



Minnesota e-Health Initiative

2019 REPORT TO THE LEGISLATURE

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Minnesota e-Health Initiative Report to the Legislature, 2019

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Contents

- Executive summary5
- Introduction.....7
- Minnesota’s e-health accomplishments and continued efforts7
 - Health information exchange to support better health.....7
 - HIE grants to support community health 11
 - MDH data strategy and interoperability to prevent and respond to public health needs 11
 - e-Health and the continuing opioid epidemic response 13
 - Emerging federal policy implications 14
 - The Minnesota e-Health Summit: Learning from each other 15
 - Administrative simplification as a model for clinical data efficiency 15
 - Looking toward the future..... 16
- Appendices 18
 - Appendix A: Minnesota e-Health Advisory Committee 18
 - Appendix B: E-health progress and measures..... 25
 - Appendix C: Health information exchange oversight..... 36
 - Appendix D: Minnesota e-Health HIE Task Force..... 43
 - Appendix E: Health care administrative simplification as part of e-health planning..... 46
 - Appendix F: Minnesota e-Health vision, mission and guiding principles 48
 - Appendix G: E-health standards 49



Protecting, Maintaining and Improving the Health of All Minnesotans

July 9, 2019

The Honorable Michelle Benson
Chair, Health and Human Services Finance and
Policy Committee
Minnesota Senate
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95 University Ave. W.
Saint Paul, MN 55155-1606

The Honorable Tina Liebling
Chair, Health and Human Services Finance Committee
Minnesota House of Representatives
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The Honorable Jim Abeler
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The Honorable Rena Moran
Chair, Health and Human Services Policy Committee
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To the Honorable Chairs:

As required by Minnesota Statutes, sections 62J.495 and 62J.498-4982, this Minnesota e-Health Initiative report outlines progress toward Minnesota's goals for health information technology.

Minnesota's health care system has undergone great transformation in the past decade, with providers across the care continuum moving into the information era of electronic health record (EHR) systems. However, the fundamental function of caring for a person requires more than an electronic system – his or her health information needs to be accessible to all of his or her health care team in a way that is easily integrated and understandable, and shared according to patient preferences.

Achieving this goal will require that all stakeholders work together. The Initiative has guided these efforts since 2004 and will continue to ensure that recommendations are developed and actions are implemented in a coordinated way to meet the needs of all Minnesotans.

Sincerely,

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Commissioner
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Enclosure:

2019 e-Health Report to the Legislature

Executive summary

Minnesota’s health care system has undergone great transformation in the past decade, with providers across the care continuum moving into the information era of electronic health record (EHR) systems. A variety of policies and technical developments have supported this journey, to the point where all of Minnesota’s hospitals and nearly all clinics are using electronic health record systems. Other key health providers such as long-term and post-acute care, mental health, local public health and social services have also moved into the electronic era. However, the fundamental function of caring for a person requires more than an electronic system – the person’s information needs to be accessible to all of his or her health care team in a way that is easily integrated and understandable, and shared according to patient preferences.

Achieving this “interoperability” of health information requires a basic infrastructure of technical standards, governance and trust to ensure that all parties follow common rules and the patient’s information is protected. No single organization can accomplish interoperability – to exchange health information across the state we must work together. The Minnesota e-Health Initiative (Initiative), a legislatively-mandated public-private collaborative, has guided these efforts since 2004.

Key activities and accomplishments

The Minnesota Department of Health (MDH) and the e-Health Advisory Committee led the following activities in 2018:

- Acted on the findings of an in-depth study of strategies for improving health information exchange (HIE) in Minnesota. MDH established an HIE Task Force of the e-Health Advisory Committee to develop strategic and implementation plans to expand exchange of clinical information to support care transitions between organizations. The Task Force will continue work in 2019 to develop plans for exchange of more robust health information.
- Awarded nearly \$400,000 in grants to support eight organizations and their partners to accelerate efforts to effectively use HIE to improve care delivery and coordination of health care services in support of improved population health.
- Acted on recommendations the Advisory Committee provided to Governor Dayton for e-health strategies to address the opioid crisis. MDH convened a workgroup to develop a strategy and plan to reach out to prescribers regarding their current e-prescribing practices and identify what support and resources they need to fully implement electronic prescribing of controlled substances to reduce fraud and diversion from paper prescriptions.
- Began work to improve MDH’s processes for receiving data from external partners that report individuals’ personal health information to MDH. These partners include hospitals, clinics, long-term and post-acute care, pharmacies, school clinics, and others. MDH has more than 20 programs that receive this data in a variety of ways, including electronic, fax, and even paper. The e-Health Advisory

Committee has encouraged MDH to simplify and streamline their reporting processes, optimizing the EHR systems and national standards used by these partners.

- Monitored and responded to federal rules and requests for information. Federal policies have a tremendous impact on e-health in Minnesota, with policies and incentives to drive use of technology, payment systems, reporting requirements, and patient privacy and consent policies. There was a flurry of federal activity in 2018 for which the Initiative led statewide coordinated responses, and several more responses are expected for 2019.
- Hosted the annual Minnesota e-Health Summit to celebrate progress, share experiences, and continue to work together to advance e-health across the state and the care continuum. The 2018 Summit, themed “Act today, impact tomorrow,” drew 300 attendees. The event showcased community collaboration and action and provided perspectives and experiences of Minnesota’s health community relating to health information exchange, information privacy, telehealth, quality reporting, analytics, care coordination, and more.
- Began identifying opportunities to leverage Minnesota Health Care Administrative Simplification model for clinical care. The administrative simplification model successfully streamlined exchange of administrative health data. There is great potential to use this collaborative process to develop consensus on best practices across the care continuum.

This annual report describes these recent accomplishments in more detail and identifies actions that are critical to improving the health of individuals and communities in Minnesota. MDH and the e-Health Advisory Committee recognize the need to build on past successes in order to meet the challenges in this dynamic and complex environment, and to take meaningful steps in 2019 towards building a sustainable health information exchange infrastructure that supports better and more efficient care, improved public health practice, and stronger communities. Cross-sector leadership and collaboration will be critical to the success of these efforts.

Introduction

Minnesota’s health care system has undergone great transformation in the past decade, with providers across the care continuum moving into the information era of electronic health record (EHR) systems. A variety of policies and technical developments have supported this journey, to the point where all of Minnesota’s hospitals and nearly all clinics are using electronic health record systems. Other key health providers such as long-term and post-acute care, mental health, local public health and social services have also moved into the electronic era. However, the fundamental function of caring for a person requires more than an electronic system – the person’s information needs to be accessible to all of his or her health care team in a way that is easily integrated and understandable, and shared according to patient preferences.

The Minnesota e-Health Initiative (Initiative), a legislatively-mandated public-private collaborative, has guided these efforts since 2004. This report summarizes the accomplishments and ongoing actions of the Initiative to advance individual and community health through the power of technology and information.

Minnesota’s e-health accomplishments and continued efforts

The Minnesota e-Health Initiative (Initiative) is a public-private collaborative that is guided by a legislatively-mandated 25-member advisory committee, convened and staffed by MDH, that has broad representation and support from health care providers, payers, and professional associations (see Appendix A).

Minnesota’s health care providers have had a tremendous uptake in adoption of electronic health record technology, with all hospitals and most clinics and nursing homes using electronic health record (EHR) systems (Appendix B). Despite these successes, much work remains to optimize the use of these systems—and the data stored within them—to improve patient care and support community health. In 2018 the Initiative focused much attention toward promoting health information exchange, using e-health to address the opioid misuse and abuse epidemic, introducing an agency-wide data strategy, and planning toward the future. These and other activities and accomplishments are described in more detail in the following sections of this report.

The Minnesota e-Health vision is that all communities and individuals benefit from, and are empowered by, information and technology that advances health equity and supports health and wellbeing.

Health information exchange to support better health

Health information exchange (HIE) is the electronic transmission of health-related data between organizations using nationally-recognized standards. HIE allows providers to securely share information with other providers or organizations using agreed-upon standards and according to patient preferences. Minnesota has made

progress on HIE, but information exchange is not yet occurring equitably or robustly among all health providers across the state. This means that some health organizations can exchange with some others, but not all others, and therefore a patient’s care too often continues to be inefficient and fragmented when they need to visit multiple providers or health systems. To have effective HIE, we need every health organization to participate in sharing necessary data, with each person’s information easily available when and where needed.

To help address this problem, the 2016 Minnesota Legislature requested a study to assess Minnesota's legal, financial, and regulatory framework for HIE, including the requirements of the Minnesota Health Records Act, and to recommend modifications that would strengthen the ability of Minnesota health care providers to securely exchange data in compliance with patient preferences and in a way that is efficient and financially sustainable. A summary of study findings is included in this report. The HIE study report was delivered to the Legislature in April 2018. A summary is describe in Appendix C, and the full report is available online at <http://www.health.state.mn.us/e-health/hie/study/index.html>.

At a foundational level, patients need their information to go with them between different health care organizations in order for their providers to make care decisions in a timely and efficient manner. With this flow of information, health providers can look up and retrieve patient information to prepare for a patient visit or coordinate transition from a hospital to nursing home. Providers can send information to another provider or organization that a patient sees.

HIE offers potential to make information much more useful to support patient care and health communities. For example, HIE allows providers across the care continuum to connect, consolidate patient information and use analytics to support better health outcomes.

HIE in Minnesota

Minnesota’s approach to HIE, described in Appendix D, is intended to support a market-based strategy that relies on communities and the private sector to develop innovative solutions that meet the needs of Minnesotans and our health care market. It has resulted in providers having the ability to choose among a wide range of HIE options, all offering different services and pricing structures. As a result, we have different organizations connected to different HIE networks, without a common way for all health organizations to connect to each other. Because of the variety of connections, Minnesota’s health organizations:

- Need to manage multiple point-to-point connections and/or rely on inefficient manual workarounds to exchange some or all shared health information.
- May need to establish separate connections to various networks, health organizations, health plans, and government agencies.

Without a basic flow of information, research has shown that patients are more likely to receive repeat exams and/or tests, need to repeatedly describe their situation to multiple care providers, deal with uncoordinated care, face care delays, and potentially receive poor care.

Jung, H-Y, et al., 2015. “Use of Health Information Exchange and Repeat Imaging Costs.” Journal of the American College of Radiology, 12(12 0 0): 1364-1370.

- Dedicate time and financial resources to establish unique agreements and processes to maintain each of those connections, and manage issues in getting different systems to “speak” to each other effectively. This inefficiency takes resources away from patient care and adds costs to the health care system.

In order to achieve the foundational level of HIE these networks need to be connected, so that information can flow securely across organizations even when they belong to different networks. This concept of “connected HIE networks” means that each of these networks has a connection to each other network and all can exchange clinical information with each other using uniform standards and rules. Any organization that participates with any of those networks is then connected to all of the organizations participating in any of the networks.

Moving forward

Over time, many stakeholders have expressed frustration about the gaps in foundational HIE in Minnesota. They see HIE as necessary for value-based payment arrangements and other health reform efforts to reach their full potential.¹ Consumer demand for information has evolved as technology has evolved. Research shows that Minnesotans expect their information to move with them as they navigate the health care system.² Further, technology has evolved to ease implementation of HIE for providers across the care continuum.

Many providers face barriers to HIE because of the Minnesota Health Records Act (MHRA), which governs how health information can be used and shared in Minnesota. It includes some provisions with unintended consequences that inhibit HIE, including misalignment with the Federal Health Insurance Portability and Accountability Act of 1996 (HIPAA). This creates technical and workflow challenges because standards for EHR systems, many of which are sold and intended to operate across state lines, are designed to manage consent as required by HIPAA. There are also varied interpretations of MHRA across provider systems that lead to a reluctance to share information, delays in care, duplication of services, and patient frustration at the need to repeatedly sign for consent.

HIE requires up-front investments and ongoing funding for HIE infrastructure, onboarding providers, workforce training, and management of ongoing HIE transactions and workflows. However, stakeholders increasingly see

Consumer quotation:

“As a health care consumer I expect my providers to share information to coordinate my care. I don't want to have to tell my story to multiple providers. At the time I am contacted to schedule an appointment my verbal consent authorizes my providers to access my electronic health record to capture data needed to be prepared to address my needs.”

¹ Minnesota Health Care Financing Task Force Final Report, 2016. Available at: https://mn.gov/dhs/assets/final-materials-final-report_01-28-2016_tcm1053-165972.pdf

² Minnesota Department of Health, 2017. Impacts and Costs of the Minnesota Health Records Act. Available at: <http://www.health.state.mn.us/e-health/legrpt/docs/rfi-health-record-act2017.pdf>.

potential for value in HIE to efficiently and effectively coordinate ongoing care, support accountable health, and enhance administrative efficiencies and cost containment.

Minnesota e-Health HIE Task Force

The primary recommendation from the HIE study was to move Minnesota in the direction of a connected networks approach that will provide essential HIE services accessible to all stakeholders statewide, and to align with and build upon national initiatives. To achieve this, MDH established an HIE task force of the e-Health Advisory Committee to develop strategic and implementation plans for the connected networks approach by focusing on actions and policies to:

- Expand exchange of clinical information to support care transitions between health organizations.
- Expand event alerting (for admission, discharge, and transfer) to support effective care coordination.
- Identify, prioritize and scope needs for ongoing connected networks and HIE services with the goal of optimal HIE.

