information Technology and the Department of Human Services (DHS) have leveraged the existing organizational infrastructure and common stakeholder forums of the Minnesota e-Health Initiative and the e-Health Advisory Committee to ensure integration and coordination between the agencies. DHS and MDH have worked collaboratively to produce an implementation strategy for the Medicaid Incentive Payments that leverages existing expertise from both agencies.

Coordination with Minnesota Office of Rural Health and Primary Care

The Minnesota Department of Health's Office of Rural Health and Primary Care (ORHPC) promotes access to health care in rural and underserved communities. Regular coordination with ORHPC programs and activities helps ensure that resources effectively support providers in rural and underserved communities to achieve meaningful use and capacity for health information exchange.

Federal programs provide both broad rural health support and targeted assistance for health information technology, including:

- *The* Medicare *Rural Hospital Flexibility Program (HRSA)* supports and strengthens rural systems of care with the Critical Access Hospital as the hub by promoting quality and performance improvement, emergency medical services and encouraging health information technology adoption through grants and technical assistance.
- *The Small Rural Hospital Improvement Program (HRSA)* supports small rural hospitals through grants for costs related to health delivery systems changes including health information technology investments.
- *The State Office of Rural Health (HRSA) and Primary Care Office (HRSA)* grants support access to quality health care in rural and underserved urban communities through coordination of federal and state resources.

State grant programs that broadly support health care access and may include health information technology investments for rural and safety-net providers include:

- *Community Clinic Grant Program*
- *Rural Hospital Transition Planning Grant Program*
- *Rural Hospital Capital Improvement Program*

Finally, OHIT and ORHPC have directly collaborated on federal and state grant and loan programs specifically targeted to rural and underserved communities in order to leverage the grant-making expertise available in ORHPC and ensure that limited financial resources are targeted appropriately. Those include the $8.3 million *e-Health Grant Program* (2006- 2008), the current $6.3 million revolving *Electronic Health Record Loan Program* and the federally supported *Connectivity Grants for Health Information Exchange Program,* described further below.

Minnesota EHR Revolving Loan Program

In 2006 and 2007, the Minnesota Legislature appropriated a total of $14.6 million in grants and loans for adopting interoperable EHRs, health information technology or health information exchange (M.S. 144.3345 and 62J.496).

The Minnesota EHR Loan Program[16], administered by the MDH Office of Rural Health and Primary Care, began with $6.3 million in 2008, for financing and supporting interoperable electronic health records in rural hospitals, community clinics, primary care clinics in towns with populations under 50,000, nursing facilities and other health care providers. Loans are required to be repaid in six years at zero percent interest.

In the initial round, applications for over $14 million were received. Of those, seven loans totaling $6.3 million went to four Critical Access Hospitals, two rural clinics and one urban community clinic, with loan amounts ranging from $154,000 to $1,500,000.

Repayments to the revolving account beginning in July 2010 allowed the program to re-open in early 2011, with approximately $1.2 million available. Eleven applications were received; seven loans were awarded to safety net providers. Further loan cycles are anticipated in upcoming years as additional repayments occur, with the number of loans and maximum loan amount dependent upon the available funds.

Minnesota e-Health Connectivity Grants for Health Information Exchange

With funding under the State Health Information Exchange Cooperative Agreement Program, the 2011 Minnesota e-Health Connectivity Grant Program for Health Information Exchange provided modest resources to 1) help clinics and hospitals in rural and underserved areas of Minnesota achieve health information exchange capability, and 2) increase the number of rural Minnesota pharmacies capable of accepting electronic prescriptions.

In the round of grants made in November 2011 through December 2011, grants of up to $10,000 went to health care facilities for costs associated with planning for health information exchange and/or establishing connectivity with a State-Certified Health Information Exchange Service Provider. Rural pharmacies in cities under 10,000 that were not able to accept electronic prescriptions or meet requirements for exchange without updating existing pharmacy systems, also received funding up to $10,000 to upgrade hardware or software for e-prescribing functionality and/or establishing connectivity with a State-Certified Health Information Exchange Service Provider.

As of December 31, 2011, 27 applications were approved for a total of $385,782 in grant funds to the following organizations (see map on page 32, Figure 6):

[16] Minnesota Statutes 62J.496

1. Ada Pharmacy, Ada
2. Bigfork Valley, Bigfork
3. Casey Drug, Chisholm
4. Community Memorial Hospital, Cloquet
5. Community-University Health Care Center, Minneapolis
6. Cook County Hospital District, Grand Marais
7. Cook Hospital, Cook
8. Cuyuna Regional Medical Center, Crosby
9. Ely Community Pharmacy, Ely
10. Essentia Health, Duluth (22 clinic sites)
11. Essentia Health Sandstone, Sandstone
12. FirstLight Health System, Mora
13. Glacial Ridge Health System, Glenwood
14. Howard Lake Drug, Howard Lake
15. Mankato Clinic, Mankato (7 clinic sites)
16. Mercy Hospital, Moose Lake
17. Murray County Medical Center, Slayton
18. Northern Minnesota Network, Isanti (4 Federally Qualified Health Center clinics)
19. Northfield Hospital, Northfield
20. Parkview Medical Clinic, New Prague
21. RC Hospital and Clinics, Olivia and Hector (2 grants)
22. Raiter Clinic, LTD, Cloquet
23. Riverwood Healthcare Center, Aitkin
24. Saint Elizabeth's Medical Center, Wabasha
25. Wabasha Pharmacy, Wabasha
26. Zumbrota Main Street Pharmacy, Zumbrota

