



# Progress Report *To the Minnesota Legislature*

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Minnesota Department of Health  
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## Executive Summary

The Minnesota e-Health Initiative (MN e-Health) is a private–public collaboration whose vision is to accelerate the adoption and use of health information technology in order to improve health care quality, increase patient safety, reduce health care costs and improve public health. Minnesota has made important progress in the past year. However, barriers and challenges remain to achieve statewide adoption and effective use of interconnected electronic health records (EHR) and related health information technology.

The MN e-Health Initiative began in 2004. It is guided by a statewide advisory committee with representatives from hospitals, health plans, physicians, nurses, other healthcare providers, academic institutions, purchasers, local and state public health agencies, citizens and others with expert knowledge of health information technology and electronic health record systems. The initiative provides strategic recommendations to the Commissioner of Health around four broad strategic goals.

Inform clinical practice principally through widespread use of electronic health records (EHRs). Adoption of EHRs is growing in Minnesota, particularly in larger hospitals and primary care clinics. An estimated 57% of Minnesota’s larger clinics have EHRs fully or partially implemented, compared to 25% for smaller clinics. Long term care and other care settings have very low adoption rates (<10%). Lack of capital resources and implementation challenges remain barriers to EHR adoption for smaller organizations.

Interconnect clinicians to securely share healthcare information across organizations seeing the same patient. As noted in Appendix D, at least six initiatives in communities across the state are emerging as test beds for health information exchange. These projects face challenges, including establishing collaborative governance structures by a diverse and broad set of community stakeholders, a need for common standards and policies for information sharing, identification of sustainable funding models and business plans, and identification of metrics to measure performance.

Personalize care to empower consumers and improve their health and healthcare, primarily through widespread access to personal health records. People use PHRs to securely manage their medications, conditions, immunizations, allergies, test results and other health information for themselves and their family. Personal health records are an emerging capability both locally and nationally. The definition of PHRs is evolving as well. While holding great promise, a number of policy issues relevant to PHRs must also be addressed, including scope of content, source of information, features and functions, standards for interoperability with EHRs and privacy and security.

Improve public/population health through using health information to help protect and improve the health of entire communities. The focus is on populations and prevention rather than on treating diseases, disorders and disabilities in individuals. There is a key deficit in information system capacity and very limited interoperability capacity between state and local health departments. The Minnesota Public Health Information Network initiative was started in 2005 to assess the needs for improving the interoperability between state and local public health department information systems, as well as between public health and the healthcare system.

*As required by Minnesota Statutes, section 3.197,  
his report cost approximately \$ 1,670 to prepare including staff time, printing and mailing expenses.*



# Minnesota e-Health Initiative Progress Report to the Minnesota Legislature

## Minnesota e-health Initiative will use health information technology to:

- Empower citizens as health care consumers
- Ensure all relevant medical information on an individual is securely available to authorized healthcare providers or to an emergency room
- Reduce costly inefficiencies within and across health care settings
- Use health care and public health data to better protect communities against health risks or threats.
- Improve the safety and quality of health care

## Introduction

Achieving the full use of interconnected electronic health records in Minnesota is critical to ensuring and improving quality of care and patient safety. Minnesotans need this system in order to give physicians, patients and communities the information they need—when and where they need it—to make the best possible health decisions.

Minnesota has made important progress in the past year. However, important gaps and challenges remain at the state and national levels. These must be addressed to achieve full adoption and effective use of interconnected electronic health records (EHR) and related health information technology.

The consequences of having only paper-based health records range from inconvenient to critical to fatal. In 2000, the Institute of Medicine (IOM) estimated that between 44,000 and 98,000 Americans die each year from preventable medical errors.<sup>1</sup> According to the Center for Information Technology Leadership (CITL), the lack of immediate access to patient healthcare information is the source of one-fifth of medical errors.<sup>2</sup> In fact, the 2006 *Adverse Health Events in Minnesota Annual Report* says that one of the reasons that serious “never events” happened last year in our state is that “Relevant documentation (operative notes, consent form, etc.) is not always available/visible at the point when it is needed.”<sup>3</sup> It is estimated that one of every seven primary care visits is affected by missing medical information.<sup>4</sup>

The vital importance of interoperable health records was underscored in the aftermath of Hurricane Katrina. The hurricane destroyed the paper records for nearly all those displaced by the disaster, wiping out medical and medication histories and hindering the delivery of appropriate, safe care. By contrast, the medical records of those in Veterans Affairs

<sup>1</sup> Linda T. Kohn, Janet M. Corrigan, and Molla S. Donaldson, editors, “To Err Is Human; Building A Safer Health System” National Academy Press, 1999.

<sup>2</sup> PricewaterhouseCoopers Health Research Institute and PricewaterhouseCoopers Global Technology Centre, “Reactive to Adaptive: Transforming Hospitals with Digital Technology.” 2005.

<sup>3</sup> The National Quality Forum developed a list of 27 events that should never happen in healthcare. See <http://www.health.state.mn.us/patientsafety/aereport0206.pdf> for Minnesota adverse health event report.

<sup>4</sup> Peter Smith. “Missing Clinical Information During Primary Care Visits,” Journal of the American Medical Association. 2005.

Department hospitals, which are held electronically, were available within several days to assist in the care of any veteran receiving care in VA hospitals. Also, the immunization registry in Louisiana was up within days and accessed by schools or public health departments *in all 50 states* as displaced children entered schools in their adoptive communities, saving hundreds of thousands of dollars in vaccinations that didn't have to be needlessly repeated.

### **Benefits to Consumers, Providers and Communities**

There are many benefits to consumers, providers and communities for using interconnected (interoperable) EHR systems. Interconnected EHRs allow physicians and other healthcare providers to share medical history, lab results and other pertinent information in a more timely, secure and accurate way.