The Minnesota e-Health HIE Task Force (HIE Task Force) was endorsed by the Advisory Committee in April 2018 and first convened in May 2018. They met six times in 2018 and developed the following recommendation to begin to achieve foundational HIE. This recommendation was endorsed by the Minnesota e-Health Advisory Committee.

Exhibit 4: HIE Task Force Recommendation 1 to Enable Foundational HIE Using the eHealth Exchange

This recommendation addresses three categories of health organizations:

1. Health systems and providers that are not eHealth Exchange Participants become Minnesota State-Certified Health Information Organization (HIO) Participants.
2. Minnesota HIOs each become an eHealth Exchange Participant and establish, test and maintain a connection to other eHealth Exchange Participants in the state.
3. Health systems that operate facilities in MN and are eHealth Exchange Participants:
 - a. may become Minnesota State-Certified HIO Participants OR;
 - b. will use the eHealth Exchange to establish, test, and maintain a connection to all Minnesota HIOs.

An implementation plan for this recommendation is being developed by a subgroup of the HIE Task Force.

The HIE Task Force has also reviewed multiple options for centralized HIE services, which are shared resources that all organizations can access and use rather than managing their own. The HIE Task Force members have indicated a preference for three services to be part of the connected networks, has reviewed governance frameworks used in Minnesota and other states, and discussed essential elements for a five-year interim governance plan for the connected networks. To date these elements include:

- **Formalized participant agreement, policies and procedures** (e.g., consent policy, rules of the road; reporting and auditing; data protection; accountability; ensuring legal and regulatory compliance)
- **Determining governance** (e.g., composition of governance body, including roles and responsibilities; decision making processes; oversight, fees and costs; conflict resolution)
- **Ensure sustainability** (e.g., responsibility for funding, revenue and sustainability; encouraging/incentivizing participation; enabling and ensuring full adoption)
- **Defined services** (e.g., define minimum functionality; service definition and data; roadmap for workflow and priority use cases; implementation of shared services; ensure functionality of network)
- **Data standards and usage** (e.g., permitted purposes; access policy; responsibility for assessing data quality and completeness; data stewardship; data standards, uniformity and normalization; discrete data to get to optimal HIE; trust framework)

The HIE Task Force charge, deliverables, membership, and representation are described in Appendix E. This HIE Task Force and work will continue through at least May 2019 to address the full set of deliverables. Information is available at: <http://www.health.state.mn.us/e-health/hie/taskforce/index.html>.

HIE grants to support community health

In 2018, Minnesota’s HIE grant program awarded a first round of nearly \$400,000 in grants to support eight organizations and their partners. Grant funds are used to accelerate efforts to effectively use HIE to improve the coordination of health care services and improve service quality to help reduce medical errors, health disparities, and chronic disease as well as improve overall population health.

The selected organizations received grants ranging from \$13,000 to \$98,000 to establish a connection to one of Minnesota’s State-Certified Health Information Organizations (HIOs). The grant awards will help provide financial assistance to these Minnesota health and health care providers to support implementation of event alerting/notifications and care summary document exchange and to support care coordination.

Exhibit 5 shows the organizations, grant amounts and locations for the 2018 grantees.

Exhibit 5: 2018 Minnesota HIE Grant Program Awardees

Organization	Grant Amount	Location
Christopher J. Wenner MD, PA	\$21,130	Cold Spring
Minnesota Rural Health Cooperative	\$98,000	Cottonwood
Saint Louis County	\$13,000	Duluth
Altair ACO	\$40,875	St. Paul
Partnership4Health	\$45,000	Fergus Falls

Gillette Children's Specialty Healthcare	\$66,283	St. Paul
FUHN	\$35,700	St. Paul
Lakewood Health System	\$48,000	Staples

MDH data strategy and interoperability to prevent and respond to public health needs

Data is a core component of public health. Public health uses data from a broad range of sources to improve our preparation for, and response to, public health challenges and emergencies. For example, data are used to conduct disease outbreak investigations, to assess the health of populations, to refer individuals for public health services, and conduct other essential public health services.

Examples include:

- Communicable disease reporting (e.g., tuberculosis, influenza)
- Immunization registration and forecasts for needed immunizations
- Cancer surveillance
- Blood lead surveillance
- Stroke, trauma, brain/spinal injuries reporting and quality improvement
- Child health screening and supports - newborn screening, birth defects, early hearing detection
- Birth and death records

The Minnesota Immunization Information Connection (MIIC) receives over 2.5 million immunization-related messages per month. Interoperability between MIIC and electronic health record systems across the state helps ensure Minnesotans get the right vaccines at the right times and prevent disease in our communities.

A wide variety of external partners report individuals' personal health information to MDH. The data are submitted pursuant to requirements in state law and are subject to Minnesota data practices statutes. These partners include hospitals, clinics, long-term and post-acute care, pharmacies, school clinics, and others. MDH has more than 20 programs that receive this data in a variety of ways, including electronic (structured and unstructured data), fax, and even paper. The e-Health Advisory Committee, along with many individual health care organizations across Minnesota, has encouraged MDH to simplify and streamline their reporting processes, optimizing the EHR systems and national standards used by these partners.

MDH is working to improve reporting for external stakeholders and better coordinate information once it is within MDH's walls. A newly-established Office of Data Strategy and Interoperability, working with OHIT and MDH leadership, is developing a strategic plan and roadmap to guide implementation of a more coordinated and strategic approach to interoperability. MDH has secured 90% federal funding (with a required 10% state match) to support efforts to develop and implement a coordinated data strategy that will support uniform data and interoperable use of data between external stakeholders and MDH programs.

This work is important to both MDH external partners and to MDH to improve data timeliness, quality, and more efficient and effective ways of using data. The value for external partners includes:

- Fewer processes for connecting to MDH
- Data already collected in electronic health records and existing health information exchange connections
- Greater efficiencies and cost savings
- Ability to plan their strategic investments by having more time to coordinate and plan with MDH

The value for MDH programs includes:

- Single or reduced paths for data reporting and exchange
- Greater efficiency and cost savings
- Better data quality
- Alignment with Minnesota's health information exchange assets
- Shared strategic investments

In 2018, MDH secured funding to move forward with a more coordinated approach to interoperability between MDH and our partners. In 2019, MDH will focus on the following priorities:

- Develop governance processes for shared decision making with internal and external partners
- Develop a strategic roadmap for MDH in collaboration with our partners
- Make investments in shared infrastructure to enhance capabilities and lower administrative costs due by streamlining connections to multiple reporting relationships

e-Health and the continuing opioid epidemic response

Recommendations to the governor

In 2017 Governor Dayton requested the Minnesota e-Health Advisory Committee to provide recommendations for using e-health to prevent and respond to opioid misuse and overdose. The Advisory Committee, with input from the Opioids and e-Health Steering Team and OHIT, developed seven recommendations, summarized below and described in greater detail at: <http://www.health.state.mn.us/e-health/advcommittee/docs/recommendations.pdf>.

1. Increase the rate of e-prescribing of controlled substances (EPCS) to address diversion.
2. Improve the Minnesota Prescription Monitoring Program (PMP) so prescribers can easily use the system as part of their normal workflow. The PMP is a tool used by prescribers and pharmacists to know what controlled substances a patient has been prescribed.
3. Expand the permitted uses of Minnesota Prescription Monitoring Program data so analysts can better monitor misuse.

4. State agencies and associations should review, update, and provide education on e-health and opioids policies and guidelines to ensure best practices and clinical guidelines are understood and implemented into practice.
5. Expand access to services and care enabled by telehealth, telemedicine and other forms of virtual technology to fill access gaps in opioid tapering and withdrawal, chemical dependency, mental health, and alternative pain treatment and services.
6. Support state agencies and stakeholders in participating with statewide coordinated health information exchange services.
7. The Minnesota Department of Health should assess the gaps in current information and information systems used to prevent and respond to substance misuse and overdose and identify resources needed to fill those gaps.

While the legislature did not enact legislation related to these recommendations, the Advisory Committee and its stakeholders continued to prioritize work to mitigate the opioid epidemic in 2018:

- The Initiative convened, in fall of 2018, an e-Prescribing Workgroup to develop a strategy and plan to reach out to prescribers regarding their current e-prescribing practices and identify what support and resources they need to fully implement EPCS. The workgroup is also addressing other technical and workflow issues that are inhibiting full and efficient e-prescribing practices.
- The Initiative will also monitor and respond to proposed rules relating to H.R. 6 – SUPPORT for Patients and Communities Act, with implications for electronic prescribing, electronic prior authorization, and related e-health topics.
- The Minnesota Board of Pharmacy, in 2018, updated the PMP to better incorporate prescriber access within the EHR workflow.
- OHIT and MDH’s Injury and Violence Prevention Section are using federal funds to assess options for electronic standards-based exchange between emergency departments and MDH for drug overdose surveillance.

Emerging federal policy implications

Federal policies have a tremendous impact on e-health in Minnesota. The federal Department of Health and Human Services drives many incentives and actions based on these key areas:

- Technology policies from the Office of the National Coordinator for Health Information Technology (ONC), which advises on standards and certifies EHR systems.
- Payment incentives and quality reporting requirements from the Centers for Medicare and Medicaid Services (CMS), which drive the capabilities required for certified EHR systems.
- Public health reporting/feedback from the Centers for Disease Control and Prevention (CDC), which impacts how providers send required public health data.
- Patient privacy and consent policies from the Office for Civil Rights relating to HIPAA modifications.

An important role of the Initiative is to monitor these policies, respond to proposed rules and requests for information, and determine what guidance is needed for Minnesota providers to comply with federal requirements. There was a flurry of federal activity in 2018 for which the Initiative led statewide coordinated responses, including:

- Trusted exchange framework for health information exchange.
- Payment policies relating to EHR incentives, shared savings programs, and quality programs.
- Recommended e-health standards.
- Rules relating to HIPAA and patient consent to share information.

The Initiative anticipates more coordinated response activity in 2019 and will continue to engage Minnesota stakeholders to ensure that their perspectives are recognized by federal agencies. Information on these coordinated responses is at: <http://www.health.state.mn.us/e-health/coordresponse/index.html>.

The Minnesota e-Health Summit: Learning from each other

Each June since 2005 healthcare stakeholders from around the state have gathered at the Minnesota e-Health Summit to celebrate progress, share experiences, and commit to continuing to work together to advance e-health across the state and the care continuum. The 2018 Summit, themed “Act today, impact tomorrow,” drew 300 attendees to the Earle Brown Heritage Center in Brooklyn Park.

Plenary sessions showcased community collaboration and action from Umair Shah, MD, Executive Director, Harris County Public Health (Texas). He shared how the Houston area harnessed innovation, engagement and equity across their community to advance health and wellbeing, and to respond promptly and effectively to the Hurricane Harvey natural disaster of 2017. Attendees also heard from patient-engagement advocate Liz Salmi, who shared her personal insights on the power of information to support healing and wellbeing.

Breakout sessions provided perspectives and experiences of Minnesota’s health community relating to health information exchange, information privacy, telehealth, quality reporting, analytics, care coordination, and more. Attendee reviews of the Summit were resoundingly positive, reflecting the bounty of opportunity as e-health begins to turn the corner from technical implementation to useful tools and information.

The 2019 Summit, themed “Information that works,” is poised to help our state accelerate out of the turn and empower our communities to advance health. Information is at: <http://www.health.state.mn.us/e-health/summit/index.html>.

Administrative simplification as a model for clinical data efficiency

Much of the Initiative’s effort focuses on the rationale, challenges, and strategies for improving the exchange and use of clinical patient data. However, a key objective of the Initiative is to also improve the flow and use of health care data between health care providers and payers that are needed primarily for billing and payment (administrative data). While often largely unseen and unknown by policymakers and the public alike, the current volume of routine health care financial transactions, such as insurance eligibility determinations and

claims documentation, is staggering at an estimated 13 billion routine business transactions each year between health care providers, payers, and others in the United States. Administrative data are often collected and shared using outmoded and/or manual processes, contributing significantly to the country's high administrative costs.^{3,4} In today's environment, health care administrative data are increasingly recognized as a source of critical information that can and should be integrated more fully with clinical data to improve health and the health care system.

Emerging new health care payment and delivery options and requirements are creating demands for integrating financial and clinical data for the most complete, detailed picture of the performance of the health care system possible. For example, care payment and delivery models such as accountable care organizations (ACOs) rely on combined financial and clinical data to assess and demonstrate their value, and to be correspondingly paid and rewarded. Increasingly, ACOs will need new forms of integrated, comprehensive clinical and administrative data for planning and innovating to be successful. Even more broadly, the health care system needs the power of seamless financial, clinical, and other "big data" to meet modern challenges. These challenges range from effective care coordination to public health emergency response to epidemics or natural disasters, and also to fulfill the goals of the 21st Century Cures Act "to accelerate the discovery, development, and delivery of 21st Century cures, and other purposes." (Public Law 114-255).