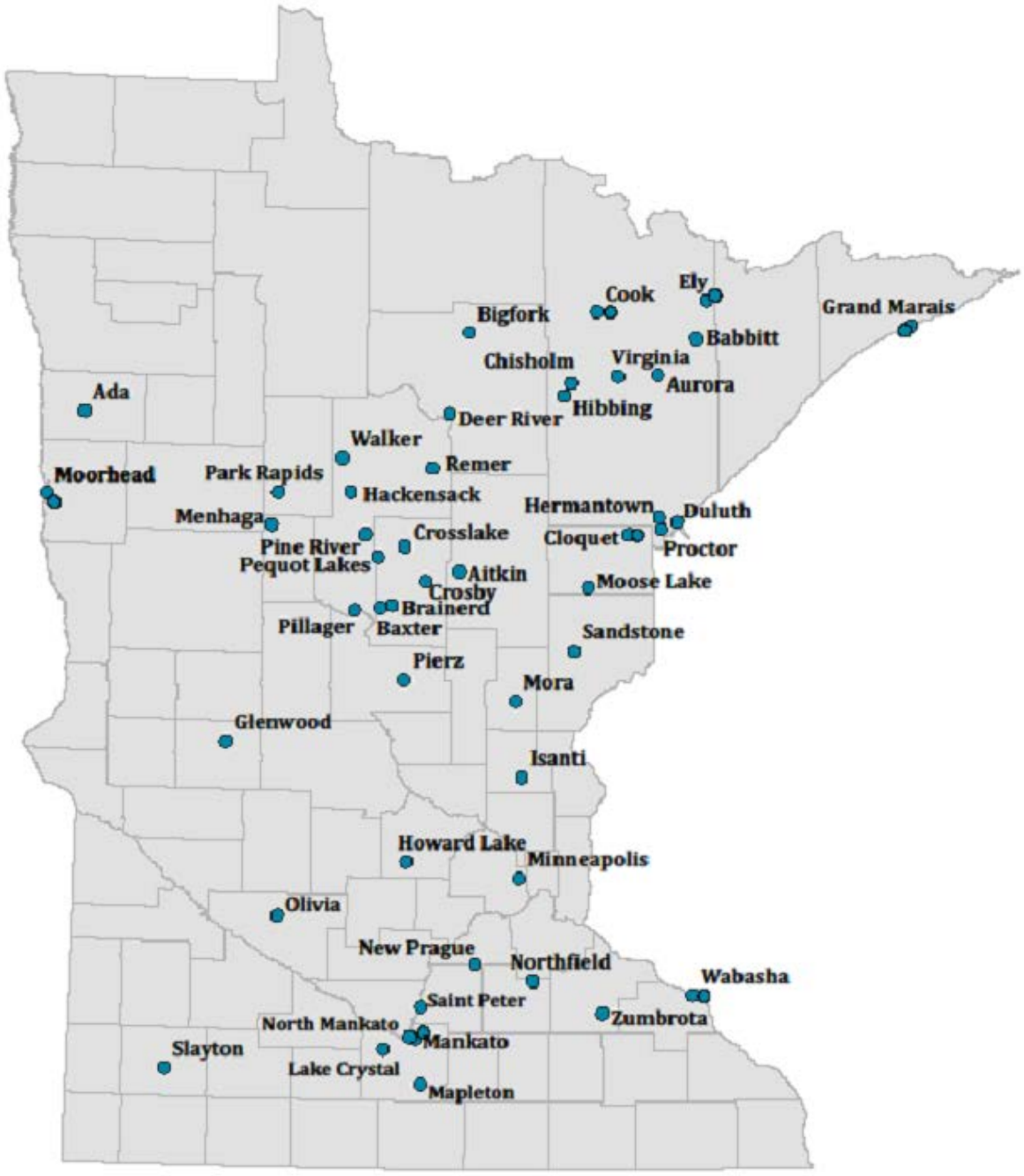
The Minnesota e-Health Connectivity Grant Program is a multi-year program; the 2012 program guidance and applications are targeted for release in early April and will be focused on connectivity gaps identified through Minnesota e-Health assessment activities.

Looking ahead

Minnesota's EHR grant and loan programs have helped Minnesota's small health care providers move toward adoption and effective use of EHRs by addressing a central barrier: lack of capital. Minnesota state government has been a leader in responding to that barrier. Funds for implementation of electronic health records have helped small providers get ready to achieve meaningful use of their EHR, be prepared to access significant Medicare and/or Medicaid incentive payments under HITECH (ARRA), and avoid possible Medicare penalties for failure to achieve meaningful use.

The need for capital to make the necessary investments remains high. Continued investment will assist Minnesota's small health care providers to achieve interoperable electronic health records across the continuum of care, meet federal meaningful use requirements and recoup investments through Medicare-Medicaid meaningful use incentive payments.

Figure 6. Geographical Distribution of e-Health Connectivity Grants for Health Information Exchange (December 31, 2011)



Report on 2011 Minnesota e-Health Initiative Activities

The Minnesota e-Health Initiative is involved in multiple activities that engage the public and a broad range of stakeholders in making policy recommendations related to health information technology topics in Minnesota. Activities include:

- Minnesota e-Health Advisory Committee and Stakeholder Engagement
- Monitoring and Providing Feedback on Developments in Privacy and Security Policy
- Minnesota e-Health Standards and Interoperability Activities
- Coordinated Responses to National Heath Information Technology Policy Activities
- Publications and Educational Activities

Minnesota e-Health Advisory Committee and Stakeholder Engagement

The Minnesota e-Health Initiative is guided by a 25-member advisory committee, which represents stakeholders' commitment to work together to identify and address barriers of common interest, prioritize resources, and achieve Minnesota's mandates. The Commissioner of Health consults with the Minnesota e-Health Advisory Committee to ensure coordination between state, regional and national efforts to support and accelerate efforts to effectively use health information technology. Quarterly meetings are open to the public; in 2011, an average of 60 individuals attended each meeting.

Minnesota e-Health workgroups provide recommendations and stakeholder feedback on statewide HIT initiatives, as well as actively monitor national activity related to health information technology and submit statewide coordinated responses to provide input on policy development, as necessary. All workgroup meetings are open to the public and participants include private citizens, representatives from health care providers, local public health and government agencies. Over 300 stakeholders participated in 23 workgroup meetings activities during 2011.

The Minnesota e-Health Advisory Committee charged its 2011 workgroups to work jointly to describe the Minnesota e-health landscape. This was accomplished by reviewing the state assessment data to identify and evaluate emerging e-Health themes, develop recommendations to further the adoption and use of electronic health records (EHRs) as well as increase health information exchange statewide. Recommendations and recommended actions pertain to six topic categories:

- Adoption of Electronic Health Records
- Effective Use of Electronic Health Records
- Health Information Exchange
- e-Health Assessment and Evaluation
- e-Health Policy
- e-Health Workforce

Common themes were identified related to high adoption rates for hospitals and clinics and the need to address practice settings where adoption rates are lower, and improve effective use in all care settings. Many of the recommendations are specific to fostering statewide collaboration among organizations to help MDH develop practical guidance, promote the sharing of best practices, and encourage lead organizations in Minnesota to report activities to the Advisory Committee to ensure coordination of efforts.