By more effectively limiting unauthorized access and auditing everyone who views personal health information in the EHR, interoperability provides patients with more security and confidentiality than is possible with paper records. And interoperability makes possible an efficient process to detect and respond to bio-terrorism, the spread of disease and other public health concerns by allowing population-level analysis of trends in disease and symptoms.

A Personal Health Record (PHR) is an electronic application through which individuals can maintain and manage their health information (and that of others for whom they are authorized) in a private, secure and confidential environment.<sup>5</sup> PHRs enable individuals to take charge of their own health information and also provide improved support for adults who care for aging parents, especially from far away.

### **Advisory Committee**

Formed in 2004, the Minnesota e-Health Initiative (MN e-Health) is a private-public collaboration whose vision is to accelerate the use of health information technology in order to improve healthcare quality, increase patient safety, reduce healthcare costs and improve public health in Minnesota.

MN e-Health is guided by a statewide advisory committee that is formally established in Minnesota Statutes, section 62J.495. Because the committee has been assigned the duties of the Minnesota Health Information Technology and Infrastructure Advisory Committee, it provides recommendations for strategic action to the Minnesota Commissioner of Health.

The committee has representatives from hospitals, health plans, physicians, nurses, other healthcare providers, academic institutions, state government purchasers, local and state public health agencies, citizens and others with expert knowledge of health information technology and electronic health record systems. See Appendix B for the 2006-2007 MN e-Health Advisory Committee Membership.<sup>6</sup>

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<sup>5</sup> <http://www.hhs.gov/healthit/glossary.html>

<sup>6</sup> Information on monthly meetings and recommendations for strategic action is published at <http://www.health.state.mn.us/e-health/>

## **Minnesota Roadmap for Strategic Action**

The “Minnesota e-Health Roadmap for Strategic Action” outlines the vision, four goals and 18 recommendations for initial action. See a copy of the roadmap in Appendix C. These recommendations are intended to promote a comprehensive approach to accelerating use of health information technology in Minnesota across broad domains of health and healthcare settings. The MN e-Health Roadmap was initially published in the January 2005 report to the legislature.<sup>7</sup>

By design, the MN e-Health vision is bold and the four goals are broad and ambitious. They are consistent with the federal “Framework for Strategic Action” from the Office of the National Coordinator for Health Information Technology. The four goals are:

- Goal 1: Inform clinical practice (includes a focus on Electronic Health Records);
- Goal 2: Interconnect clinicians (includes health information exchange organizations);
- Goal 3: Personalize care (includes Personal Health Records); and
- Goal 4: Improve population/public health (includes disease surveillance and response systems, community health and prevention).

Progress in Minnesota this past year is summarized below by each goal. In addition, progress on several cross cutting issues is presented. These include financing, privacy and security, education, communications, leadership and training.

### **Goal 1 Progress: Adoption of Electronic Health Records**

Electronic health records (EHRs) are arguably the single most critical element to any e-Health initiative. Much more than electronic versions of paper medical records, EHRs include prompts for tests that are due and alerts to help avoid medication dosage and other types of potential errors. By relying on either selected or typed text, EHRs help providers avoid errors, such as a medication error due to illegible handwriting. Because the data is appropriate for screening and/or prevention activities, having interoperable EHRs increases the ability of clinics and physicians to improve the health of groups of their patient population with like conditions (e.g., chronic disease management). And, very importantly, EHRs make possible the secure exchange of medical data with other facilities seeing the same patient, so that continuity of quality care is ensured and tests do not have to be repeated.

Table 1 on page 15 shows the current estimates of Health Information Technology (HIT) use in Minnesota, specifically for use of electronic health records and e-prescribing applications by 14 different domains.<sup>8</sup> Comprehensive information on adoption, use, and effectiveness of HIT across health domains in Minnesota is limited. Three recent surveys provide better information regarding adoption of HIT in clinics, hospitals and public health departments. The surveys vary in definitions used for “electronic health records” and for “fully implemented.” The response rate also varies by each domain. Despite these limitations, the information improves our understanding of EHR use in Minnesota.

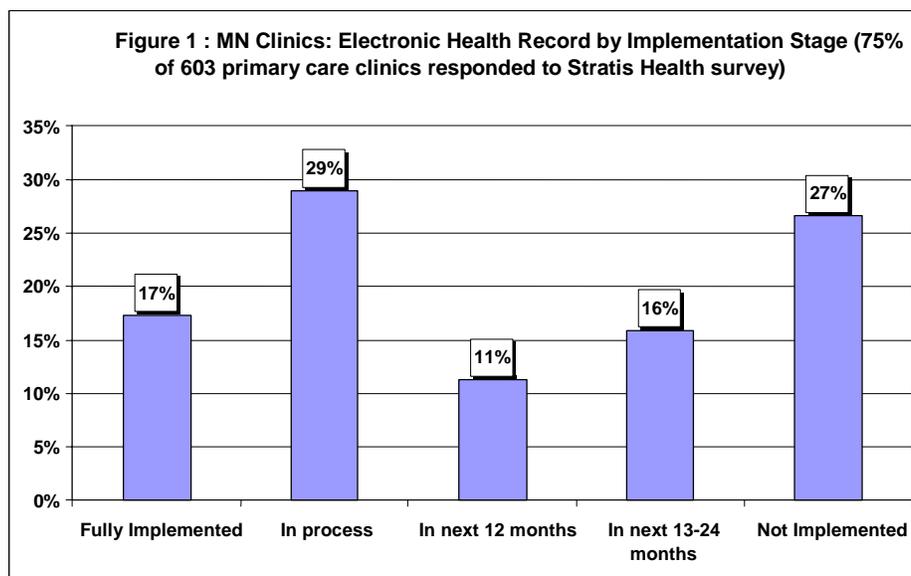
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<sup>7</sup> <http://www.health.state.mn.us/e-health/legreport0105.pdf>

<sup>8</sup> “Domains” are identified stakeholders or participants in the Minnesota health and healthcare environment that have unique characteristics and interests and defined roles, e.g., hospitals, clinics, physicians, local public health, etc.