OHIT now oversees the administrative uniformity efforts in Minnesota. Working with the Initiative, OHIT will identify opportunities to implement this model of stakeholder consensus to establish best practices and common processes relating to clinical data and related e-health issues. More information about these efforts, including a summary of 2018 administrative uniformity efforts conducted pursuant to Minnesota Statutes, Section 62J.63 and intended to meet the annual reporting requirements under that chapter, is presented in Appendix F.

A Call to Action for 2019 and Beyond

The Minnesota e-Health Initiative's vision is that all communities and individuals benefit from, and are empowered by, information and technology that advances health equity and supports health and wellbeing. This report describes the tremendous evolution that Minnesota's health providers have made into the electronic era and the important efforts to date to achieve the vision. Health records and administrative documentation for our hospitals, clinics and nursing homes are largely electronic, and other providers across the care continuum are implementing electronic systems. Accountable health payment models are creating financial incentives for health providers to collaborate more effectively with social services and local public health to

³ Papanicolas, I, L. Woskie, A. Jha. "Health Care Spending in the United States and Other High-Income Countries." *JAMA* 2018;319(10):1024-1039. doi:10.1001/jama.2018.1150, available at <https://jamanetwork.com/journals/jama/fullarticle/2674671>.

⁴ CAQH. "2017 CAQH Index: A Report of Healthcare Industry Adoption of Electronic Business Transactions and Cost Savings." Available at: <https://www.caqh.org/sites/default/files/explorations/index/report/2017-caqh-index-report.pdf>

address a broad array of factors that impact a person's health and wellbeing. The Initiative's stakeholders see the great opportunity offered by an electronic and interoperable health ecosystem, but also recognize that long-standing gaps and barriers – legal, financial, and structural – need to be addressed in order to achieve that promise.

A critical need remains to establish a plan for electronic health information exchange across the state, across our borders, and across the care continuum in support of the vision of the e-Health Initiative. Without this, the people of our state will not have their health information available to their providers. Their care team(s) will not be able to efficiently and effectively manage their care. Minnesota's public health system will lack a critical data infrastructure to support population health and emergency management. Findings from the 2017 HIE study revealed that these opportunities are in reach and are what our state wants – if we can find a way to surmount the structural and competitive barriers that have sometimes impeded progress. The ensuing HIE Task Force is charged with developing recommendations to develop a plan to achieve HIE in a way that aligns with our health care market and dynamic evolution at the regional and national level.

In 2019 the HIE Task Force is expected to submit recommendations that will require action on the part of Minnesota's health organizations, the state and multiple state agencies, and the legislature. The recommendations will be framed around the legal, financial, and regulatory framework needed for statewide HIE. These are interdependent legs of the stool – financing alone will not ensure statewide participation, nor will a mandate or regulations. The formula for success will require organizational changes, investments, and agreement to uniform practices across many facets of the health system to ensure that organizations participate and use the appropriate technical foundation for data exchange. The Initiative alone cannot ensure these changes will occur.

While these HIE-related efforts are a high priority, the Initiative will also work to address the e-health needs of our stakeholders to provide care for their communities. Some needs are detailed nuances, such as enabling electronic prescribing of controlled substances among all of our prescribers, implementing new standards, or identifying barriers to a fully-implemented e-health ecosystem. Others span a broad perspective, such as monitoring federal and national activities to coordinate input from Minnesota stakeholders. Regardless of the activity, the collective input and expertise of the Initiative is critical to the success of our health system and the health of all Minnesotans.

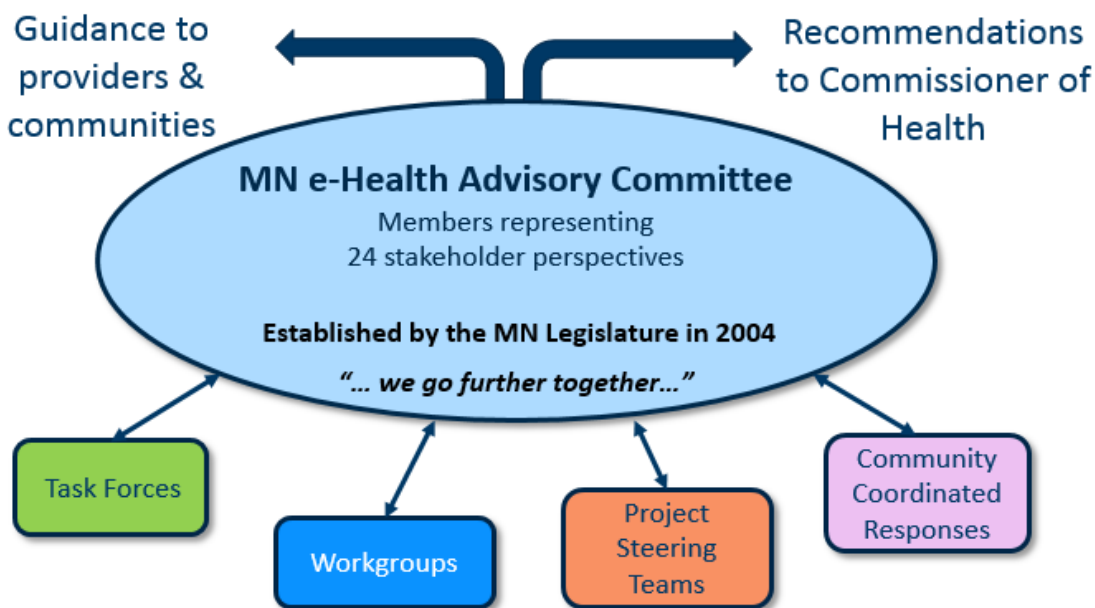
Appendices

Appendix A: Minnesota e-Health Advisory Committee

The Minnesota e-Health Initiative first convened in 2004 when the state’s health community recognized that a successful transition into the era of technology and electronic information would require collaboration that includes stakeholders across the community. The initiative’s vision is that all communities and individuals benefit from and are empowered by information and technology that advances health equity and supports health and wellbeing.

The work of the Minnesota e-Health Initiative is guided by the legislatively-chartered Minnesota e-Health Advisory Committee. Members represent the spectrum of Minnesota’s health community including providers, payers, researchers, vendors, and consumers (see the member list and representation, below). Activities of the Initiative are coordinated by the Minnesota Department of Health (MDH), Office of Health Information Technology (OHIT), which organizes and convenes meetings, workgroups, and coordinated responses to federal rulemaking related to e-health. Each year, the Advisory Committee charts workgroups on timely e-health topics comprised of subject matter experts, providers and patients to inform policy recommendations to the Commissioner of Health. The workgroups will also develop and endorse guidance to providers and communities of health. Because of collaboration and forward-thinking problem solving, Minnesota is a national leader in implementation and effective use of e-health. Exhibit A-1 shows how the Advisory Committee develops recommendations and guidance to the community.

Exhibit A-1: Minnesota e-Health path to policy diagram



Key historic accomplishments

The past and current actions of the Initiative are organized into six key categories, described below with actions summarized by year.

- Legislation related to e-health
- Funding to support e-Health
- Community guidance and resources
- Reports and recommendations to policymakers
- Annual Minnesota e-Health Summit
- Federal and national input

Legislation related to e-health

Minnesota is a leader in pursuing innovative e-health legislation to accelerate the adoption and use of e-health. These policies have resulted in Minnesota leading the nation in EHR adoption and use and e-prescribing for many years.

2004	Minnesota e-Health Initiative Established by Minn. Stat. §62J.495
2007	Health Records Act Recodified, Privacy Enhanced by Minn. Stat. §§144.291-144.298
2007	2015 Mandate for Interoperable EHRs Enacted by Minn. Stat. §62J.495
2008	2011 Mandate for e-Prescribing Passed by Minn. Stat. §62J.497
2010	HIE Oversight Law Passed by Minn. Stat. §§62J.498 – 62J.4982 (revised 2015)

Funding to support e-health

Since 2006, Minnesota has provided grants and loan to assist providers, organizations and community collaboratives in meeting the e-health mandate and achieving the Initiative’s vision and mission. The grants and loan programs are developed with support by the Initiative. This has led to over 131 awardees representing 529 participating organizations awarded \$23 million.

2006	12 awardees eligible for \$1.3 million for EHR adoption and use.
2007-2008	36 awardees eligible for \$7.0 million for EHR adoption and use.
2008-2015	16 awardees eligible for \$8.0 million in revolving loans for EHR adoption and use.
2011-2012	45 awardees eligible for \$3.4 million for HIE adoption and use.
2014-2015	22 awardees eligible for \$5.0 million for using e-health for accountable care.
2018-2019	8 awardees eligible for \$400,000 to effectively use HIE.

Community guidance and resources

The Initiative develops and publishes guidance and resources to support the adoption of e-health, address community concerns around state and federal legislation, and to improve how information is collected, used, and shared.

2008	A Prescription for Meeting Minnesota’s 2015 Interoperability Electronic Health Record Mandate: A Statewide Plan
2008	Addressing Common Barriers to EHR Adoption Guide
2009, 2015	A Practical Guide for e-Prescribing
2009	A Practical Guide to Effective Use of EHRs
2009-2011	Standards Recommended to Achieve Interoperability in Minnesota
2010-2012	Meaningful Use/HITECH Calls
2012	A Practical Guide to Health Information Exchange
2013, 2016	Understanding the Minnesota Interoperable EHR Mandate
2014	Security Risk Analysis Tip Sheet
2014	HIPAA, Minnesota’s Health Records Act, and Psychotherapy Notes
2015	A Practical Guide to Understanding HIE, Assessing Your Readiness and Selecting HIE Options in Minnesota
2016	Foundations in Privacy Toolkit
2016	Minnesota e-Health Roadmap for Behavioral Health, Local Public Health, Long-Term and Post-Acute Care, and Social Services
2016	The Minnesota 2016 Electronic Prior Authorization Requirements: Implementation and Compliance
2016	Minnesota Health Information Exchange Framework and Guidance to Support Accountable Health
2017	Minnesota e-Prescribing Mandate: Guidance & Compliance
2017	FAQ for e-Prescribing of Controlled Substances
2017	Connecting Communities with Data: A Practical Guide for Using Electronic Health Record Data to Support Community Health
2017	Privacy and Consent Primer for County Attorneys

Reports and recommendations to policymakers

The Initiative responds to requests from the policymakers, including the health commissioner and governor, to address specific health topics. Recent topics include Opioids and e-Health Recommendations and Health Information Exchange Legislative Study.

2005-2018	Minnesota e-Health Initiative Annual Report to the Legislature
2012	Recommendation for Commissioner of Health to endorse Learning Health System
2013	Minnesota Health Records Access Study
2014	Recommendations Regarding the Use of Standard Nursing Terminology in Minnesota
2015	Recommendation for MDH HIE and Interoperability Strategy and Action Plan
2017	Impacts and Costs of the Minnesota Health Records Act
2017	Opioid and e-Health Recommendations
2018	Health Information Exchange Legislative Study

Annual e-Health Summit

The Initiative sponsors an annual statewide e-Health Summit each year. Objectives of the Summit are to disseminate results, share lessons learned, and hear about community models that exemplify the Initiative's vision. This event draws an audience of over 350-400 leaders and professionals from across Minnesota.

- 2005 A Private-Public Call to Action
- 2006 Building Momentum
- 2007 Connecting Minnesota
- 2008 From Vision to Action
- 2009 Strategies for Success
- 2010 Leveraging Meaningful Use
- 2011 Accelerating e-Health Across the Continuum of Care
- 2012 Maximizing Value for Individuals and Communities
- 2013 Connecting, Optimizing, Transforming
- 2014 Looking Back to Celebrate. Looking Forward to Innovate
- 2015 Connecting Communities to Advance Population Health
- 2016 Closing the Gaps to Achieve Healthy Communities
- 2017 Connectivity. Equity. Health.
- 2018 Act Today, Impact Tomorrow

Federal and national input

The Initiative provides federal and national input through a variety of methods. The most common are coordinated responses to a proposed rule that share the expertise and experience of the Initiative.