Monitoring and Providing Feedback on Developments in Privacy and Security Policy

The Privacy, Legal and Policy Workgroup monitors and assesses privacy-related policies as well as makes recommendations on mechanisms to ensure compliance with state and federal privacy and security requirements for health information technology. The workgroup also supports providers and other health stakeholders in the implementation of privacy criteria established to qualify as a "meaningful user" of an EHR under the HITECH Act. The group is further tasked with ensuring that the privacy needs of Minnesota Medicaid, consumers, providers and other stakeholders are fully considered in the development of the statutory framework for HIE and the development of informational and educational resources.

In 2011, the Privacy, Legal and Policy Workgroup participated in the Upper Midwest Health Information Exchange State Health Policy Consortium (UM HIE) project as the stakeholder review group for Minnesota. The UM HIE project was funded by the Office of the National Coordinator for Health Information Technology to find ways to ensure privacy and address barriers to exchanging patient health information across state borders. The Consortium, led by Minnesota and including representatives from Illinois, North Dakota, South Dakota and Wisconsin, focused on how to accomplish provider-to-provider exchange of patient health information for treatment purposes, given the differences in consent-to-disclosure laws in these five states. UM HIE project details and tools developed for providers for the purpose of exchanging patient information are available at http://www.health.state.mn.us/divs/hpsc/ohit/umhie.html.

Minnesota e-Health Standards and Interoperability Activities

Minnesota e-Health standards are a requirement for electronic exchange of health information and achieving interoperability as required by the Minnesota 2015 mandate. Interoperability of electronic health records systems in Minnesota means the ability of two or more EHR systems or components of EHR systems to exchange information electronically, securely, accurately and verifiably, when and where needed. The Minnesota vision for exchange is to electronically move health information securely between disparate systems in order to improve health care quality, increase patient safety, reduce health care costs and improve public health, consistent with Minnesota's principles of health reform.

The Commissioner of Health has the responsibility to identify and recommend standards for health data transactions and the types of information exchanged. The Minnesota e-Health

standards work coordinated through the Minnesota Department of Health includes recommendations and resources, which are released annually and published in a guide. The current guide, "Standards Recommended to Achieve Interoperability in Minnesota," was updated in August 2011, and is available at http://www.health.state.mn.us/e-health/standards/g2standards2011.pdf.

For 2011-2012, the Minnesota e-Health Standards Workgroup has been charged to:

- Identify and recommend nationally recognized standards, implementation specifications and certification criteria necessary to facilitate and expand the secure electronic movement and use of health information among organizations in Minnesota.
- Review and comment on standards, implementation specifications and certification criteria related to the requirements of "meaningful use" and recommend resources and actions that will help increase implementation of these standards.

Additional details of the workgroup are available at http://www.health.state.mn.us/e-health/wgshome.html.

Coordinated Responses to National Heath Information Technology Policy Activities

The MDH Office of Health Information Technology (OHIT) staff has been working in conjunction with the e-Health Advisory Committee and workgroups to coordinate Minnesota activities with national health information technology activities, including coordination between state and federal health information technology activities as required by Minnesota Statutes, section 62J.495, subdivision 4. One important aspect of this effort is to help ensure Minnesota is responding in a timely and appropriate way to federal requests for information and feedback. To seek and gather stakeholder input, OHIT has engaged in a coordinated and extensive communications effort to inform affected stakeholders, individuals and organizations involved in federal health information technology activities. While these activities are identified in statute, many hours of volunteer effort were committed to contribute to these efforts. Coordination work includes, but is not limited to those listed below.

- *Monitoring of National Workgroups and Advisory Committees:* MDH staff members monitor or participate in meetings of a number of national level e-health workgroups, advisory committees and task forces.
- *Coordinated Responses to National Health Information Technology Policy Proposals:* Through MDH, the Minnesota e-Health Initiative sponsored a statewide coordinated response to federal rulemaking on the Preliminary Meaningful Use Objectives and Measures for Stages 2 and 3. Comments were solicited through e-Health workgroups, stakeholder groups, and the Minnesota e-Health Weekly Update and a formal response was submitted to HHS on February 25, 2011.

Active Minnesota stakeholder engagement in the national standards setting activities is important in Minnesota because certified electronic health records will be required under Minnesota's 2015 EHR mandate. (Minnesota Statutes, section 62J.495). The electronic health record must be certified by the Office of the National Coordinator pursuant to the HITECH Act and must meet the standards established according to Section 3004 of the HITECH Act as applicable. This requirement ensures that EHRs have adopted national standards for information exchange and functionality — two critical components for achieving interoperability and improving quality. It also helps to ensure that the considerable financial investment a provider makes in an EHR system will bring value in the long run.

Standard setting and adoption of those standards is an iterative, ongoing process. Existing standards are continually refined and updated, and new standards will continue to emerge. In short, the work of standards setting, adoption and use is a continuous cycle with the goal of enhancing interoperability.

Anticipated Coordinated Responses on National Health Information Technology Policy Proposals in 2012:

- National Quality Forum eMeasures
- Meaningful Use Stage 2 Rule
- Stage 2 Meaningful Use Standards
- HIPAA Privacy Rule Notice of Proposed Rulemaking
- Nationwide Health Information Network Governance
- EHR Certification Program Rules

Publications and Educational Activities

The workgroups and Advisory Committee, supported by the MDH Office of Health Information Technology, develop resources for health and health care provider, consumers, and other stakeholders on standards for clinical data exchange, clinical support programs, patient privacy requirements, and maintenance of the security and confidentiality of individual patient data. As a part of its ongoing efforts, the Minnesota e-Health Initiative will continue to conduct research, publish guidance and provide resources, and make information available on the Minnesota e-Health website, www.health.state.mn.us/e-health. In addition, the Minnesota Department of Health has implemented ways to strategically communicate and disseminate current information, and inform stakeholders. A few key communications and educational activities from 2011 are listed below.

- *Weekly Update:* The Minnesota e-Health Initiative e-mails a Weekly Update that is a synthesis of e-health related news, significant meetings, and other relevant information intended to provide health related professionals with a Minnesota perspective on local and national health information technology activities. In 2011, the number of Weekly Update subscribers increased by over 600 individuals, from 3,229 readers to 3,889.