## Electronic Health Record Use in Minnesota's Primary Care Clinics

Stratis Health conducted a survey of adult primary care clinics to assess the current status of EHR implementation. Seventy-five percent of 603 total adult primary care clinics completed the survey from June 2005 to October 2005. The survey showed that 46% of respondents have implemented, or are in the process of implementing, an EHR (Figure 1).



At the other end of the spectrum, 27% indicated they had “not implemented” EHRs and had no plans of implementation within the next 24 months. Large clinic providers, which are mostly urban, are much more likely to have fully or partially implemented electronic health record systems than are smaller providers, which are mostly rural. The survey found that approximately 57% of Minnesota’s larger clinics have EHRs fully or partially implemented, compared to 25% for smaller clinics.

The survey respondents identified three government policy actions that would impact their decision to implement EHR:

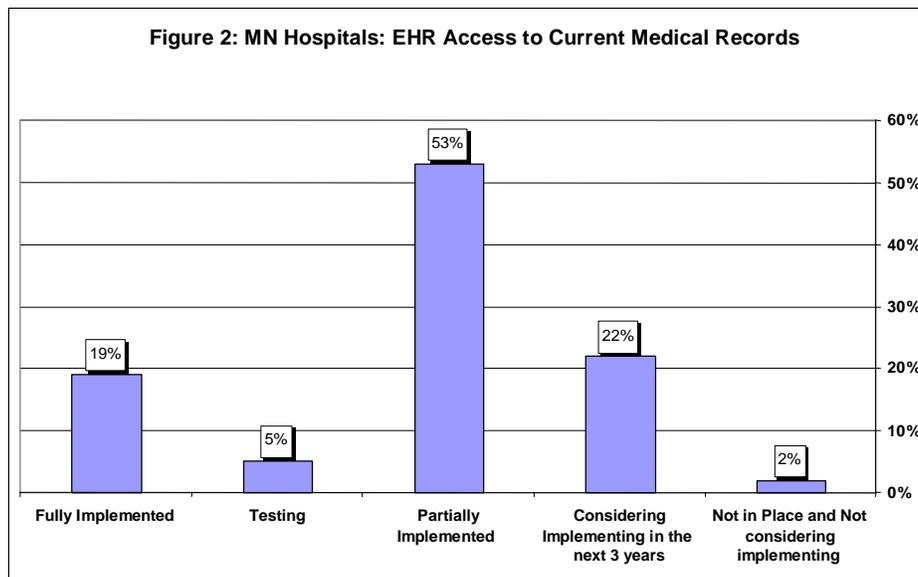
- provide grant funds to assist in the purchase of an EHR;
- provide tax credits for investment in EHR; and
- provide low interest loans for the purchase of an EHR.

According to survey respondents, the top three barriers that have slowed/prevented implementation of an EHR in these clinics were:

- lack of capital resources to invest in an EHR;
- concern about loss of productivity during transition to EHR system; and
- concern about physician ability to input data into a computerized medical record.

## Minnesota Hospitals: Electronic Health Record Access to Current Medical Information

There are 136 acute care hospitals in Minnesota. Of these, 64 hospitals responded to an American Hospital Association survey to assess EHR access to current medical information. Of these hospitals, 19% of respondents have fully implemented EHR, 5% are testing and 53% have partially implemented (Figure 2).



## Local Public Health Departments Information Systems Survey

A total of 76 out of 91 Minnesota Local Health Departments (LHD) (cities and counties) responded to a survey in the fall of 2004 to assess the use of electronic health information systems. Respondents reported that 66% (51) of local health departments have only a partially implemented integrated electronic health record as part of their work. None of the applications are currently enabled to use electronic exchange with community healthcare providers. One particular challenge is that local public health departments must use approximately 17 separate and unique state and federal software applications that do not interconnect with other data systems. This lack of interoperability increases costs and risks loss of services for clients.

## Ongoing Assessment

MDH is working collaboratively with Stratis Health, the University of Minnesota Health Informatics Division, the Local Public Health Association and others to develop a more complete informatics framework for an ongoing Health Information Technology assessment in Minnesota.

## Goal 2 Progress: Interconnect Clinicians and Health Information Exchange

Health information exchange (HIE) is the secure electronic exchange of healthcare information across organizations that see the same client. The goal of HIE is to facilitate authorized access to and retrieval of a person's relevant clinical data—from all past clinics to the one seeing the person today—to provide safer, more timely, efficient, effective, equitable, confidential and patient-centered care.<sup>9</sup>

<sup>9</sup> <http://www.ehealthinitiative.org/pressrelease825A.msp>

There is growing consensus among public policymakers at national and state levels that health information exchange (HIE) will play a key role in addressing the mounting challenges facing the healthcare system while also recognizing that there remain significant legislative and policy changes that must take place to translate this consensus into reality. Some examples include lack of common standards needed to achieve full interoperability across systems, federal anti-kickback laws that prevent larger health organizations from providing EHRs to smaller clinics, lack of incentives for using HIT that adhere to current interoperability standards and aligning the costs and benefits of e-Health adoption. Also, and very importantly, privacy and confidentiality concerns over personal medical information, while able to be technically addressed, are serious policy issues that need to be resolved through public debate and policy making.

Formal organizations are now emerging to provide both form and function for health information exchange efforts. These organizations (sometimes called “Regional Health Information Organizations” or “RHIOs”) are typically geographically-defined entities which develop and manage a set of contractual conventions and terms, arrange for the means of electronic exchange of information and develop and maintain HIE standards.