- 2009 U.S. Department of Health and Human Services (HHS) interim final rule for civil money penalties for established violations of HIPAA's Administrative Simplification rules.
- 2009 Implementation Standards related to Meaningful Use
- 2009 Federal Trade Commission's Breach Notification Requirements
- 2010 Modifications to the HIPAA Privacy, Security, and Enforcement Rules Under the Health Information Technology for Economic and Clinical Health Act Proposed Rule
- 2010 Draft Criteria of Health Information Exchange Accreditation Program of the Electronic Health care Network Accreditation Commission
- 2011 Preliminary Meaningful Use Objectives and Measures for Stages 2 and 3
- 2012 2014 Edition EHR Standards and Certification Criteria Proposed Rule
- 2012 Electronic Health Record Incentive Program - Stage 2 Proposed Rule
- 2013 Stage 3 Definition of Meaningful Use of EHRs
- 2015 EHR Incentive Program – Stage 3 Proposed Rule
- 2015 2015 Edition Health IT Certification Criteria
- 2015 2015 Interoperability Standards Advisory
- 2015 2016 Interoperability Standards Advisory
- 2016 Medicare Access & CHIP Reauthorization Act Proposed Rule
- 2018 Draft Trusted Exchange Framework

- 2018 IPPS Medicare and Medicaid EHR Incentive Programs Proposed Rule
- 2018 Interoperability Standards Advisory
- 2018 PFS MIPS Medicare and Medicaid EHR Incentive Programs Proposed Rule

Minnesota e-Health Advisory Committee Members (2018-2019)

Alan Abramson, PhD, *Advisory Committee Co-Chair*, Senior Vice President, IS&T and Chief Information Officer, HealthPartners Medical Group and Clinics
Representing: Health System CIOs

Sonja Short, MD, *Advisory Committee Co-Chair*, Associate CMIO, Fairview Health Systems
Representing: Physicians

Sunny Ainley, Associate Dean, Center for Applied Learning, Normandale Community College
Representing: HIT Education and Training
Co-Chair: e-Health Workforce Workgroup

Constantin Aliferis, MD, MS, PhD, FACMI, Chief Research Informatics Officer, University of Minnesota Academic Health Center
Representing: Academics and Clinical Research

Laurie Beyer-Kropuenske, JD, Acting Assistant Commissioner
Representing: Minnesota Department of Administration

Jennifer Fritz, MPH, Director, Office of Health IT, Minnesota Department of Health
Representing: Minnesota Department of Health

Cathy Gagne, RN, BSN, PHN, St. Paul-Ramsey Department of Public Health
Representing: Local Public Health

Mark Jurkovich, DDS, MBA, Dentist, Gateway North Family Dental
Representing: Dentists

Jennifer Lundblad, PhD, President and Chief Executive Officer, Stratis Health
Representing: Quality Improvement

Bobbie McAdam, Vice President, Information Technology, Medica
Representing: Health Plans

Jeyn Monkman, MA, BSN, NE-BC, Institute of Clinical Systems Improvement
Representing: Clinical Guideline Development

Lisa Moon, PhD, RN, CEO Advocate Consulting
Representing: Nurses

Heather Petermann, Division Director, Health Care Research & Quality, Minnesota Department of Human Services

Representing: Minnesota Department of Human Services

James Roeder, Vice President of IT, Lakewood Health System

Representing: Small and Critical Access Hospitals

Peter Schuna, Chief Executive Officer, Pathway Health Services

Representing: Long Term Care

Co-Chair: Health Information Exchange Workgroup

Jonathan Shoemaker, Information Services Director of Clinical Application, Allina Health

Representing: Large Hospitals

Steve Simenson, BPharm, FAPhA, President and Managing Partner Goodrich Pharmacy

Representing: Pharmacists

Adam Stone, Chief Privacy Officer, Secure Digital Solutions

Representing: Expert in HIT

Meyrick Vaz, Vice President, Healthcare Solutions, Optum Global Solutions

Representing: Vendors

Donna Watz, JD, Deputy General Counsel, Minnesota Department of Commerce

Representing: Minnesota Department of Commerce

Ann Warner, Manager, Data Engineering, HealthEast

Representing: Health Care Administrators

John Whittington, South Country Health Alliance

Representing: Health Care Purchasers and Employers

Co-Chair: e-Health Workforce Workgroup

Ken Zaiken, Consumer Advocate

Representing: Consumers

Co-Chair: Consumer Engagement Workgroup

Sandy Zutz-Wiczek, Chief Operating Officer, FirstLight Health System

Representing: Community Clinics and FQHCs

Designated Alternates

Karl Anderson, Global Digital Health Senior Manager, Medtronic

Alternate Representing: Vendors

Nancy Garrett, PhD, Chief Analytics Officer and Senior Vice President for Information Technology, Hennepin County Medical Center

Alternate Representing: Large Hospitals

Oyin Hansmeyer, HIT Consultant

Alternate Representing: Experts in Health IT

Elisha Harris, RN, Registered Nurse, United Hospital

Alternate Representing: Nurses

George Klauser, Executive Director, Altair-ACO, Lutheran Social Services

Alternate Representing: Social Services

Paul Kleeberg, MD, Medical Director, Aledade

Alternate Representing: Physicians

Mark Sonneborn, Vice President, Information Services, Minnesota Hospital Association

Alternate Representing: Hospitals

Susan Severson, CPEHR, CPHIT, Vice President, Health Information Technology, Stratis Health

Alternate Representing: Quality Improvement

Rochelle Olson, MPH, Systems Management Supervisor, Dakota County Public Health

Alternate Representing: Local Public Health

Appendix B: E-health progress and measures

Since 2010 Minnesota has been the only state in the nation to measure progress as our health providers adopt technology. The Minnesota e-Health Profile is a series of studies of health care facilities that uniformly collects and shares the progress of Minnesota’s health care providers in adopting technology to collect, use and electronically share health information with a patient’s other providers.

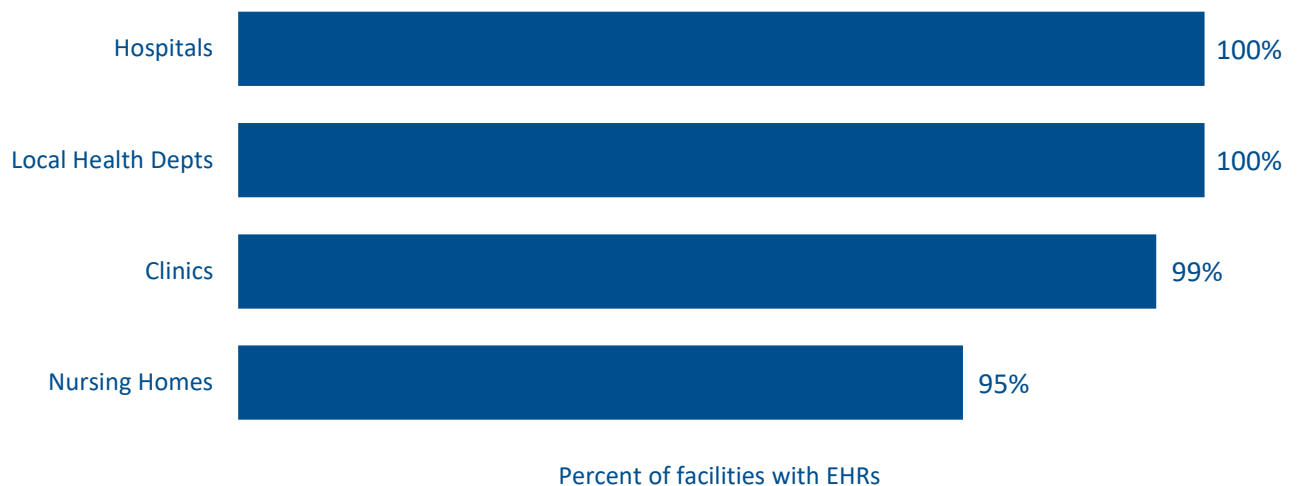
These assessments are designed to measure Minnesota's status on achieving our goal of having health providers across the care continuum participating in e-health. Results are used to identify gaps and barriers, help develop programs and inform policy decisions, and support community collaboration efforts.

OHIT conducts annual HIT surveys among Minnesota’s hospitals, ambulatory clinics, and community health boards, and periodic surveys among other settings. These studies show that Minnesota continues to make great strides in advancing e-health in many settings and evidence continues to grow regarding the positive impact of EHRs for Minnesota consumers, health care providers and communities.

Adoption of electronic health records

Minnesota has high rates of EHR adoption rates, with all hospitals and nearly all clinics using EHRs. Most of the adoption activity has happened since 2010, when federal funding incentives from the HITECH Act of 2009 were available to hospitals and clinics. Historically, less than 20% of the state’s hospitals and clinics were on electronic systems in the mid-2000s. Exhibit B-1 shows near-universal adoption rates across health and health care settings in the state.

Exhibit B-1: Percent of Minnesota providers using electronic health records



Source: Minnesota e-Health Profile, MDH Office of Health IT, 2016-18

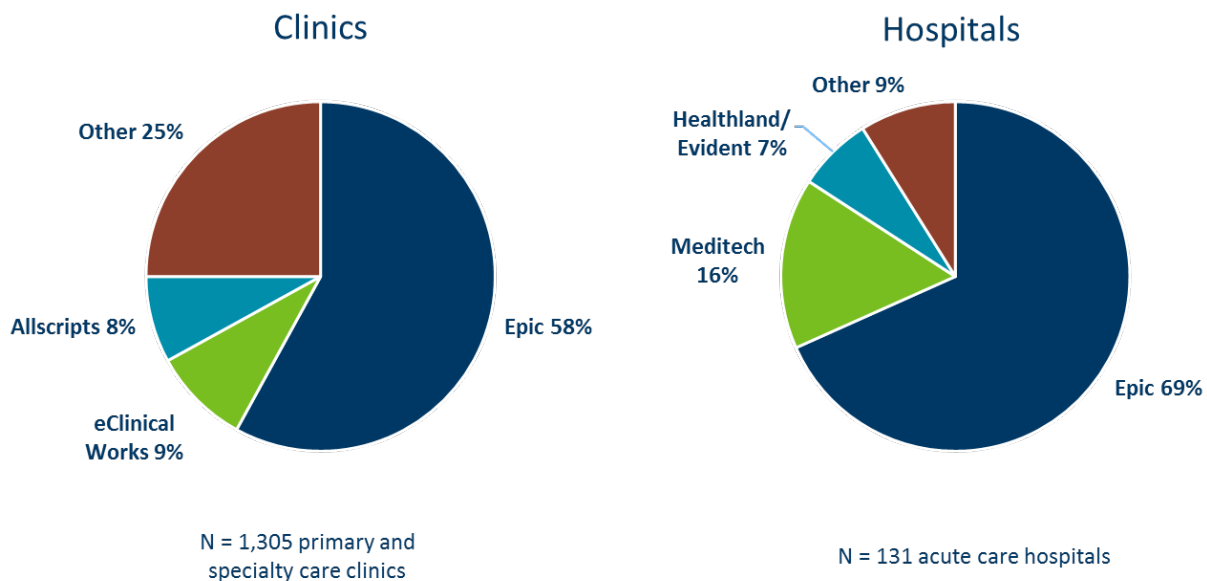
It should be noted that EHR systems are not a “one size fits all” type of product. For example, a system that works for primary care clinics does not necessarily work well for behavioral health or long-term care due to the nature of

care provided. Federal funding incentives drove vendors to develop EHR solutions for clinics and hospitals, but not for other settings such as long-term care and mental health. As such, EHR options for providers across the full spectrum of care, and standards to support them, have developed more slowly and these providers have not had the same funding incentives. Despite these barriers, the Minnesota e-Health Initiative emphasizes the need for all providers to use e-health in support of patient safety, accountable care models, and community health.

EHR vendor market share

Among clinics and hospitals the EHR vendor market in Minnesota is dominated by the Epic EHR system. Exhibit B-2 shows that 58% of non-Federal acute care hospitals use Epic, representing 70% of Minnesota’s acute care beds. Similarly, Epic is used by 58% of clinics, although it should be noted that this vendor is used much more by primary care clinics (69%) than specialty care clinics (47%), in many cases due to the level of EHR specialization needed by these clinics. Minnesota’s nursing home EHR market is dominated by PointClickCare and MatrixCare, which combine for 90% of the market.

Exhibit B-2: EHR vendor market share for Minnesota clinics and hospitals



Source: Minnesota e-Health Profile, MDH Office of Health IT, 2018

The market dominance offers several advantages for the many Minnesotans who seek care with a health system that uses Epic. For one, Epic offers a tool that enables health information exchange and view-only access to other Epic users whether or not they are in the same health system (assuming the patient has authorized that access). This has facilitated a great amount of information sharing in Minnesota. A second advantage is that Minnesota health providers have formed an Epic user group to collaborate on best practices and EHR system development. This provides a community for education and collaboration on EHR optimization.