- *Summit:* The Seventh Annual Minnesota e-Health Summit, held on June 16, 2011, had a capacity crowd of approximately 450. The keynote speaker was Claudia Williams, Acting Director of the State HIE Program at the Office of the National Coordinator for Health Information Technology who spoke on *National Perspectives* to advance e-Health through Recovery Act opportunities, and highlighted how Minnesota has positioned itself for success. Tools, tips, resources and lessons learned were shared from successful projects in Minnesota in 12 breakout sessions led by over 60 local speakers.
- *Presentations at Associations and Other Groups:* MDH staff from the Office of Health Information Technology supported the Minnesota e-Health Initiative by giving more than 30 presentations at various conferences and meetings held by Minnesota and national organizations and associations, such as the Minnesota Hospital Association, the Minnesota Medical Association, the Minnesota Dental Association, the Minnesota Pharmacists Association, the Minnesota Rural Health Conference, and many others.

Conclusion

Health information technology and health information exchange offer transformative opportunities to improve the health and health care of citizens. Minnesota has been a leader in pursuing bold e-health policies to accelerate the adoption of EHRs and other health information technology, including the use of statutory mandates and funding to accelerate adoption of electronic health records and health data standards. It has also provided a model for effective public-private collaboration to advance e-health goals. As a result, Minnesota health and health care providers are making remarkable progress towards achieving the 2015 Interoperable Electronic Health Records (EHR) mandate, with high rates of EHR adoption in settings such as ambulatory clinics (72%) and hospitals (93%).

While much of the foundation has been laid through the Minnesota e-Health Initiative, considerable work remains to ensure all providers and all Minnesotans can share in the benefits of e-health. The State e-Health Alliance has noted that "…the high costs, avoidable deaths, poor quality, and inefficiency of the current system drive urgency for transformation. But … if not smartly coordinated, it may only result in an electronic version of the 'siloed,' inefficient system we have today"[17].

Ensuring the effective and coordinated implementation of health information technology and health information exchange to improve the health of Minnesotans will continue to be the vision and focus of the Minnesota e-Health Initiative and the Minnesota Department of Health. In 2012-2013, the Minnesota e-Health Initiative will continue to focus attention on the following on-going priorities:

- Advancing adoption and effective use of EHRs and other health information technology to improve quality of care and population health, especially for those with chronic conditions.
- Assessing the progress on adoption and use of EHRs, identifying gaps and barriers to success, and developing pragmatic guidance and resources for organizations to address them.
- Targeting state and federal financial support to closing identified gaps in adoption and effective use.
- Implementing the State Health Information Exchange Cooperative Agreement, which will establish the framework necessary to enable health information exchange to improve continuity and coordination of care.
- Supporting widespread adoption and use of standards based on national recommendations and Minnesota law.

[17] *Accelerating Progress: Using Health Information Technology and Electronic Health Information Exchange to Improve Care*, State Alliance for e-Health, September 2008.

- Evaluating the impact the adoption of health information technology has had on health care quality, patient safety, cost efficiencies, and public health, and to identify and disseminate best practices, practical guidance and resources for organizations to fully realize the potential of these tools.
- Engaging patients and consumers to take an active role in their health care, with a clear understanding of how e-health tools can assist them in achieving their health goals.

Additionally, in 2012-2013, the e-Health Initiative will focus on responding to community recommendations to address specific barriers to the adoption and effective use of electronic health records and secure health information exchange. Recommendations point to a long-term need for the commitment of resources to continue to advance and refine the use of e-health tools to maximize the benefits of EHR investments to support health and health care providers and Minnesotans as they work to achieve health improvement.

Glossary of Selected Terms

e-health
e-health is the adoption and effective use of Electronic Health Record (EHR) systems and other health information technology (HIT) to improve health care quality, increase patient safety, reduce health care costs, and enable individuals and communities to make the best possible health decisions. Across the nation, e-health is emerging as a powerful strategy to transform the health care system and improve the health of communities.

Electronic Health Record (EHR) Systems
An Electronic Health Record is a computerized record of a person's health history over time, typically within and for a single health organization. EHR systems increasingly include tools that assist in the care of the patient or result in greater efficiency, such as e-prescribing, appointments, billing, clinical decision support systems, and reports. Because of such tools, EHR systems are much more than just computerized versions of the paper medical chart. Proper planning and implementation of an EHR system can typically take six-24 months in clinics, and three years or more in a hospital.

e-Prescribing
e-prescribing means secure bidirectional electronic information exchange between prescribers (providers), dispensers (pharmacies), Pharmacy Benefits Managers, or health plans, directly or through an intermediary network. E-prescribing encompasses exchanging prescriptions, checking the prescribed drug against the patient's health plan formulary of eligible drugs, checking for any patient allergy to drug or drug-drug interactions, access to patient medication history, and sending or receiving an acknowledgement that the prescription was filled.

Health Information Exchange (HIE)
Health Information Exchange is the electronic, secure exchange of health information between organizations/information systems. The term can also be used to represent a regional or statewide organization whose purpose is to facilitate and support information exchange between member organizations.

Health Information Technology (HIT)
Health Information Technology means tools designed to automate and support the capture, recording, use, analysis and exchange of health information in order to improve quality at the point of care. HIT is a broad term that includes EHR systems (see above), e-prescribing, Personal Health Records, digital radiologic images, tele-health technologies, and many others.

Health Informatics
Health informatics is the science and art of ensuring that health information systems are designed and used in ways that truly support health professionals in improving the quality and safety of care, and of improving the health of populations.

Interoperability
Interoperability is the ability of information systems to exchange data electronically, such that each system "understands" what the data are, the meaning of that data, and what to do with it. In everyday terms, interoperability is what is meant by the phrase, "computers can talk to each other."

Meaningful Use
Meaningful use defines the use of electronic health records and related technology within a healthcare organization, as defined by the Centers for Medicare and Medicaid Services (CMS). Achieving meaningful use helps determine whether an organization will receive payments from the federal government under either the Medicare Electronic Health Record Incentive Program or the Medicaid Electronic Health Record Incentive Program.

Minnesota e-Health Initiative
The Minnesota e-Health Initiative is a public-private collaborative that represents the Minnesota health and health care community's commitment to prioritize resources and to achieve Minnesota's mandates. The initiative is legislatively authorized and has set the gold standard nationally for a model public-private partnership.

Personal Health Record (PHR)
Personal Health Record typically refers to a computerized application that stores health information on an individual over time. It can be initiated and maintained by the individual, the individual's health care provider, the individual's health plan, or by a third party. The individual can usually input health information themselves. The various models for PHRs and the lack of standards currently make this a confusing area.