Nationally, health information exchange initiatives differ in many ways, but those that experience the most success share the following characteristics:

- governance by a diverse and broad set of community stakeholders;
- adherence to a common set of principles and standards for the technical and policy aspects of information sharing between systems, addressing the needs of every stakeholder;
- implementation of a technical infrastructure based on national standards to facilitate interoperability between systems;
- implementation of a sustainable model that aligns the costs with the benefits related to health information exchange; and
- application of metrics to measure performance from the perspective of patient care, public health, provider value, and economic value.<sup>10</sup>

In Minnesota, at least six initiatives are emerging as test beds for health information exchange of clinical information. These projects and others are listed in Appendix D, “List of Key e-Health Projects in Minnesota.”<sup>11</sup>

The Minnesota Health Care Connection (MHCC) is one of the new projects underway. MHCC is a statewide effort focusing on interconnecting clinicians, consumers, payers and other health stakeholders for the purpose of electronically exchanging accurate and standardized health information. The formation of MHCC arose from work done by the MN e-Health Initiative throughout the spring of 2005, including a series of reports to create a framework for creating

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<sup>10</sup> Source: eHealth Initiative, Second Annual Survey of State, Regional and Community-based Health Information Exchange Initiatives and Organizations, August, 2005.

<sup>11</sup> Details of these projects can be found at: [www.health.state.mn.us/e-health/](http://www.health.state.mn.us/e-health/)

MHCC,<sup>12</sup> as well as a list of priority business opportunities: e-pharmacy, laboratory reporting, communicable disease reporting, and immunization information exchange.

Since July 2005, Stratis Health (the Minnesota Quality Improvement Organization) working in conjunction with MDH, has met with many stakeholder groups to seek input and commitment on the formation of MHCC. Through mid-2006, an Interim Board of Directors will develop a governance structure, create a business plan, investigate and recommend finance models, establish the organization's legal and tax structure and create the process for electing an ongoing board of directors for MHCC.

### **Goal 3: Personalize Care and Personal Health Records**

Consumer-centric information and knowledge is essential to good decision-making and informed consumer choices. The personalization of care encourages consumer empowerment to help individuals manage their health and healthcare and advocate for themselves in care settings. This goal includes the use of personal health records (PHRs) and prevention information that support healthy behaviors.

People use PHRs to securely manage the medications, conditions, immunizations, allergies, test results and other personal information for themselves and their family—information that is important for their physicians to know. It's a private and secure way for people to ask questions and learn how to take charge of their health. Through immediate and patient-authorized access to this personal health information, clinicians and patients with a chronic disease, such as diabetes, asthma or cancer, can monitor routine health information and findings. Likewise, a PHR for seniors helps coordinate the information about them among their families, institutions and providers—helping them to live in a more independent and healthy manner. Regardless of when and where the data is needed, the health information will be accessible to patients and those to whom they give access.

PHRs hold great promise for empowering consumers. However, a number of policy issues relevant to the application of PHRs need further discussion and resolution, including the scope of the content, the source of information, features and functions, interoperability with EHRs, data storage, technical approaches and privacy and security. In addition, the industry needs to find ways of making PHRs portable, so that people can take it with them when they transfer health plans or providers.

### **Goal 4: Population Health And Public Health.**

The main focus of Public Health is to help protect and improve the health of entire communities. The focus is on populations and on prevention, rather than treating diseases, disorders and disabilities in individuals.

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<sup>12</sup> Governance (<http://www.health.state.mn.us/e-health/summit/govreport.pdf>); Finance (<http://www.health.state.mn.us/e-health/summit/financereport.pdf>); and Architecture/Technology Standards (<http://www.health.state.mn.us/e-health/summit/techreport.pdf>)

Improvements in population and public health require a strong collaborative partnership with healthcare providers and others for the two-way exchange of timely, accurate and detailed information that enables assessment of community health, risk factors, research and the reporting of critical findings back to public and private officials and the public in ways that are useful to decision-making.

Recent events have underscored the urgent need for public health, healthcare and the public to have an interconnected system that has comprehensive, timely and accurate information. Terrorist acts, anthrax incidents and the possibility of pandemic influenza have turned the spotlight on the deficit in information system capacity and the limited ability to communicate across systems that currently exist in most state and local health departments. The need for rapid access to critical information – lab results, disease reports, birth and death records, disease surveillance data, preparedness data and knowledge sources – has never been greater. The public health system must have rapid and reliable technology to gather information, send it where it is needed, store it securely and use it effectively to control epidemics and respond to community fears.

### **Minnesota Public Health Information Network (MN-PHIN)**

The recommendation to implement a Minnesota Public Health Information Network (MN-PHIN) is described in the January 2005 report to the Minnesota Legislature.<sup>13</sup> The focus of the MN-PHIN initiative is to improve the interoperability between state and local public health department information systems as well as between public health and the healthcare system generally.

An objective of MN-PHIN is to help ensure healthy Minnesotans by empowering consumers with prevention information, supporting timely exchange of information and providing effective public health protection to individuals and communities.

The Robert Wood Johnson Foundation awarded MDH an InformationLinks grant in November 2005. Over the next year, the grant will support work to link the governance and operations of the MN-PHIN initiative with the MN e-Health Advisory Committee and MHCC. The project will gather information about exchange requirements for public health practitioners and clinicians in order to identify barriers, strategies and priorities for exchange. The MN-PHIN Steering Committee began meeting in February 2006 to establish policy and work on coordinating public health information exchange.

## **Progress on Addressing Priority Cross Cutting Issues**

### **Communication, Education and Leadership**

The e-Health initiatives affect widespread change and have an important impact on healthcare delivery and public health in America. A critical determinant to success is an effective communications plan to ensure understanding and support among clinicians, the public and policy makers.

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<sup>13</sup> <http://www.health.state.mn.us/divs/chs/schsac/MNPHINfinal.pdf>

The first Minnesota e-Health Summit was held in June 2005. Over 425 Minnesotans came to learn about emerging national and state e-health initiatives and discuss policy issues. In addition to hearing from internationally recognized e-health leaders, attendees learned about several innovative projects underway in Minnesota as well as reports from the MN e-Health Steering Committee and Workgroups.<sup>14</sup>

The Summit was a call to action and a crucial milestone on the road to advance improved health and healthcare for the citizens of Minnesota. Recognizing that interoperability is critical to the success of its efforts, MN e-Health announced recommendations for statewide health information exchange efforts.