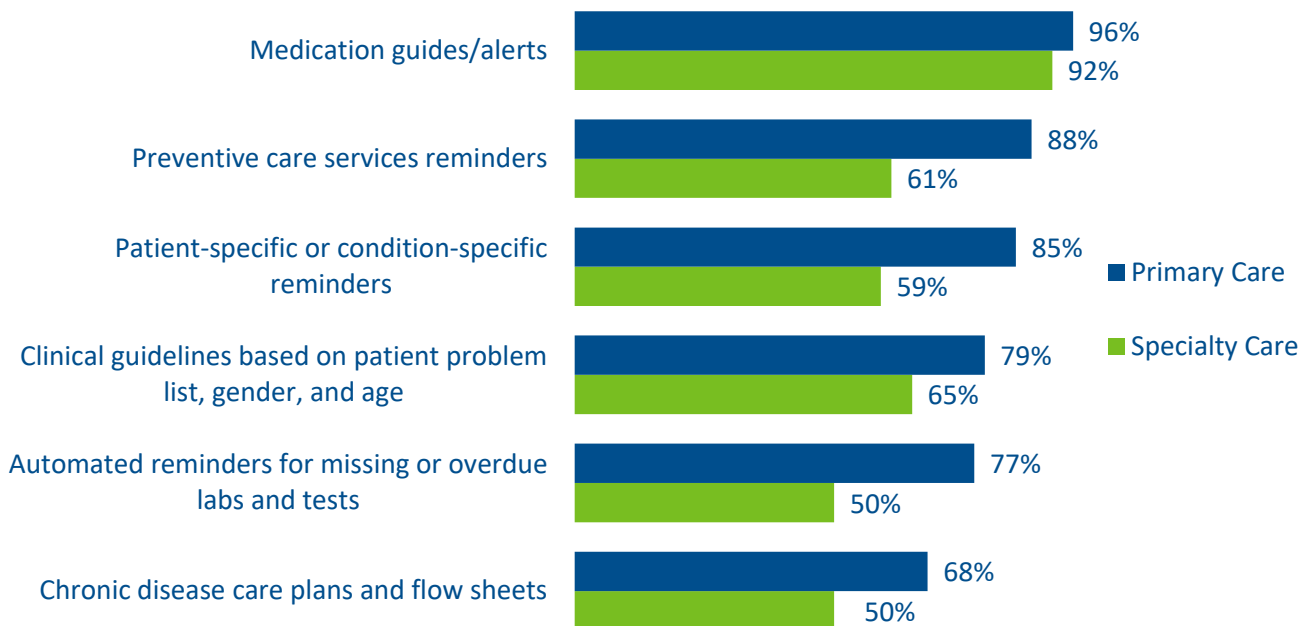
Market dominance also comes with disadvantages. Notably, hospitals, clinics and other health providers that do not use Epic cannot participate in this vendor-assisted health information exchange. This creates a structural inequity in the state, notably for Critical Access Hospitals (CAHs). Among Minnesota’s non-Federal acute care hospitals, fewer CAHs use Epic (60%) compared to non-CAHs (81%) use Epic.

Effective use of electronic health records

The real value from investing in and implementing an EHR system is optimizing how the data in the systems can be used to support efficient workflows and effective clinical decisions. Effective use means that the EHR has tools such as computerized provider order entry (CPOE), electronic clinical decision support (CDS) tools, and electronic prescribing, and there are processes in place to use these tools for improving health care.

Clinical decision support is defined broadly as providing clinicians or patients with clinical knowledge and patient-related information, intelligently filtered or presented at appropriate times, with a goal of enhanced patient care and outcomes. Exhibit B-3 shows key clinical decision support tool indicators in primary and specialty care clinics. Primary care clinics are especially effective users of these automated care tools, which support their care coordination efforts of other state initiatives, such as Health Care Homes and Integrated Health Partnerships. The number of clinics using these tools has increased over time, and earlier gaps between urban and rural rates of implementation have declined. Specialty care clinics have also increased their use of these tools over time.

Exhibit B-3: Percent of clinics routinely using electronic clinical decision support tools



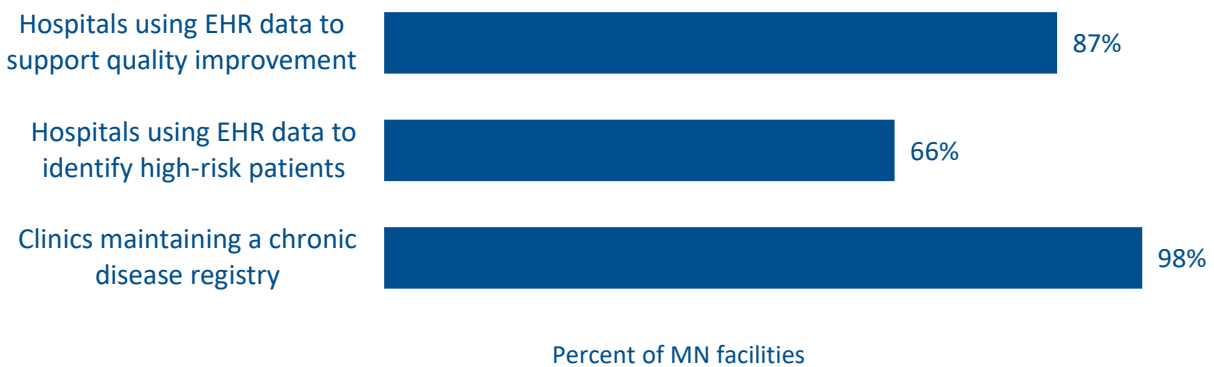
Source: Minnesota e-Health Profile, MDH Office of Health IT, 2018

Most of Minnesota’s primary care clinics are using electronic CDS tools to manage their patients who have chronic conditions. Nine in ten (89%) of primary care clinics used CDS tools to manage patients who have diabetes, 84% use tools for patients with high blood pressure, and 75% use tools for patients with high cholesterol. Many specialty clinics also use CDS tools to support patients they serve.

Data utilization

Another benefit of EHRs is that they store clinical data in a structured way that can be used to coordinate care, monitor and improve quality and outcomes, and conduct research. Exhibit B-4 shows that 87% of hospitals use EHR data to support quality improvement; and 66% use EHR data to identify high-risk patients. Nearly all clinics with EHRs (98%) use EHR data to maintain a chronic disease registry.

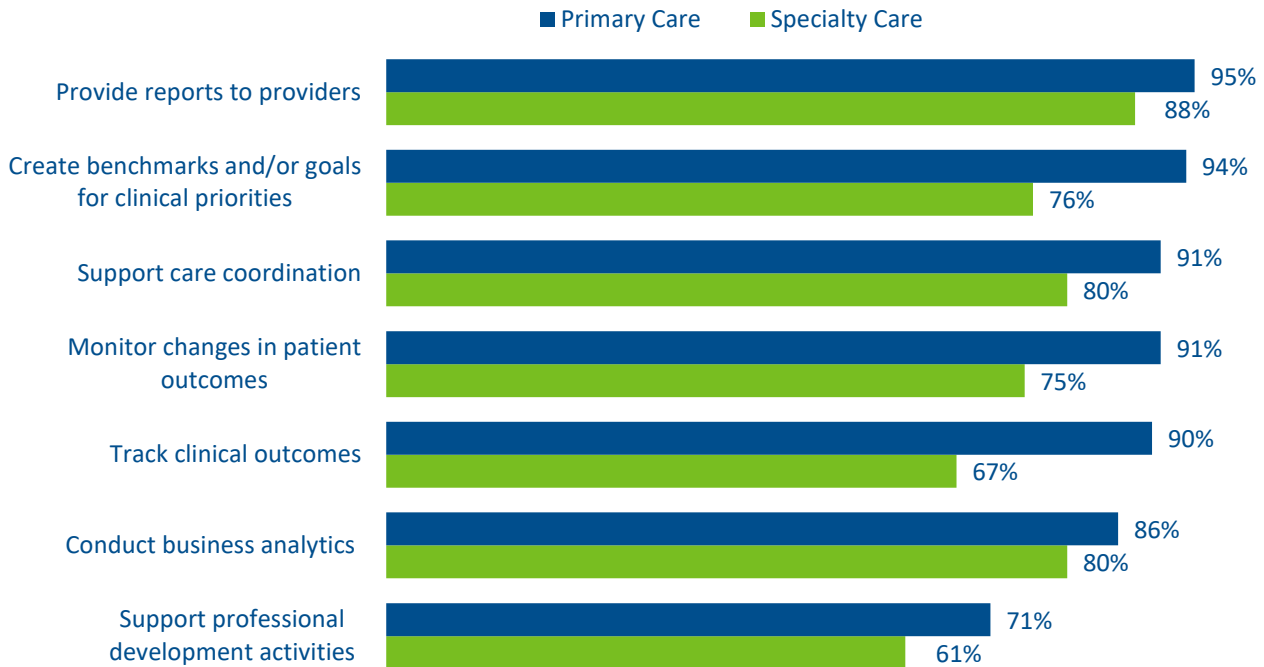
Exhibit B-4: Use of EHR data to advance population health



Source: Minnesota e-Health Profile, MDH Office of Health IT, 2018

The clinic HIT survey asks about specific data activities such as analytics to support patient care and outcomes. Nearly all of primary care clinics use data from their EHR systems to provide reports to providers, create benchmarks/goals for clinical priorities, support care coordination, monitor changes in patient outcomes, and track clinical outcomes. Many clinics also use these data to conduct business analytics and support professional development. Exhibit B-5 shows the data activities for primary and specialty care clinics. A qualitative follow-up question in the survey identified that many clinics are also using data on non-clinical factors that impact a person’s health and well-being, such as housing, income and food security, transportation, and environmental exposures.

Exhibit B-5: Data analytic activities by Minnesota’s clinics



Source: Minnesota e-Health Profile, MDH Office of Health IT, 2018

Most primary care clinics are using data to support their patients who have chronic conditions. Ninety-one percent of primary care clinics regularly generate lists of patients who have diabetes, and 81% do so for patients who have high blood pressure. Using data in this way helps care providers make sure patients are receiving needed care and resources to help them manage their conditions. Two thirds of primary clinics (63%) are using demographic information in their patient records, such as race and/or age, to assess disparities in clinical outcomes based on those characteristics. Many clinics also indicated that they are capturing and using data on non-medical factors that influence health, such as housing and income stability, in order to help patients find resources to address these factors.

Impact of EHRs on clinical practice

The clinic HIT study includes opinion questions regarding the impact EHRs have had on the clinic’s practice. There is strong agreement on the positive impact of EHRs, particularly among primary care clinics. Three in four clinics (77%) agreed that their EHR has helped them enhance patient care in their clinic; 67% agree that it has helped when coordinating care; and 66% agree that the EHR has helped them order fewer tests/images due to better availability of existing results (Exhibit B-6).

Exhibit B-6: Impact of EHRs on clinic practice



Source: Minnesota e-Health Profile, MDH Office of Health IT, 2018

E-prescribing

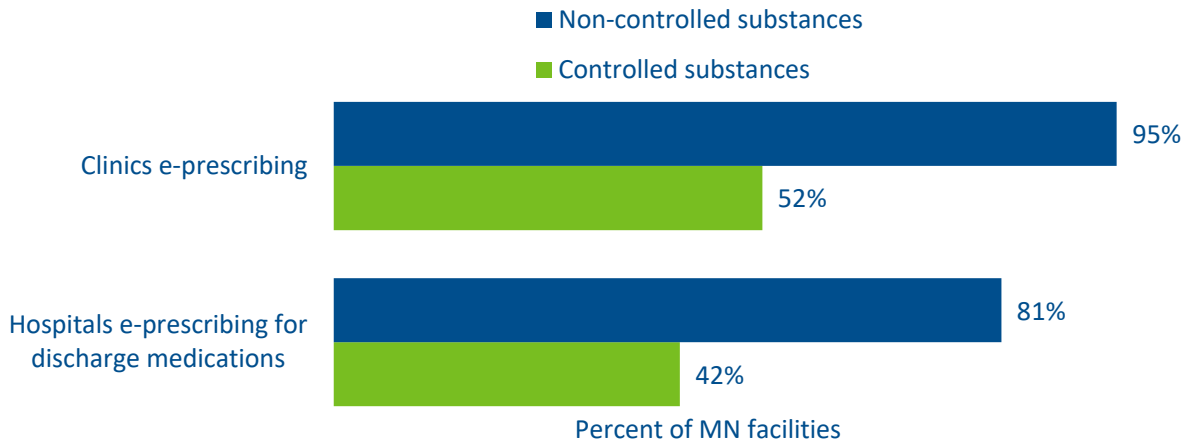
Electronic prescribing, or “e-prescribing,” means secure bi-directional electronic exchange of prescription information between prescribers, pharmacists and pharmacies, and payers or pharmacy benefit managers. E-prescribing can improve the quality of patient care because it enables a provider to electronically send an accurate and understandable prescription directly from the point-of-care to a pharmacy. E-prescribing is a way to:

- Improve the patient experience because medications are filled faster when sent electronically, and medication transcription errors are avoided.
- Reduce potential adverse drug events and related costs because of automated interaction alerts.
- Reduce forgeries and risk of drug fraud and diversion because paper scripts are eliminated.

As a result of the e-prescribing mandate enacted in 2011 (Minnesota Statute §62J.497, Subdivision 3), Minnesota saw a dramatic increase in the rate of pharmacies e-prescribing, from 57% in December of 2008 to 98% in 2015, and continuing at that level since. The mandate does not currently include an enforcement provision and a small number of independent pharmacies do not e-prescribe despite guidance from the Minnesota e-Health Initiative and MDH’s efforts to provide financial support. In time and as other policy levers develop, these pharmacies are expected to comply.

Minnesota measures the status of e-prescribing in several ways, including pharmacy and provider e-prescribing practices. Exhibit B-7 shows the percent of e-prescribed scripts among clinics and hospitals for prescriptions that do and do not include controlled substances. The gap persists in e-prescribing rates between scripts that include controlled substances and those that do not.