Regional Extension Centers
Regional Extension Centers refers to entities that have received federal funding through the Health Information Technology for Economic and Clinical Health (HITECH) Act to provide technical assistance to health care providers and hospitals in the implementation and meaningful use of electronic health records. The Regional Extension Center for Minnesota and North Dakota is REACH (Regional Extension Assistance Center for Health IT).

Standards
Health data standards are consistent, uniform ways to capture, record and exchange data. Standards are a necessary component to achieve interoperability (see above). The various types of standards include Terminology (how data such as lab results and diagnosis are coded in uniform ways), Messaging (how data are sent in ways that the receiving system can understand what's coming in), Transactions/claims (to receive payment), and Data Content (common definitions and codes, such as for race and ethnicity).

The full Minnesota e-Health Glossary is available online at http://www.health.state.mn.us/e-health/glossary.html.

Selected e-Health Acronyms

AHIC: American Health Information Community is the national public-private body that establishes priority "use cases" (that is, scenarios) for electronic exchange that have the greatest potential to improve quality, safety and/or population health.

CCHIT: Certification Commission for Healthcare Information Technology is the national body that establishes criteria for certifying EHR systems, conducts the evaluation, and issues the certification. www.cchit.org. CCHIT incorporates many of the standards recommended by HITSP (see below) based on AHIC priority use cases (see above).

HITECH: Health Information Technology for Economic and Clinical Health Act refers to Division A, Title XIII and Division B, Title IV of the American Recovery and Reinvestment Act of 2009, which established Medicare and Medicaid incentives for hospitals and health care providers that can demonstrate meaningful use of electronic health records. The act also provided funding to the Office of the National Coordinator to establish supporting programs to provide for technical assistance, the infrastructure necessary to enable health information exchange, and to provide for workforce development and mechanisms to share best practices.

HITSP: Health Information Technology Standards Panel is the national body tasked with identifying the optimal standards to be adopted nationwide in order to implement the use cases identified by AHIC (see above) and to achieve interoperability across systems and organizations.

ONC: Office of the National Coordinator is a part of the federal Department of Health and Human Services, and is responsible for coordination of national activity relating to EHR's and HIT. The "The ONC-Coordinated Federal Health IT Strategic Plan: 2008-2012" was released in June 2008 and can be found at www.hhs.gov/healthit/resources/HITStrategicPlan.pdf.

APPENDIX A: Minnesota e-Health Advisory Committee Charge

Minnesota e-Health Initiative
Advisory Committee Charge

Vision
The Minnesota e-Health Initiative vision is *to "accelerate the use of health information technology to improve healthcare quality, increase patient safety, reduce healthcare costs and enable individuals and communities to make the best possible health decisions."*

Approach
Minnesota is experiencing a transformation in the uses of electronic health records and other health information technology. Guiding this transformation is the Minnesota e-Health Initiative - a private/public collaboration to accelerate the adoption and use of health information technology as a powerful tool to improve health care quality, increase patient safety, reduce health care costs and improve public health. The Minnesota e-Health Initiative is distinctive in its broad support and comprehensive vision, which is focused on consumers and provides value to people and communities. The Minnesota e-Health Advisory Committee makes recommendations to the Commissioner of Health on policies and strategies that:

- **Empower Consumers** with information to make informed health and medical decisions;
- **Inform and Connect Healthcare Providers** so they have access to the information and decision support they need;
- **Protect Communities** with accessible prevention resources, and rapid detection and response to community health threats; and
- **Enhance the Infrastructure** necessary to fulfill the e-Health vision.

Statutory Authorization
The Minnesota e-Health Advisory Committee will perform the work assigned to the e-Health Advisory Committee as established by Minnesota Statutes, section 62J.495.

Committee Charge (Updated September 2011)
The e-Health Advisory Committee shall provide recommendations to the Commissioner of Health on achieving the vision of the e-Health Initiative. Consistent with its statutory responsibilities, the e-Health Advisory Committee will support the implementation of the statewide implementation plan for interoperable electronic health records (EHRs) systems primarily by:

- Developing policies and identifying practical tools and information resources to ensure the:
  - Adoption and effective use of interoperable EHR systems, including adequately trained staff, clinical decision support systems, quality improvement and population health.
  - Identification of specific standards for sharing and synchronizing patient data across interoperable EHR systems and across the continuum of care.
  - Adoption and implementation of electronic prescribing statewide by all health care providers, group purchasers, prescribers, and dispensers.
- Coordinating with national HIT Activities, including:
  - Update the statewide implementation plan to be consistent with the updated Federal HIT Strategic Plan released by the Office of the National Coordinator in accordance with the Health Information Technology for Economic and Clinical Health Act (HITECH).
  - Monitor national activity related to health information technology and engage in activities that will ensure that the needs of the Minnesota health care community are adequately and efficiently addressed, such as
    - Coordination of statewide responses to proposed federal health information technology regulations and guidelines.
    - Reviewing and advising on activities related to the implementation of HITECH and other HIT related provisions of American Recovery and Reinvestment Act (ARRA), including but not limited to:
      - Regional HIT Extension Centers funded under Section 3012 of the HITECH Act to supply Minnesota providers with the assistance they need to meet meaningful use requirements.

- The State Health Information Exchange Cooperative Agreement funded by Section 3013 to expand the secure, electronic movement and use of health information among organizations according to nationally recognized standards.
- Initiatives to expand the workforce of information technology professionals in health care funded by Section 3016.

• Assisting the Office of the National Coordinator in reporting back to Congress on the status of implementation in Minnesota, including assessment information on EHR adoption rates, barriers to adoption and meaningful use, and lessons learned in Minnesota.

- Advising as needed on special projects and activities including:
  - Providing advice on how electronic health records and other health information technologies can best support state and federal health reform initiatives and support higher quality, more efficient care.
  - Engaging consumers in e-health, and ensuring strong privacy protections that safeguard patient's health information and increase consumer confidence during the identification of standards and implementation of electronic health records and other health information technology, and health information exchange policies.
  - Assessing the status of EHR adoption, effective use and interoperability in private and public settings.
  - Implementing and continuously refining the Minnesota e-Health Communications Plan, with emphasis on engaging professional and trade associations.
  - Accelerating the adoption of EHRs in all health care delivery settings whether or not they are eligible for existing incentives programs (ie. long term care & public health)
  - Other related topics and issues as identified in the statewide implementation plan or as requested by the Commissioner of Health.