A second Minnesota e-health full-day summit is planned for June 29, 2006.

### **Ensuring Privacy and Security**

Consumers are keenly aware of the potential risks associated with the automation and sharing of their medical and health information. These concerns can lead patients to withhold information from their clinicians that could be crucial for their care. Clinician concerns about privacy and security can lead to exclusion of sensitive information from medical records reducing the value of the record to other clinicians treating the patient and to researchers and public health officials.

There is growing understanding that, with conscious forethought and continuous care and attention, the use of information technology in healthcare can and should strengthen, not impair, the security and privacy of personal health information. Since the enactment of the federal Health Insurance Portability and Accountability Act of 1996 (HIPAA), we have had the benefit of a nationwide “floor” of strong privacy and security protections for identifiable health information.

In Minnesota, a variety of practices exist for the secure and authorized collection, access and distribution of health information. A process for harmonizing the policies and practices across healthcare organizations still needs to be established.

The Commissioner of Health has responded to a nationwide request for proposals (RFP) from the U.S. Department of Health and Human Services, under the Health Information Security and Privacy Collaboration (HISPC) project. If awarded, the HISPC contract will support the in-depth examination of privacy and security laws and business practices within Minnesota, focusing on those that affect the ability to exchange electronic health information, including electronic medical records. Under the HISPC project, the state of Minnesota, through the MN e-Health Advisory Committee, will use a structured process over the next year to identify variations in organization-level (e.g., health system) business policies and practices that result from state health information policy laws. The project will identify solutions to preserve privacy, address barriers to appropriate health information exchange and develop best practices to capitalize on the opportunities inherent in electronic recordkeeping to implement even stronger protections that are simply not possible with paper. Finally, the projects will develop a plan to implement

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<sup>14</sup> Audio/Slide presentations and other materials from the Summit can be accessed at <http://www.health.state.mn.us/e-health/>.

proposed solutions. Most critically, the combined work of the 40 states expected to receive funding will contribute to a national approach to harmonizing privacy and security laws, best practices and standards.

### **Financing and Incentives**

The successful application of Health Information Technology (HIT) in Minnesota depends upon a thorough understanding of the economic and financial characteristics of Minnesota's healthcare market and the effect of HIT on that market. Effective financial models are essential to the successful implementation of HIT because:

- HIT requires a significant initial capital outlay, with an ongoing investment of financial and staffing resources;
- financing is a major barrier, particularly for long term care, small (i.e., low volume), rural and safety net providers; and
- the economic benefit of HIT adoption may be difficult to quantify, particularly for small providers.

The Principles for Financing in the following sections were developed by MN e-Health and published in a report for the 2005 MN e-Health Summit.<sup>15</sup>

#### Minnesota Principles for HIT Financing

- HIT projects need to utilize the standards and technology needed for the secure health information exchange.
- Investments in HIT need to advance interoperability and progress toward an integrated system. These investments represent the top priorities for collaborative action.
- Ideally, there is alignment between the cost of HIT investments and the benefits received. Organizations that most directly receive the benefit of the adoption of HIT will be primary investors in this adoption.
- All payers, public and private, have a financial interest to invest in and adopt HIT to realize cost efficiencies and improve healthcare quality.
- Payers, purchasers and providers meeting consensus minimal levels of financial solvency are expected to plan and budget for HIT investments as part of their financial, IT and capital budgeting processes.
- State government subsidies, financing or incentives need to complement rather than displace private and federal government investment. The design and targeting of public sector investments should be based on an objective assessment of the public good derived from that investment, the private sector resources that may reasonably be expected to be tendered and the location and extent of financial barriers within the health system. Subsidies should only be provided to the extent needed to provide an acceptable return on investment or other benefit, and expenditures with a decent return on investment or cost/benefit ratio should finance themselves.
- Any public funds that finance HIT should:
  - focus on investments for long term care, small, rural, or safety net providers;

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<sup>15</sup> <http://www.health.state.mn.us/e-health/summit/financereport.pdf>.

- require a resource commitment from the recipient such as financial matching funds, (grants, partial loans, loan guarantees, etc.), in-kind staff contributions, demonstrated production of general public benefit, etc.; and
- require the implementation of systems that are interoperable and that have impact in the improvement of safety and quality.

### **Expansion of Rural Health Grants**

The 2005 legislature amended three existing state grant programs administered by the MDH Office of Rural Health and Primary Care to specify that electronic health records projects are eligible for grant support. The Rural Hospital Planning and Transition Grant and the Rural Hospital Capital Improvement programs fund rural healthcare facility improvements and strategic planning that responds to changes in conditions and preserves access to care. The Community Clinics Grant program supports clinical capacity for uninsured, underinsured and underserved populations.

During the FY 2006 grant cycle, a significant number of applicants to the Rural Hospital Planning and Transition Grant and Capital Improvement Programs sought support for the development or acquisition of electronic health record software and technology. Several hospitals seeking assistance for HIT adoption and development were awarded grants.

In contrast, applicants to the Community Clinics Grant program did not seek funding for the adoption of electronic health record technology. One explanation for the experience in the Community Clinics Grant Program is that these safety net clinics face what they perceive to be more immediate challenges providing basic services to their uninsured and underinsured patients and thus continue to request support for uncompensated care and other basic needs.

### **Conclusion**

In the last year, Minnesota has made important progress on e-Health by advancing toward each of the four broad strategic goals. However, the progress is uneven across the state and is slower in areas with fewer resources. Missed opportunities for federal resources continue. For example, our state was unable to apply for a grant from Connecting Communities for Better Health because we were not far enough along in developing our capacity to exchange data. In the words of one advisory committee member, “We need to not only make progress, we need to pick up speed.”