Exhibit B-7: Percent of scripts e-prescribed by Minnesota hospitals and clinics



Source: Minnesota e-Health Profile, MDH Office of Health IT, 2018.

Minnesota Statute (§152.11) was revised in 2012 to allow controlled substances to be electronically prescribed in accordance with applicable federal rules. However, many clinics and hospitals have struggled with the technical and workflow barriers to e-prescribing controlled substances (EPCS), which include appropriate security functionality (two-factor authentication) and training prescribers and their staff on new procedures.

Minnesota’s pharmacies are almost universally (98%) enabled for EPCS, meaning that their electronic systems have the appropriate technical updates required by the Drug Enforcement Administration (DEA) needed to receive electronic prescriptions for controlled substances. However, only 32% of Minnesota prescribers are enabled and 34% of controlled substances are prescribed electronically (source: Surescripts 2017-18). These numbers are slowly increasing and the Minnesota e-Health Initiative has a workgroup conducting outreach and communication to promote EPCS and learn what resources prescribers need to enable the technology and workflows.

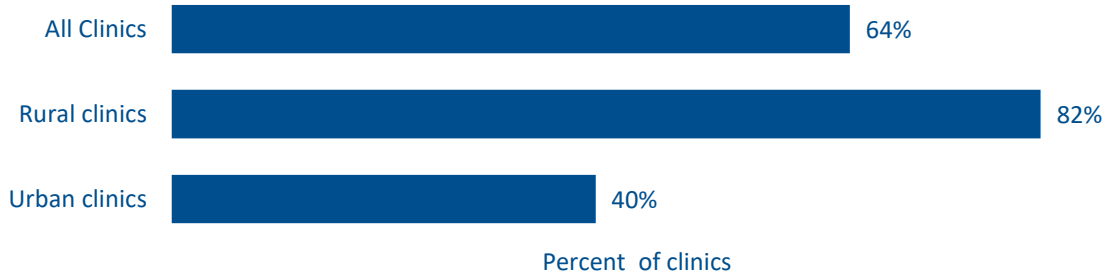
This gap in implementation is a concern. Paper scripts allow opportunity for narcotic prescriptions to be fraudulently duplicated and/or misdirected, and this is considered by the e-Health Initiative to be a contributing problem to the state’s opioid misuse and abuse epidemic. Clinics and hospitals in Minnesota are increasingly implementing this update and rates of EPCS enablement are expected to increase in 2019. However, it will also be important to ensure that other prescribers such as dentists also implement EPCS.

Telemedicine services

Telemedicine (also called telehealth) is the use of telecommunications technologies to provide health care services to a patient who is physically not with the provider. Telemedicine can include diagnosis, treatment, education and other health care activities.

Exhibit B-8 shows that 64% of clinics in Minnesota used telemedicine services, with higher use among rural clinics (82%) compared to urban clinics (40%). Use of these services has increased over the past few years as reimbursement models have changed and technology has become more accessible.

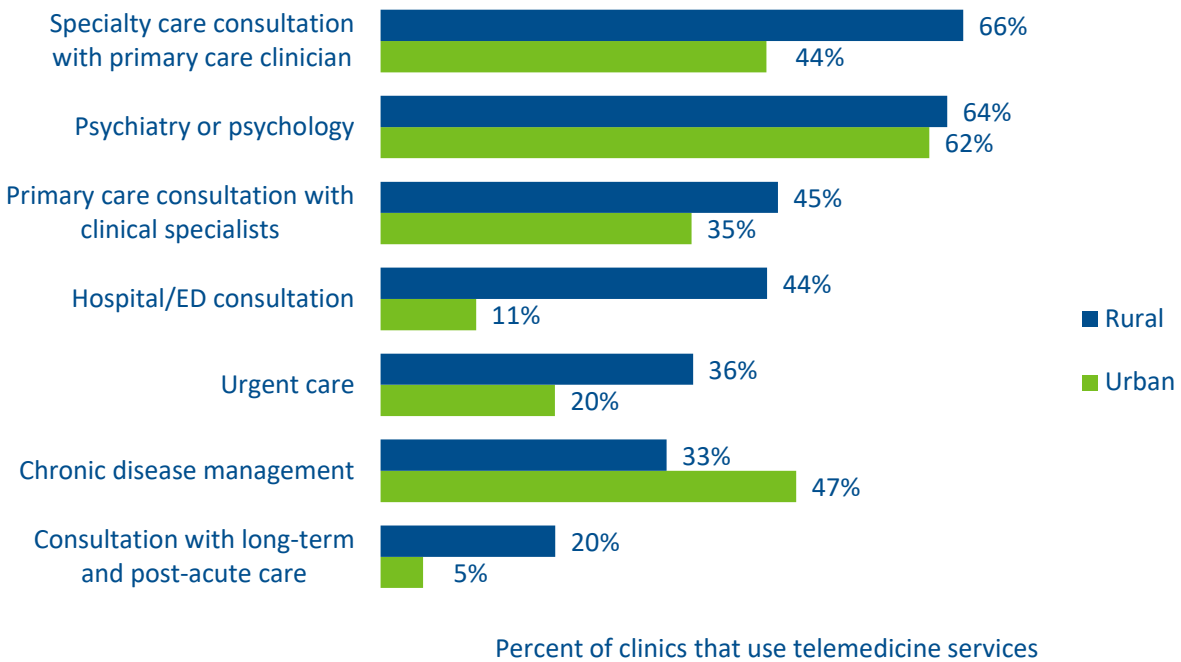
Exhibit B-8: Clinics’ use of telemedicine services



Source: Minnesota e-Health Profile, MDH Office of Health IT, 2018.

The types of telemedicine activities used by Minnesota clinics are shown for rural and urban clinics in Exhibit B-9. The most common activities are specialty care consultation and mental health services. Rural clinics more commonly use hospital/ED and urgent care telemedicine services compared to urban clinics, while urban clinics more often use telemedicine for chronic disease management.

Exhibit B-9: Telemedicine activities conducted by clinics



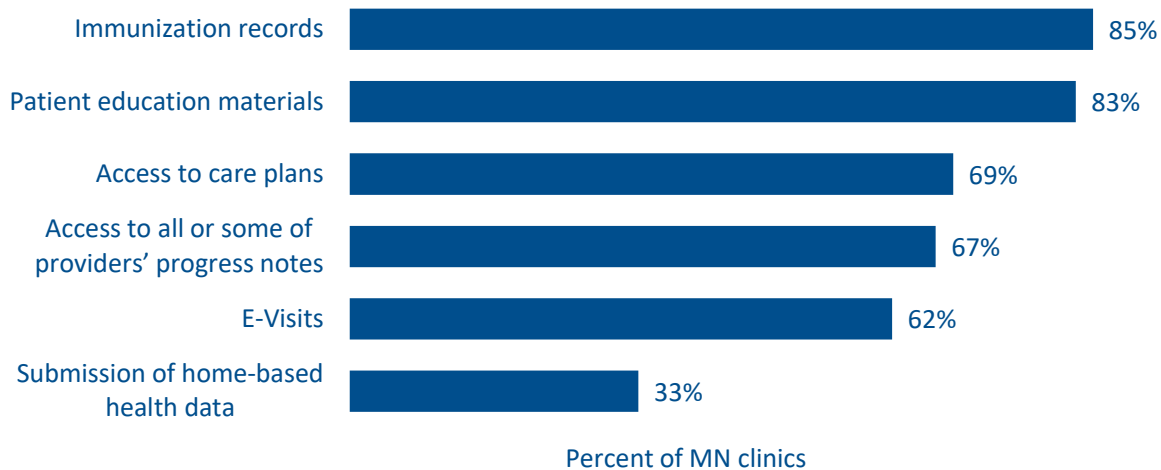
Source: Minnesota e-Health Profile, MDH Office of Health IT, 2018.

Patient access to information

With the implementation of EHRs, health care providers have the opportunity to provide patients with their health information in an electronic format. These tools can help patients take responsibility for their own health and aid in keeping the health records updated with current information. Patient portals are now a very common way to offer services for patients, such as scheduling appointments, paying bills, education materials, and secure access to personal health records. Almost all Minnesota’s clinics (97%) offer patient portals, and on average, 44% of clinic patients have enrolled for access. There is not a significant enrollment difference for urban (45%) versus rural clinics (38%).

Exhibit B-10 shows the percent of clinics offering functionalities through their portal that support patient care and access to their information. The most common functions are immunization records (85%) and education materials (83%). About two-thirds of clinics offer patients electronic access to their care plans (69%), provider progress notes (67%), and/or e-visits (62%). One-third of clinics (33%) allow patients to submit home-based health data, such as blood pressure readings and health app data.

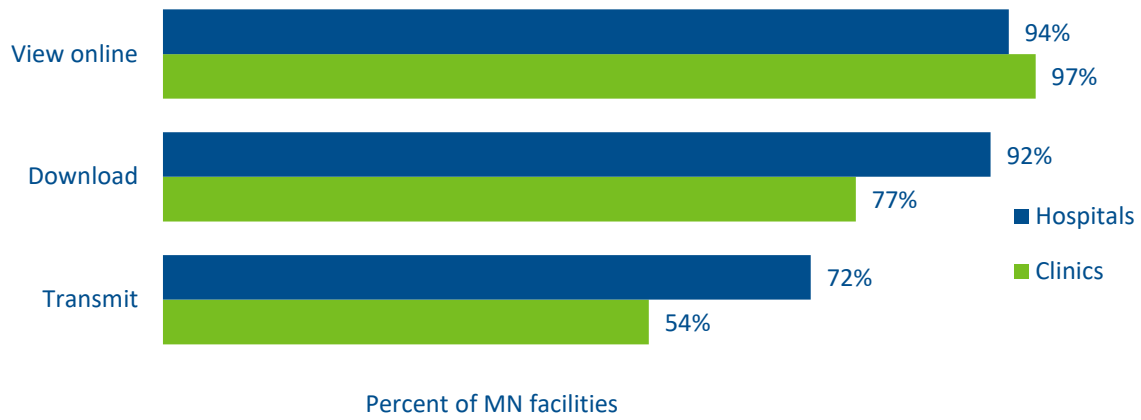
Exhibit B-10: Percent of Minnesota clinics offering functionalities through their patient portal



Source: Minnesota e-Health Profile, MDH Office of Health IT, 2018.

Portals can offer more than the opportunity to view information. Many organizations also allow patients to download the health information, and/or send it to another provider. Exhibit B-11 shows that 97% of clinics and 94% of hospitals provided patients with the option to view their patient health information online. As many hospitals (92%) but fewer clinics (77%) offered the option to download that information to a physical electronic media, and even fewer clinics (54%) and hospitals (72%) offered the option to electronically transmit their patient health information.

Exhibit B-11: Patient’s electronic access to their personal health information



Source: Minnesota e-Health Profile, MDH Office of Health IT, 2018

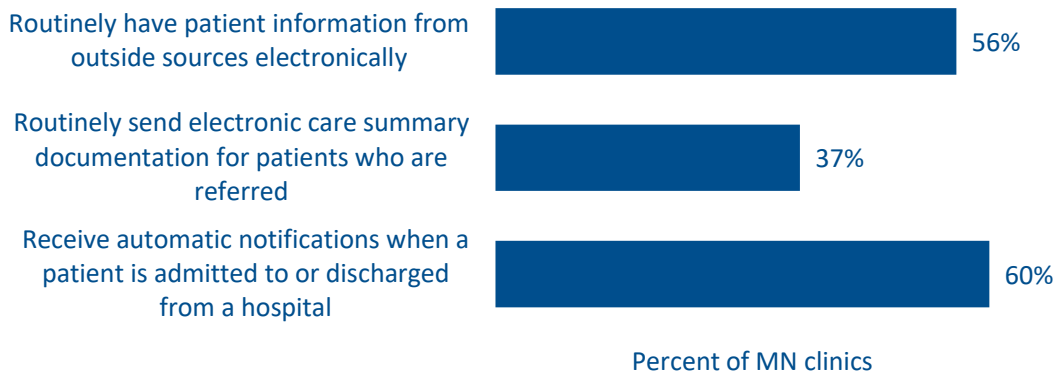
For the most part, the amount of information available to the patient is limited to basic content such as medications, lab results, and visit summaries. An emerging trend is an option referred to as “Open Notes⁵”, whereby the provider allows patients to see their full health record, including provider notes. In Minnesota, 67% of clinics allow patients access to the provider notes.