Expectations of Members

- To attend quarterly meetings of the e-Health Advisory Committee. Committee meetings will be 3 - 4 hours in length. Appointed members may contact the designated alternate member to attend on their behalf for up to two Advisory Committee meetings each year.
- To participate in at least one workgroup, actively contributing perspective and expertise in approximately 1 – 2 in-person workgroup meetings per quarter and 2-3 conference calls for 1 to 1.5 hours per quarter. Workgroup meetings will be 2-3 hours in length and scheduled as needed.
- To bring the perspective of the stakeholder group you were selected to represent to all committee and workgroup discussions and decisions.
- To keep the statewide interests of the Initiative foremost in your decisions and recommendations.
- To review meeting materials ahead of time and be prepared to contribute clear and focused ideas for committee discussion.

Timeline 2011 -2012(Updated September 2011)

- **September 2011 – June 2012**: Quarterly e-Health Advisory Committee meetings.
- **September 2011 – June 2012**: 2 – 4 Advisory Committee Workgroup meetings per quarter.
- **January 15, 2012**: Commissioner of Health provides an annual report to the Minnesota Legislature outlining progress to date in implementing a statewide health information infrastructure and recommending future projects. This annual report will include a section on the identification, adoption and refinement of uniform standards for sharing and synchronizing patient data across systems.
- **June 2012**: Proposed 8th annual Minnesota e-Health Summit and update on progress.

Committee Members:

The Advisory Committee consists of representatives of consumers, academics, research, health plans, hospitals, local public health, nurses, physicians, community clinics/FQHCs, long term care, clinic managers, laboratories, pharmacists, health care purchasers/employers, expert in clinical guideline development, quality improvement organizations, health-system CIOs, HIT vendors, professionals with expert knowledge in HIT, state agencies, and Minnesota exchange organizations.

APPENDIX B: Minnesota e-Health Workgroup Charges

Minnesota e-Health Initiative
Overview of the Workgroup Purpose, Approach and Individual Workgroup Charges
2011-2012

Introduction and Purpose

The Minnesota e-Health Initiative is a public-private collaborative guided by a 26-member e-Health Advisory Committee representing health care providers, payers, public health professionals, consumers and others. The MN e-Health Advisory committee makes recommendations to the Commissioner of Health on issues related to the adoption and effective use of electronic health records, and the secure exchange of information between providers and other stakeholders. To enable this work, the Minnesota e-Health Advisory Committee has established workgroups as a way for all stakeholders to participate in the process of developing plans and implementing policies related to health information technology in Minnesota. Participation in workgroup meetings is voluntary and open to the public.

Workgroups 2011-2012	Main Focus	MDH Contact
Adoption and Meaningful Use	Review assessment data, conduct gap analysis, make recommendations, identify resources, and provide guidance in Minnesota for meeting meaningful use requirements.	Kari Guida (651) 201-4136 kari.guida@state.mn.us
Communications	Advise on the coordination of e-health outreach and communication efforts statewide.	Rebecca Johnson (651) 201-5092 rebecca.e.johnson@state.mn.us
Health Information Exchange	Coordinate the development of statewide policy recommendations related to health information exchange into an integrated statewide approach.	Jennifer Fritz (651) 201-3662 jennifer.fritz@state.mn.us
Privacy, Legal and Policy	Review and comment on privacy and security-related policies and make recommendations on mechanisms to ensure compliance with state and federal requirements.	Bob Johnson (651) 201-4856 bob.b.johnson@state.mn.us
Standards and Interoperability	Identify and recommend nationally recognized standards, implementation specifications and certification criteria necessary to facilitate the secure electronic movement of health information.	Priya Rajamani (651) 201-4119 priya.rajamani@state.mn.us

Past Achievements, Deliverables and Value in Participating

Minnesota e-Health workgroups have contributed to the development of Minnesota public policy related to health IT and have assisted in writing plans and practical guides to assist health and healthcare providers with adoption and effective use of EHR systems, including implementing the correct interoperability standards that will enable the secure exchange of health information. Minnesota workgroups have also influenced national policy by participating in numerous coordinated responses to federal rulemaking on electronic health information and have developed recommendations on other national initiatives, such as quality standards and EHR certification criteria. Participation in workgroups enables individuals to proactively help shape future policy directions that can have a major impact on their organizations and enables organizations to be more prepared to respond to the requirements of state and federal implementation plans as they are established. Examples include funding, standards development and implementation tools.

Background

Through the Minnesota e-Health Initiative, the Minnesota Department of Health and the Minnesota e-Health Advisory Committee have been working to carry out significant legislation enacted in Minnesota in 2007 and 2008. This includes mandates that all health care providers have interoperable EHRs by 2015 (MS s 62J.495), and that all health care providers, dispensers and payers establish and use an e-prescribing system by January 1, 2011 (MS s 62J.497). To enable this work, the Minnesota e-Health Initiative has established workgroups as a way for all stakeholders to participate in the process of developing plans and implementing policy related to health information technology in Minnesota.

In June of 2008, the Minnesota e-Health Initiative and the Minnesota e-Health Advisory Committee issued *A Prescription for Meeting Minnesota's 2015 Interoperable Electronic Health Record Mandate: A Statewide Implementation Plan*. In 2009, companion guides to the statewide plan were updated or added including: *A Practical Guide to Electronic Prescribing, Standards Recommended*

For more information: www.health.state.mn.us/e-health **or by e-mail:** MN.eHealth@state.mn.us 1

Updated September 16, 2011

to Achieve Interoperability in Minnesota, and *A Practical Guide to Effective Use of EHR Systems*. Minnesota e-Health workgroups were key participants in developing these plans and guides, and continue to provide the work, guidance and advice needed to advance efforts in Minnesota to comply with state mandates and improve the health of all Minnesotans.

Federal HITECH Act as a Critical Element

In 2009, Congress passed the Health Information Technology for Economic and Clinical Health Act (HITECH Act) which requires the Office of the National Coordinator (ONC) and federal Department of Health and Human Services (HHS) to develop rules, guidance and plans to promote adoption and "meaningful use" of health information technology (HIT). The Act also establishes incentives for hospitals and health care providers through Medicare and Medicaid for meaningful use of electronic health records (EHRs), and establishes the State Health Information Exchange Cooperative Agreement Program which includes funding for states to develop the health information exchange capacity needed to allow providers to meet meaningful use criteria. The Minnesota e-Health Initiative and its workgroups have provided an invaluable forum to discuss and respond to federal rulemaking and for HITECH programs in Minnesota to coordinate efforts, update key stakeholders and receive feedback on plans and activities.