Governor Pawlenty’s 2006-2007 Supplemental Budget Recommendations include a request for \$12 million to fund a grant program to assist community-based collaborations between community clinics, hospitals, local public health systems, long term care facilities and other health care providers in the purchase and implementation of electronic health records. The grant program would focus on providing funding that is consistent with the recommendations and principles of financing developed by the Minnesota e-Health Advisory Committee. Passage of this grant program would support the e-Health mission and accelerate the achievement of its goals.

Progress will be made in critical areas during 2006:

- The Minnesota e-Health Summit 2006 and Pre-Summit Workshop will educate and inform health stakeholders on June 28 and 29, 2006;
- Work will begin in May, 2006, to harmonize and strengthen laws and policies related to health information security and privacy;
- Minnesota's statewide health information exchange, the Health Care Connection (MHCC), will be incorporated as a nonprofit organization and publish its initial business plan;
- A detailed report to the Legislature is planned for January 2007, which will define additional recommendations for action.

Ultimately, the success of MN-e-Health will depend upon strong and effective collaboration and partnerships, with clear oversight and direction provided by the statewide Advisory Committee. Minnesota has a strong history of successful public and private partnerships and a deep commitment to focusing on the common good. We also benefit from a wealth of experienced and knowledgeable individuals and organizations that are committing their time to advancing e-Health across our state. These assets have brought us a long way in a relatively short time. However, the policy, technical and fiscal challenges that still lie ahead are formidable. Effectively addressing them will require the combined support and commitment of the Legislature, the healthcare community and all of us as citizens. ●

## Appendix A

**Table 1: 2006 Estimated Level of Adoption of HIT in Minnesota (EHR and e-prescribing)**  
**Updated February 2006**

Table 1 shows the updated estimates of current HIT use in two key areas by different types of facilities and by physicians and nurses. Comprehensive data on HIT use in Minnesota is limited. A comprehensive assessment of HIT in Minnesota is needed and improved metrics and mechanisms for measurement are needed to monitor progress.

Domain	Facilities	Estimated Level of Adoption of HIT (EHR and e-prescribing)	Adoption Gap / Comment
Hospitals - Acute Care	136	<p style="text-align: center;"><b>Most hospitals are highly automated, but HIT systems are rarely interoperable within and between hospital systems, especially in administrative functions.</b></p> <p><b>Current Surveys: Data were provided by Minnesota hospital CEOs as responses to an American Hospital Association (AHA) survey in 2005 to assess EHR access to current medical information. Forty-nine percent of Minnesota hospitals (67/137) completed the survey from April 2005 to June 2005. In Minnesota, 19% of respondents have fully implemented EHR, 5% are testing, and 53% have partially implemented the EHR. Just 2% of respondents are not considering implementing EHR in the next three years.</b></p>	<p>Rural and smaller facilities have more difficulty achieving interoperability.</p> <p>Use of standards for interoperability and interconnectivity is needed.</p>
Hospitals - Non- Acute	10	<b>Very limited or no information currently available</b>	

Domain	Facilities	Estimated Level of Adoption of HIT (EHR and e-prescribing)	Adoption Gap / Comment
Clinics - Primary care (includes pediatric and women's clinics)	~650 systems	<p>~5-15%, In clinics, progress is being made in EHR implementation.</p> <p><b>Current Surveys: Data were provided as responses to a survey of adult (not including pediatric-only) primary care clinics conducted by Stratis Health in 2005 to assess current status of EHR implementation in MN. Seventy-five percent (603) of adult primary care clinics completed the survey from June 2005 to October 2005. In Minnesota, 46% of the responding clinics have implemented or are in process of implementing an EHR. Of the responding clinics, 26.6% have not implemented, with no plans of EHR implementation within the next 24 months.</b></p> <p><b>From the survey the top three barriers to implementation were:</b></p> <ul style="list-style-type: none"> <li>• <b>Lack of capital resources to invest in an EHR</b></li> <li>• <b>Concern about productivity loss during transition to EHR</b></li> <li>• <b>Concern about physician ability to input data into a computerized medical record</b></li> </ul>	<p>Small and rural clinics need significant assistance to implement EHR and e-prescribing.</p> <p><b>Top 3 government steps to implement EHR:</b></p> <ul style="list-style-type: none"> <li>• <b>Provide grant money to assist in the purchase of an EHR</b></li> <li>• <b>Provide tax credits for investment in EHR</b></li> <li>• <b>Provide low interest loans for the purchase of an EHR</b></li> </ul>
Clinics - Specialty care only	~200	No data is currently available	
Long term care facilities - Nursing Homes	396	~ 2% - 4% - This is from national estimates. Nursing homes have broad experience with Minimum Data Set (MDS) use.	<p>Few systems have clinical EHR and little interoperability and interconnectivity.</p> <p><b>Minnesota's nearly 400 nursing homes will have difficulty implementing electronic health record systems without financial support.</b></p>
Emergency	129	~ 10-12% - Emergency departments are improving access within the same health system.	Most still need timely access to