⁵ <http://www.opennotes.org/>

Health information exchange

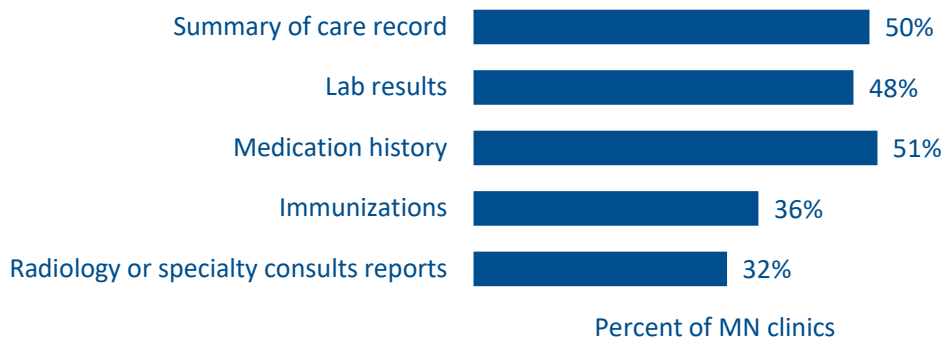
As described earlier in this report, health information exchange is happening in Minnesota but not statewide nor robustly. The clinic survey includes several questions to identify the extent to which patients' health information is seamlessly available to their providers. Exhibit B-12 shows that just over half of clinics (56%) indicated that their providers routinely have patient information available electronically when that information comes from a provider outside of their own health system. Similarly, 56% of clinics are able to provide that information to a provider outside of their own system when a patient needs to see that provider. Just over one-third of clinics (37%) routinely send an electronic care summary document. More than half of clinics (60%) receive automatic notifications when their patients are admitted to or discharged from a hospital, but just 14% receive such notifications from hospitals outside of their own health system.

Exhibit B-12: Clinics' health information exchange practices



Another indicator of health information exchange is to assess how data are integrated into the clinic's EHR. Exhibit B-13 shows that many Minnesota clinics rely on manual and dual workflow processes for receiving clinical data. Half of clinics can automatically integrate an electronic summary of care record, lab results, and/or medication history. Many fewer clinics automatically integrate immunizations (36%) and/or radiology/specialty consult reports (32%).

Exhibit B-13: Percent of clinics that automatically integrate data into the EHR, by type of data



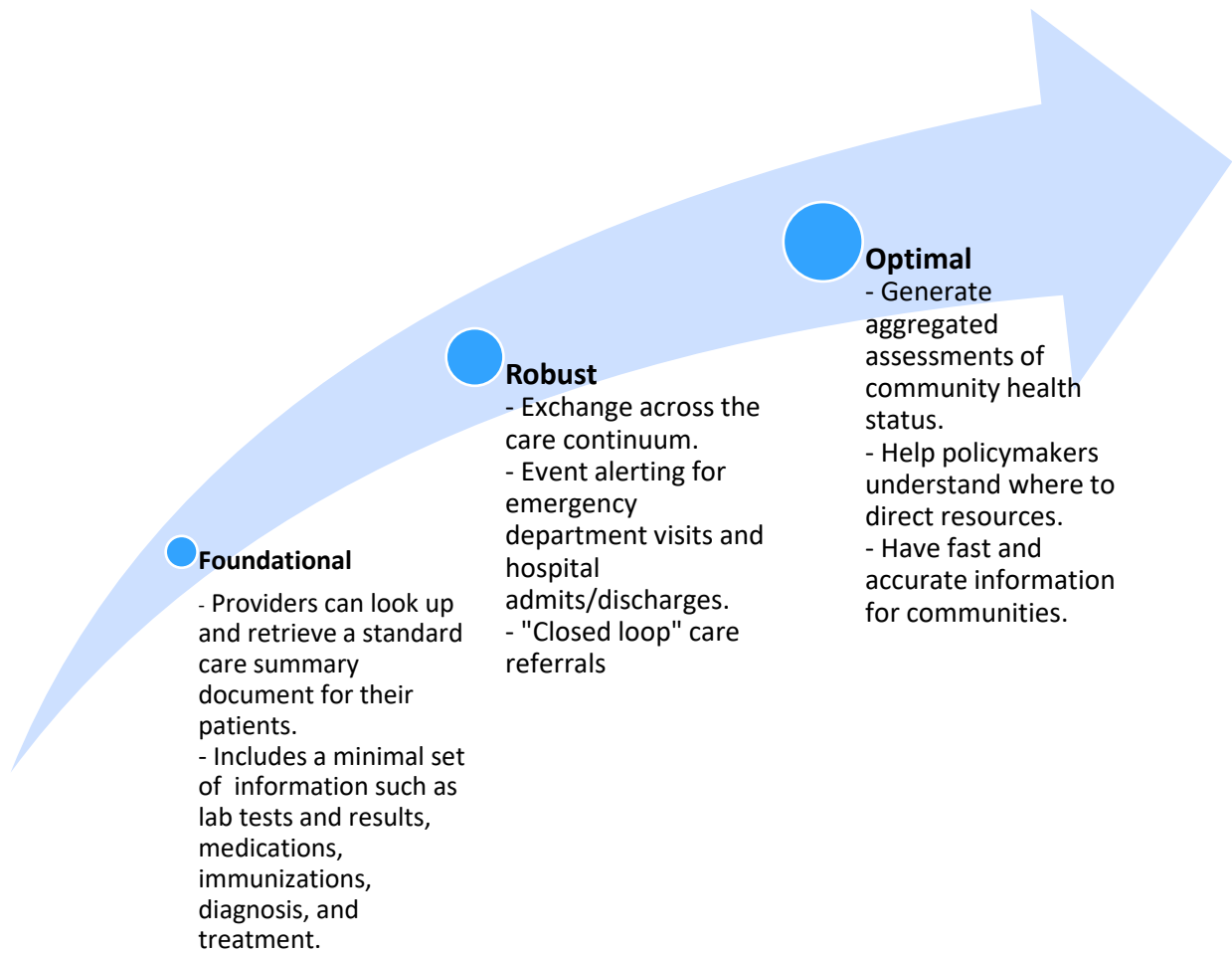
Appendix C: Health information exchange study summary

Uses for health information exchange

At a foundational level, patients need their information to go with them between different health care organizations in order for their providers to make care decisions in a timely and efficient manner. With this flow of information, health providers can look up and retrieve patient information to prepare for a patient visit or coordinate transition from a hospital to nursing home. Providers can send information to another provider or organization that a patient sees.

Building upon the foundation, “robust” HIE involves using information to manage patient care, so that providers across the care continuum can communicate, consolidate patient information, and use analytics to support health outcomes. A third level of “optimal” HIE use allows communities to understand the health status of the population in their geographic area, partner with community organizations to support patients’ nonclinical needs, quickly respond to disease outbreaks, and manage emergency response. Exhibit 1 provides examples of how these three uses of HIE support the health of individuals and communities.

Exhibit 1: How HIE supports individual and community health



HIE in Minnesota

Minnesota's approach to HIE intended to support a market-based strategy that relies on communities and the private sector to develop innovative solutions that meet the needs of Minnesotans and our health care market. This approach includes limited government oversight to ensure fair practices, availability of HIE options and compliance with state and federal requirements, including privacy, security and consent protections, but with the ability for any private entity that meets these requirements to become certified to provide HIE services. See Appendix C for a description of this model.

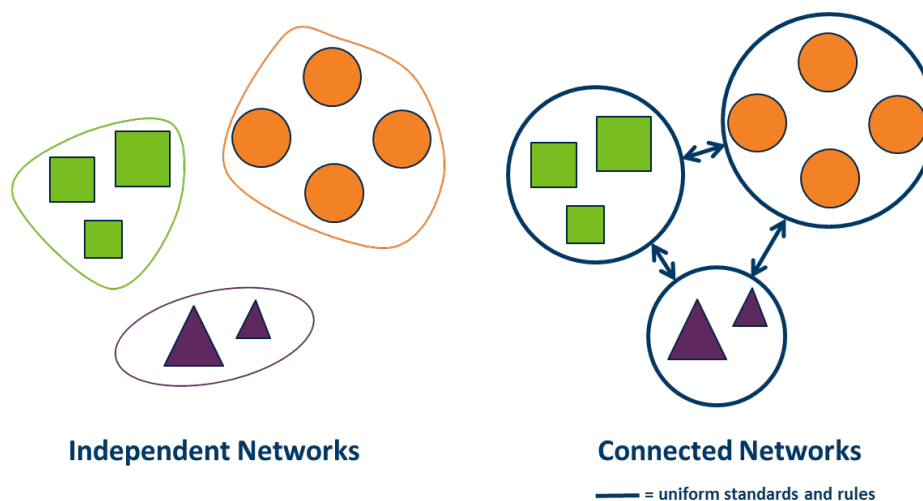
Minnesota's approach has resulted in providers having the ability to choose among a wide range of HIE options, all offering different services and pricing structures. For a variety of reasons, the Minnesota HIE model has not evolved as anticipated and is not meeting all needs. Ways in which HIE currently happens in Minnesota include:

- Large health care provider systems that have established their own internal networks to exchange information among their hospitals and clinics.
- Independent health systems that use the same electronic health record (EHR) vendors can connect to each other via that technology.
- Some organizations are connected to HIE service providers that help them exchange data with other organizations using that service.
- Some organizations are connected to national HIE networks.
- Some organizations connect directly to each other.
- Some organizations use more than one of these approaches.
- Some organizations are not electronically exchanging at all.

In order to achieve foundational HIE these networks need to be connected, so that information can flow securely across organizations even when they belong to different networks. This concept of “connected HIE networks” means that each of these networks has a connection to each other network and all can exchange clinical information with each other using uniform standards and rules. Any organization that participates with any of those networks is then connected to all of the organizations participating in any of the networks. Exhibit 2 presents a simplified visual to show how this concept applies. In this example:

- Independent networks may have their own standards and rules, and therefore may not be compatible to exchange information with other networks.
- Connected HIE networks have a governance process to define rules and establish uniformity so that providers in any network can communicate with providers in any other network. The rules and uniformity are portrayed as common shapes (circles), and connections (lines and arrows).

Exhibit 2: Depiction of independent and connected HIE networks

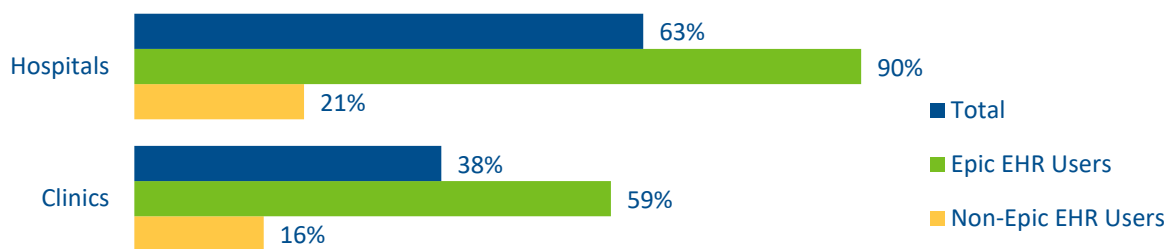


Because of these various independent networks and non-networks, Minnesota’s health organizations:

- Need to manage multiple point-to-point connections and/or rely on inefficient manual workarounds to exchange some or all shared health information.
- May need to establish separate connections to:
 - one or more national networks
 - other health systems, particularly those not connected to a national network
 - the Minnesota Department of Health (for public health reporting)
 - health plans/payers
- Dedicate time and financial resources to establish unique agreements and processes to maintain each of those connections, and manage issues in getting different systems to “speak” to each other effectively. This inefficiency takes resources away from patient care and adds costs to the health care system.

The foundational HIE happening in Minnesota is driven largely by organizations that use a common EHR vendor, in particular the Epic EHR system, which has built-in HIE functionality for the network of Epic users. More than half of Minnesota’s 146 hospitals and roughly 1,500 clinics use the Epic EHR system and are therefore part of the network of Epic users, with an estimated two-thirds of the state’s population receiving care from these organizations. Exhibit 3 shows a point-of-care disparity among organizations that use Epic and those that do not. While just 63% of hospitals and 38% of clinics in Minnesota indicate that their providers routinely have the necessary clinical information available electronically, Epic users much more often report that they have this information, due in large part to the EHR’s built-in access to foundational information among Epic network users.

Exhibit 3: Percent of MN hospitals and clinics that routinely have necessary clinical information from outside providers available electronically



Source: Minnesota e-Health Profile, MDH Office of Health IT, 2018

Appendix D: Health information exchange oversight

HIE is the electronic transmission of health-related information between organizations according to nationally recognized standards (Minnesota Statutes, section 62J.498 sub. 1(f)). The goal of HIE is to help make health information available, when and where it is needed, to improve the quality and safety of health and health care. This section of the report specifically addresses implementation of Minnesota’s Health Information Exchange Oversight Law (Minnesota Statutes, section 62J.498-4982).

Minnesota’s approach to HIE has been a market-based strategy that relies on communities and the private sector to develop innovative solutions that meet the needs of Minnesotans and our health care market. This approach includes limited government oversight to ensure fair practices, availability of HIE options and compliance with state and federal requirements, including privacy, security and consent protections, but with the ability for any private entity that meets these requirements to become certified to provide HIE services. Minnesota’s HIE oversight law (Minnesota Statutes, sections 62J.498-62J.4982), enacted in 2010 and updated in 2015, provides government oversight and is intended to:

- Ensure standards-based exchange requirements are being met.
- Create a level playing field to ensure access for all communities and providers and provide a transparent process to the certification of HIE service providers.
- Facilitate coordination and collaboration among HIE service providers.
- Allow market-driven innovation, connectivity and services.
- Assess and report on the state and progress of HIE.