Coordination with other HITECH Programs

Other programs in Minnesota that are funded through the HITECH Act include a Regional Extension Center for HIT (REACH) to help providers achieve meaningful use; programs to educate the HIT workforce at Normandale Community College and the University Partnership for Health Informatics (UP-HI) between the University of Minnesota and the College of St. Scholastica; the Southeast Minnesota Beacon Program funded to improve health and health care delivery with respect to childhood asthma and adult Type II diabetes; and a Strategic Health IT Advanced Research Project (SHARP) at the Mayo Clinic to enhance patient safety and improve patient medical outcomes through the use of EHRs. Minnesota e-Health workgroups have been a means for these programs to gather practical advice and share lessons learned with the rest of the community.

Guiding Principles and Workgroup Approach

- Resources for EHR implementation, use, and information exchange (e.g. tools, tips and resource links) are important to support statewide standards implementation and achieving EHR adoption and effective use for Minnesota providers across the continuum of care.
- The broad view of issues that affect the ability of providers and hospitals to achieve meaningful use should be considered, including but not limited to technical, organizational, legal, community, and telecommunications issues.
- Deliverables should be consistent with and support federal and state health care reform efforts.
- Workgroups will consider and expand upon the previous work completed and published through the Initiative.
- Assessment and other science-based data should inform and guide decisions and recommendations.
- Health information privacy and security should always be considered critical, providing individuals with a reasonable opportunity to make informed decisions about the collection, use and disclosure of their health information.

Workgroup Member Expectations

- Serve a one-year term: September 2011 – June 2012
- Participate in meetings and/or conference calls as needed during the term
- Bring the perspective of the stakeholder group you represent to all discussions and decisions.
- Keep the statewide interests of the e-Health Initiative foremost in your decisions and recommendations.
- Review meeting materials ahead of time and be prepared to contribute clear and focused ideas for discussion.

Workgroup Process

Workgroups are chartered to serve the Minnesota e-Health Advisory Committee, which in turn is authorized to provide recommendations to the Commissioner of Health on EHRs and other health information technology.

- Workgroup Chairs are endorsed by Advisory Committee Co-Chairs
- Workgroups convene to fill particular needs as charged by the Advisory Committee
- The Minnesota Department of Health provides lead staff and subject matter experts to coordinate group activity
- Participation is voluntary and open to the public to provide meaningful contributions

Contact for More Information

For more information on how to participate in a workgroup, please contact the MDH staff coordinator listed in the above table for each group. For more information about the Minnesota e-Health Initiative and the Minnesota e-Health Advisory Committee, contact Bob Johnson by phone at (612) 201-4856 or by email at bob.b.johnson@state.mn.us.

APPENDIX C: Selected Bibliography of Recent e-Health Resources

E-Prescribing

Fact sheet on Minnesota's e-prescribing mandate.
www.health.state.mn.us/ehealth/eprescribing/index.html

Fact sheet from the federal Centers for Medicaid and Medicare Services (CMS) on its incentive program for e-prescribing.
www.cms.hhs.gov/eprescribing/

National ePrescribing Patient Safety Initiative (NEPSI), a coalition-based program comprised of health care, technology and provider companies that provides free e-prescribing to every physician and medication prescriber in the country.
www.nationalerx.com

Agency for Healthcare Research and Quality (AHRQ) press release: *Study Finds Doctors' Use of E-Prescribing Systems Linked to Formulary Data Boost Drug Cost Savings*, December 8, 2008
www.ahrq.gov/news/press/pr2008/eprescribpr.htm

SureScripts, operator of the nationwide Pharmacy Health Information Exchange.
www.surescripts.com/safe-Rx/

A Consumer's Guide to ePrescribing¸ eHealth Initiative, June 2008
www.ehealthinitiative.org/assets/Documents/eHI_CIMM_Consumer_Guide_to_ePrescribing_Final.pdf

Options for Increasing e-Prescribing in Medicare, Gorman Health Group, July 2007.
www.gormanhealthgroup.com/

Adoption and Effective Use of EHR Systems

Certification Commission for Healthcare Information Technology (CCHIT): Includes the list of nationally certified EHR systems required to meet the 2015 Minnesota interoperable EHR mandate.
www.cchit.org

Certification Commission for Healthcare Information Technology (CCHIT) press release:Incentive Programs for EHRs Growing, September 2008.
www.cchit.org/about/news/releases/2008/Incentive-programs-EHR-adoption-growing.asp

Minnesota e-Health grants and loans available through the Minnesota Department of Health.
www.health.state.mn.us/ehealth, under Funding and Other Resources.

Stratis Health DOQ-IT program: Practical tools to assist in planning, implementation and effective use of EHR systems.
www.stratishealth.org

The American Academy of Family Physicians Center for Health Information Technology: Practical tools for preparation, selection, implementation and maintenance of EHR systems.
www.centerforhit.org

Healthcare Information and Management Systems Society (HIMSS): Dozens of articles and presentations available on the realities of EHR adoption and use.
www.himss.org/ASP/topics_FocusDynamic.asp?faid-198

Agency for Healthcare Research and Quality (AHRQ) Health IT Toolkit: Tools to support effective adoption and use of EHR systems.
www.healthit.ahrq.gov

Standards and Interoperability
Standards required for implementation in Minnesota, background information on standards, and information on the Standards Workgroup of the MN e-Health Initiative.
www.health.state.mn.us/ehealth/standards/index.html

Healthcare Information Technology Standards Panel (HITSP): The national body charged with harmonizing and integrating standards for health information.
www.hitsp.org

Certification Commission for Healthcare Information Technology (CCHIT): The national body that certifies EHR based on objective, verifiable criteria for functionality and interoperability.
www.cchit.org

The National Council for Prescription Drug Programs (NCPDP): Creates and promotes the transfer of data related to medication, supplies and services within the health care system through the development of standards and industry guidance.
www.ncpdp.org

Health Level Seven (HL7): ANSI accredited Standards Developing Organization (SDO) that is involved in development and advancement of clinical and administrative standards for health care.
www.hl7.org