Domain	Facilities	Estimated Level of Adoption of HIT (EHR and e-prescribing)	Adoption Gap / Comment
Departments		~ 1%-3% - Rarely are EDs connected across health systems or clinics.	history, medications, tests and other critical information.
Local Public Health Departments	91	<p>Most local health departments use one of three major systems but the data sets are not standardized and the systems are not interoperable within departments and between state and other local departments.</p> <p><b>Current Surveys: Data were provided as responses to an MDH survey of Local Public Health Departments in 2004, known as the MN-PHIN Local Public Health Survey. Eighty-five percent (76/91) of Local Public Health Departments (including cities and counties) completed the survey from September 2004 to October 2004. Local Public Health has an approximate total of ~ 1200 data sets, ~ 1300 total applications used (4 – 51 per agency), and ~ 380 locally created (homegrown) applications. About two thirds of the reporting city/county agencies use one of these applications: CHAMP (31), CareFacts (4), or PH-DOC (19) Only 2% of Local Public Health data applications comply with standards for connecting. LPH uses at least 17 unique State and Federal data applications that do not interconnect.</b></p>	All local departments need to upgrade systems to current standards to achieve interoperability. Limited access to community-specific population information to support community policy decisions
Pharmacies	1502	Most are linked electronically with pharmacy claims and pharmacy benefit managers. Few are linked to allow e-prescribing by physicians needed for consumer safety.	Most need to add e-prescribing connections for physicians. Limited interoperability.
Clinical Laboratories	67	Primarily, laboratories are using automation and HIT, but only ~ 11% able to use current standards for electronic exchange. (CDC reports that there are currently eight Minnesota labs reporting electronic data on communicable disease surveillance).	Improve interoperability and exchange using HL7, LOINC, SNOMED and other standards
Health systems	10-12	<p>~ 25– 50% – Health Systems are in many cases doing strategic planning and have investments underway for cross system interoperability. Some have significant investments in operational EHRs.</p> <p>(e.g. HealthEast, Health Partners, Park Nicollet, Children’s, Mayo, MeritCare, SMDC, Fairview, Allina – large hospitals with clinic sites)</p>	Interoperability very limited for exchanging information. Cross system governance structure and policies not well developed. Few long-term financial models.
Home Care and Home Health	1281	~25 – 30% of Home Health Agencies/ Home Care use advanced EHR.	Varies by agency. None or limited interoperability

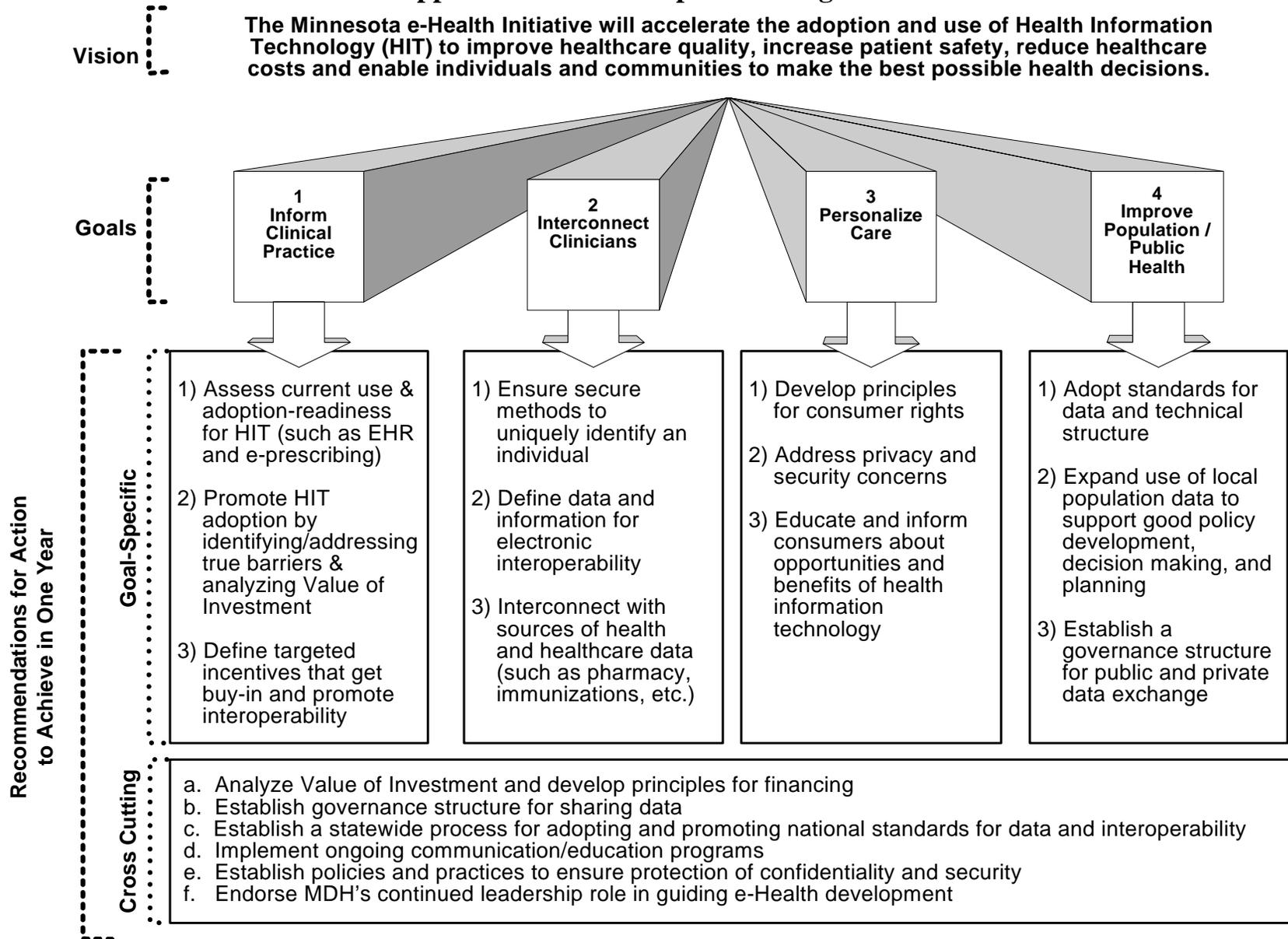
Domain	Facilities	Estimated Level of Adoption of HIT (EHR and e-prescribing)	Adoption Gap / Comment
Agencies			between most systems and partners.
Tele-medicine sites	~ 30-60	~ 10 – 15 % - estimated telemedicine use. Physicians are dependent on timely access to patient data at remote sites, often across institutional boundaries	Need improved interoperability for patient information.
Use by Physicians	~ 16,000	~17.55%-22.3% is an estimate, just factoring in the number of physicians in the large systems that we know are using EHRs. Significant management of process and necessary culture shifts will be required for adoption. Must learn different systems across facilities.	Large gap for easy-to-use, interoperable systems, financial models and limited training and support. Gap between technical capability and actual skilled use.
Use by Registered Nurses (RN)	~ 68,000	~ 17.55%-22.3% is an estimate of nurses who are using EHR or e-prescribing, a figure similar to the rate for physicians. The usage rate varies considerably by facility and amount of access to EHR. Significant management of process and necessary culture shifts will be required for adoption.	Limited informatics training opportunities for nursing. Limited evaluation and research on adoption of best practices
Use by consumers /patients	~ 5 Million	<0.2% of consumers have secure electronic access to their own personal health record such as a list of medications, lab tests, clinical procedures and preventive recommendations	Limited PHR services are currently offered. Portability of PHR is rare. Consumer education and training on the value of PHR is needed. Need to adopt standards and policy for use.

## **Appendix B**

### **2006-2007 Minnesota e-Health Initiative Advisory Committee Members**

Mary	Brainerd	Co-Chair
Mary	Wellik	Co-Chair
David	Abelson, MD	Institute for Clinical Systems Improvement
Alan	Abramson, PhD	HIPAA Collaborative
Kristin	Benson, MD	Physicians
Laurie	Beyer-Kroupenske	Department of Administration, State Government
Don	Connelly, MD, PhD	Academics and Research
Rhonda	Degelau	Clinics
Fred	Dickson	Health Plans
Raymond	Gensinger, Jr., MD	Professionals with Expert Knowledge
John	Gross	State Government
Marcelline	Harris, RN, PhD	Nurses
Betsy	Johnson	Consumer/MN Senior Federation
Deb	Switzer	Long Term Care
Mary	Klimp	Small Hospitals
Marty	LaVenture, PhD	MN e-Health Initiative
Katie	LeBeau	Pharmacists
Jennifer	Lundblad	Minnesota Quality Improvement Organization
Bobbie	McAdam	Health Plans
Rina	McManus	Local Public Health
David	Moertel, PhD	Minnesota Health Information Management Systems Society
Cindy	Nelson	Laboratories
Brian	Osberg	State Government Purchasers
Carolyn	Pare	Purchasers of Health Care
Kimberly	Pederson	Large Hospitals
Gregory	Thomas	Academics and Research

## Appendix C: Road Map for Strategic Action



## Appendix D: List of Key E-Health Projects In Minnesota

This list of 35 projects highlights and documents examples of key e-Health related projects in Minnesota. The list is part of a collection of project profiles collected by the Minnesota e-Health Initiative. The profiles are intended to support information sharing and knowledge exchange between interested persons and colleagues. They also contribute examples to help inform the e-Health Advisory Committee and other policy makers and foster collaboration between similar projects. \*Emerging health information exchange projects are denoted by an asterisk.

The profiles describing these initiatives and projects can be found at <http://www.health.state.mn.us/e-health/>

1. Anoka County Public Health Information Management System (PHIMS), *Anoka County Community Health & Environmental Services Department*
2. ATHENS Project, *College of St. Scholastica*
3. Baby Steps/Steps to Success, *Olmsted County Public Health Services/Olmsted County Community Services*
4. Children's Medical Organizer (CMO) Connect, *Children's Hospitals and Clinics of Minnesota*
5. \*Community Health Information Collaborative (CHIC), *CHIC*
6. \*Community-Shared Clinical Abstract to Improve Care, *Fairview Health Services*
7. Doctor's Office Quality - Information Technology (DOQ-IT), *Stratis Health, under contract to the Centers for Medicare & Medicaid Services, an agency of the U.S. Department of Health and Human Services*
8. e-Prescription Drug, *Minnesota Department of Human Services*
9. Evidence-Based Practices Project for Children's Mental Health, *Children's Mental Health Division of the Minnesota Department of Human Services*
10. Excellian, Allina Hospital & Clinics' Electronic Medical Record, *Allina Hospitals & Clinics*

11. Fairview – University of Minnesota Telemedicine Network, *University of Minnesota*
12. Health Match, *Minnesota Department of Human Services*
13. Health Profession Students and the PHR, *College of St. Scholastica*
14. HIT Strategic Plan of SW Minnesota Health Providers, *Minnesota Rural Health Cooperative*
15. HIT-based Regional Medication Management Pharmacy System, *Minnesota Wilderness Health Care Coalition*
16. \*Integrated Service Delivery Initiative – Electronic Health Records, *Northern Minnesota Network*
17. \*LTC e-Prescribing Standards Pilot, *Achieve Healthcare Technologies*
18. Minnesota Collaborative Planning Model: A Cross System Approach for Health Promotion, *Minnesota Board on Aging*
19. Minnesota e-Health Initiative, *Minnesota Department of Health*
20. \*Minnesota Health Care Connection, *Stratis Health*
21. \*Minnesota Immunization Information Connection (MIIC), *Minnesota Department of Health*
22. Minnesota InformationLinks, *Minnesota Department of Health*
23. Minnesota Public Health Information Network (MN-PHIN), *Minnesota Department of Health and Local Public Health Association of Minnesota*
24. Minor Parent - Bright Futures Program, *Shared by Olmsted County Public Health and Olmsted County Social Services*
25. \*MN HIPAA Collaborative – e-Health Initiative (RX/Medication History Project), *Minnesota's HIPAA Collaborative*
26. National Provider Identifier, *Minnesota Department of Human Services*

27. New Connections for Community Mental Health, *Minnesota Association of Community Mental Health Programs (MACMHP)*
28. Nursing Home Report Card, *Minnesota Department of Human Services & Minnesota Department of Health*
29. Sisu Medical Systems, *Sisu Medical Solutions*
30. Smart Cards, *Minnesota Department of Human Services*
31. Southeast Minnesota Immunization Connection
32. Spice/Bridge Live at Home/Block Nurse Programs, *Elderberry Institute*
33. State Operated Services' Electronic Health Record, *Minnesota Department of Human Services - State Operated Services*
34. Strategic Alliance for Chronic Care Management, *Blue Cross/Blue Shield*
35. \*Winona Health Community Record Data Exchange, *Winona Health*