Privacy, Confidentiality and Security

Minnesota Standard Consent Form to Release Health Information: The development of this form was mandated in the 2007 Minnesota Health Records Act, Minn. Stat. 144.291-.298. Its purpose is to allow a person to request that their health records be sent to whomever they choose for whatever purpose they choose.
www.health.state.mn.us/divs/hpsc/dap/consent.pdf

Upper Midwest HIE Consortium Consent Form to Release Health Information: Intended to Provide a streamlined and uniform process for obtaining patient consent and exchanging patient health information between health care providers in different states.
http://www.health.state.mn.us/divs/hpsc/ohit/umhie.html

Minnesota Standard Consent Form to Release Health Information Q&A: Answers general questions regarding the standard consent form.
www.health.state.mn.us/e-health/wgs0708/mpsp050608consentformqa.pdf

Nationwide Privacy and Security Framework for Electronic Exchange of Individually Identifiable Health Information: Principles established to govern exchange of health information, including defining roles of and responsibilities of the exchange partners. Department of Health and Human Services, December 2008.
www.hhs.gov/healthit/privacy/framework.html

The Health IT Privacy and Security Toolkit: Guidance designed to help implement the *Nationwide Privacy and Security Framework* (see above). Department of Health and Human Services, December 2008.
www.hhs.gov/healthit/privacy/framework.html

Connecting For Health policy brief: A discussion of "a 21st Century privacy approach" allowing Americans to protect *and* share their health information. Markle Foundation, September 2008.
www.connectingforhealth.org

Personal Health Records

myPHR: Background information, testimonials, and a no-cost PHR. American Health Information Management Association.
www.myphr.com

Minnesota fact sheet on PHRs: See www.health.state.mn.us/ehealth, under Consumers and PHRs.

Certification Commission for Healthcare Information Technology Personal Health Record Work Group: Reviewing and revising criteria and test scripts for certifying PHRs, scheduled to begin in 2009.
www.cchit.org/phr

APPENDIX D: Minnesota e-Health Advisory Committee Members and Designated Alternates as of January 30, 2012

Minnesota e-Health Advisory Committee Members 2011-2012

Bobbie McAdam Advisory Committee Co-Chair Sr. Director, Business Integration Medica Information Technology Representing: Health Plans	**Marty Witrak, PhD, RN** Advisory Committee Co-Chair Professor, Dean School of Nursing College of St. Scholastica Representing: Academics and Research
Alan Abramson, PhD Senior Vice President, IS&T and Chief Information Officer HealthPartners Representing: Health Plans	**Tina Armstrong** Director, Health Care Policy Minnesota Department of Commerce Representing: Minnesota Department of Commerce
Thomas A. Baden, Jr. Director, Office of Enterprise Architecture Minnesota Department of Human Services Representing: Minnesota Department of Human Services	**Barry Bershow, MD** Vice President, Quality Fairview Health Services Representing: Expert in Clinical Guideline Development
Laurie Beyer-Kropuenske, JD Director Community Services Divisions Representing: Minnesota Department of Admin.	**John Fraser** CEO ApeniMED, Inc. Representing: Health IT Vendors
Raymond Gensinger, Jr., MD Chief Medical Information Officer Fairview Health Services Representing: Professional with Expert Knowledge of Health Information Technology	**Maureen Ideker, MBA, RN** Director of Telehealth Essentia Health Representing: Small and Critical Access Hospitals
Mark Jurkovich, DDS, MBA Dentist Gateway North Family Dental Representing: Dentists	**Paul Kleeberg, MD** Clinical Director Regional Extension Assistance Center for HIT Representing: Physicians
Marty LaVenture, PhD, MPH Director, Office of Health Information Technology Minnesota Department of Health Representing: Minnesota Department of Health	**Jennifer Lundblad, PhD** President and Chief Executive Officer Stratis Health Representing: Quality Improvement Organization
Walter Menning Vice Chair, Information Services Mayo Clinic Representing: Health System CIOs	**Charlie Montreuil** Vice President, Enterprise Rewards and Corporate Human Resourses Best Buy Representing: Health Care Purchasers and Employers

Peter Schuna Director of Strategic Initiatives Pathway Health Services Representing: Long Term Care	**Stuart Speedie, PhD, FACMI** Professor of Health Informatics University of Minnesota Representing: Academics and Clinical Research
Steve Simenson, BPharm, FAPhA President and Managing Partner Goodrich Pharmacy Representing: Pharmacists	**Joanne Sunquist** Chief Information Officer Hennepin County Medical Center Representing: Large Hospitals
Bonnie Westra, RN, PhD Associate Professor University of Minnesota, School of Nursing Representing: Nurses	**John Whisney** Director of Ridgeview Clinics Ridgeview Medical Center Representing: Clinic Managers
Ken Zaiken Consumer Advocate Representing: Consumers	**Karen Zeleznak, MPH** Public Health Administrator Bloomington Public Health Representing: Local Public Health
Cheryl M. Stephens, MBA, PhD Executive Director Community Health Information Collaborative Ex-Officio Exchange Liaison: HIOs	**John Feikema, MS** President ABILITY Network Ex-Officio Exchange Liaison: HDIs

Minnesota e-Health Advisory Committee Designated Alternates 2011-2012

Geoffrey Archibald, DDS Dentist North Branch Dental Alternate Representing: Dentists	**Jeffrey Gallagher** Medical/Surgical Pharmacist Centracare Hospital Pharmacy Alternate Representing: Pharmacists
Sue Hedlund Deputy Director Washington County Public Health Alternate Representing: Local Public Health	**Melinda Machones, MBA** Health IT Consultant Alternate Representing: Professional with Expert Knowledge of Health Information Technology
David Osborne Director of Health Information Technology/ Privacy Officer Volunteers of America Alternate Representing: Long Term Care	**Rebecca Schierman, MPH** Manager, Quality Improvement Minnesota Medical Association Alternate Representing: Physicians
Susan Severson Director, Health IT Services Stratis Health Alternate Representing: Quality Improvement Organization	**Mark Sonneborn** Vice President, Information Services Minnesota Hospital Association Alternate Representing: Hospitals
Kathy Zwieg Associate Publisher & Editor-in-Chief Inside Dental Assisting Magazine Alternate Representing: Clinic Managers	

For More Information:

Minnesota Department of Health
Minnesota e-Health Initiative/
Office of Health Information Technology

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