Minnesota’s HIE oversight law recognizes two types of entities that provide the infrastructure for HIE – Health Information Organizations (HIO) and Health Data Intermediaries (HDI). Both are required to be certified under the state’s oversight program.

- An HIO is an organization that oversees, governs, and facilitates HIE among health care providers from unrelated health care organizations.
- An HDI is an entity that provides the technical capabilities, or related products and services, to enable HIE among health care providers from unrelated health care organizations (but does not govern the information).

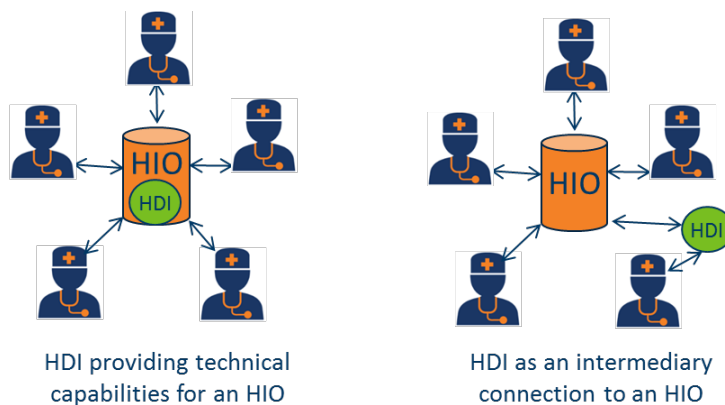
There are currently four organizations certified as HIOs in Minnesota, and 16 certified as HDIs.⁶ Minnesota’s HIE oversight law requires HIOs to connect to all other HIOs, and HDIs to connect to at least one HIO. Health care providers are required to connect to an HIO, either directly or indirectly by connecting through an HDI that is connected to an HIO⁷.

⁶ A list of Minnesota’s certified HIE service providers is at: <http://www.health.state.mn.us/e-health/hie/certified/index.html>

⁷ This is a requirement of the Minnesota Interoperable EHR Mandate, which does not have an enforcement provision. Information is at: <http://www.health.state.mn.us/e-health/hitimp/index.html>

Exhibit D-1 portrays how health providers can connect to an HIO either directly or by using an HDI (for example, an EHR system may have the technical services to be an intermediary). This model requires a broad array of point-to-point connections for the HIOs to connect to each other. There is no limit to the number of HIOs that may operate in Minnesota, so this model would increase in complexity if more HIOs entered the market.

Exhibit D-1: Example HIO and HDI roles



Certified organizations

The certification process is intended to promote public trust in HIE activities, decrease fragmentation of health information in the state, and provide a state strategy for community-based HIE with State-Certified HIE Service Providers.

Currently, there are 4 HIOs and 16 HDIs for providers to choose from for HIE Products and Services in meeting the Interoperable Electronic Health Record Mandate⁸ (Minnesota Statute §62J.495).

Specific information on each state-certified entity is posted to Minnesota State-Certified Health Information Exchange Service Providers⁹ webpage. As of December 2018, the following entities are certified as either a Health Information Organization or Health Data Intermediary.

Health information organizations

- Allina Health Systems
- Koble-MN
- South Country Health Alliance
- Southern Prairie Community Care

Health data intermediaries

- Audacious Inquiry
- CenterX

⁸ <http://www.health.state.mn.us/e-health/hitimp/index.html>

⁹ <http://www.health.state.mn.us/e-health/hie/certified/index.html>

- Cerner
- Epic Systems Corporation
- Inpriva
- MaxMD
- MedAllies
- NextGen Healthcare
- Orion Health
- RelayHealth
- Secure Exchange Solutions
- Simply Connect
- South Dakota Health Link
- Surescripts
- Wisconsin Statewide Health Information Network

Potential policy changes ahead

As noted by the HIE Study, Minnesota’s HIE model must evolve to meet the current HIE environment and needs. The HIE Task Force (described in this report) has been launched to recommend early and longer-term needs. As the HIE Task Force identifies recommendations for implementation of Minnesota’s connected network model, there will likely be subsequent recommendations to changes in Minnesota’s laws, including Minnesota Statutes 62J.498-4982 (“HIE Oversight Law”), Minnesota Statutes 62J.495 (“Interoperable EHR Mandate”); and 144.291 (“Minnesota Health Records Act”). This work is expected to conclude in late spring/early summer 2019.

Appendix E: Minnesota e-Health HIE Task Force

Charge - Purpose and Proposed Deliverables

By December 2018, the Minnesota e-Health HIE Task Force will develop a report for the Minnesota e-Health Advisory Committee including, but not limited to, the following:

1. Action steps for 2018-2019 to implement connected networks by building upon existing HIO and national network connections to address priority use cases and gaps, including: care transitions between organizations that use the Epic EHR software and organizations that do not; and the Department of Human Services (DHS) event alerting service (EAS).
2. An implementation plan for 2018-2019 with measureable targets that includes:
 - agreed upon transactions, standards and specifications;
 - requirements for how organizations will commit and participate;
 - financial requirements and costs.
3. A plan for five-year interim governance, authority, and financing needed to establish expansion of connected networks (future transactions/use cases, shared services) with the goal of optimal HIE and including the role for the HIE Task Force going forward.
4. Recommended updates to Minnesota’s Health Information Exchange Oversight Law (Minnesota Statutes §§ 62J.498 through 62J.4982) to ensure effective support for HIE and allow timely updates based on changing markets and technology.

Guiding Principles

- The Minnesota e-Health HIE Task Force is expected to collaborate with and build upon complementary HIE-related efforts in the state and region, including but not limited to: activities and evolution of HIOs and networks in Minnesota and nationally, implementation of the DHS EAS and cross-sector efforts to support stakeholders.
- Begin with a manageable scope and remain incremental. Prioritize actions that can be achieved in 2018 – 2019.
- Minimize duplication and number of HIE connections when possible.
- Keep in mind the needs of the continuum of care and the multiple goals for HIE (e.g., foundational, robust, optimal HIE as described in the HIE study report).
- Design for full participation of providers, payers, and government programs in the connected networks approach.
- Consider the needs of Minnesota’s entire health and health care community.

Input and Recommendation Process

The Minnesota e-Health HIE Task Force will:

- Conduct well-publicized open public meetings;
- Actively seek the broadest input and perspectives possible, including from individuals and organizations not directly represented on the Task Force. Additional opportunities for input may include:

presentations/discussions at Task Force meetings; interviews and surveys; requests for comments and suggestions; and other options.

- Make consensus recommendations to the Minnesota e-Health Advisory Committee. If consensus is not possible in the time available, the Task Force will clearly summarize relevant points of view and contrasting opinions for the Advisory Committee.

Members

Collectively, the Minnesota e-Health HIE Task Force will meet the expectations for individual members above and:

- Represent and contribute to greater understanding of a variety of perspectives and stakeholder needs; e.g., health equity, rural, small and independent providers, national HIE initiatives, and others.
- Contribute both strategic and tactical perspectives for the governance and use of HIE .
- Promote and implement the Task Force recommendations. Be able to influence and champion recommendations.

Members are expected to:

- Serve a one-year term: May 2018 – June 2019; term may be extended if necessary.
- Participate fully in task force meetings, preparation, and follow-up as needed.
- Keep Minnesota e-Health Initiative goals foremost in discussions and recommendations.
- Bring the perspective(s) of the category/group being represented to all discussions and recommendations, as well as additional perspectives that are constructive.
- Review/prepare meeting materials ahead of time and be prepared to contribute clear, focused ideas for discussion.

HIE Task Force Membership

- **Stephen W. Odd**, RN, IS Program Manager Systems Integration, Allina Health
Representing: Minnesota Health Information Organization – A
- **Charles D. Peterson**, President and CEO, The Koble Group
Representing: Minnesota Health Information Organization - B
- **Michael Lilly**, Systems/Enterprise Integration Manager, Ridgeview Medical Center
Representing: Hospital, Health System, ACO or IHP-B (Small)
- **Jeffrey Stites**, JD, MPA, Member Attorney, Context Law, LLC
Representing: Professional with Expert Knowledge of Legal Context & Patient Consent

- **Jackie Sias**, Provider Informatics Lead, Care Delivery Payment Reform, Minnesota Department of Human Services
Representing: Minnesota Department of Human Services
- **Eleanor O. Vita**, MD, Family Practice Physician, Chief Medical Information Officer, Mayo Clinic Health System, Owatonna
Representing: Practicing Clinician
- **Timothy R. Getsay**, MA, Vice President, Performance and Information Management Gillette Children's Specialty Hospital
Representing: Professional with Expert Knowledge of HIE
- **Deepti Pandita**, MD, Staff Physician, Chief Health Information Officer, Division of General Internal Medicine, Department of Medicine, Hennepin County Medical Center
Representing: Chief Medical Information Officer
- **Paula Schreurs**, MS, Application Manager, Sanford Health
Representing: Hospital, Health System, ACO or IHP-A (Large)
- **Peter B Schuna**, *HIE Task Force Co-Chair*, Chief Executive Officer, Pathway Health
Representing: Long-Term and Post-Acute Care
- **Jonathon W Moon**, Health Quality Analytics Manager, Health Care Economics, UCare
Representing: Health Plan, Payer or Health Care Purchaser
- **George Klauser**, *HIE Task Force Co-Chair*, Executive Director, Altair ACO, Lutheran Social Service of Minnesota
Representing: Individual with Expert Knowledge of Patient Advocacy

Appendix F: Health care administrative simplification as part of e-health planning

In recognition of the need to reduce unnecessary costs and burdens of health care administrative data exchange, as well as the increasing overlap and convergence of clinical and administrative data, a previously separate health care administrative simplification effort at MDH was integrated with OHIT in mid-2017. As a result, OHIT now administers a [state law](#) requiring the standard, electronic exchange of health care administrative transactions. The law applies to more than 60,000 health care providers (doctors, hospitals, and others) statewide, hundreds of payers (from the state Medicaid agency to small workers' compensation insurers) and others. In total, the administrative standardization and streamlining is projected to reduce overall administrative costs across Minnesota's health care system by an estimated \$40 million to \$60 million.¹⁰

The law further requires that MDH (OHIT) consult with a large, voluntary multi-stakeholder advisory organization, the [Minnesota Administrative Uniformity Committee \(AUC\)](#), in developing, adopting, and administering rules with detailed technical electronic data exchange specifications to ensure the most uniform, efficient, robust exchanges and uses of health care administrative data possible. In carrying out its role, OHIT actively:

- Leads and facilitates the ongoing rulemaking process, to ensure that the rules are updated and revised as needed to remain up-to-date, accurate, and best meet the needs of the end-user in a rapidly changing technical and business environment;
- Provides education, support, and technical assistance to ensure understanding of technical data exchange standards, adoption of best practices, the identification of issues and challenges, and possible strategies and options for solutions; and,
- Investigates complaints of noncompliance with the statute and rules, problem solves with the affected parties, and develops and monitors corrective action plans to achieve compliance.

In addition, OHIT acts as a catalyst and strategic planning partner in identifying and addressing key challenges and opportunities, not only for positive impacts in Minnesota, but more broadly in addressing and responding to related national and federal issues and direction.

As examples of the above roles, in 2018 OHIT:

- Set an example for administrative simplification by adopting revised versions of two sets of rules, making them shorter, more user-friendly, and more flexible and easily adapted to rapidly changing needs and business environments. Despite being shorter and more flexible, the rules continued to ensure that health care providers and payers were “on the same page” to electronically exchange millions of billings (claims) efficiently this year.

¹⁰ Minnesota Department of Health, Center for Health Care Purchasing Improvement (CHCPI). (February 2011). Preliminary unpublished estimate of potential Minnesota health care administrative cost reductions with implementation of requirements for the standard, electronic exchange of health care administrative transactions.

- Has nearly completed a similar revision and updating of a rule for a single, common, electronic method of exchanging a very widely used transaction used for explaining health care payments to providers and for providers' reconciliation of accounts.
- Collaborated with the AUC on developing and publicizing four separate "best practices," to be voluntarily adopted by the community as agreed-upon best strategies to overcome particular data exchange challenges or new situations for which there was otherwise little agreement or precedent.
- Collaborated with the AUC in submitting a statewide response and recommendations for a proposed new national standard for the exchange of a common health care financial transaction used routinely to communicate whether a patient has health insurance and the type of health benefits, between providers and payers.
- Prepared, hosted, and facilitated, with the aid of a consultant hired by OHIT, several informational webinars and meetings with the AUC and other stakeholders on a variety of topics to identify emerging issues and trends, and to explore possible opportunities for further reductions in health care administrative costs and burdens.
- Addressed approximately 50-100 individual questions and requests for information or assistance regarding Minnesota's law, technical data exchange specifications and standards, and problem solving for a variety of topics. Investigated several concerns/complaints of noncompliance with the law that were successfully resolved informally through information, guidance, and follow-up.
- Organized and led an environmental scan, including an AUC survey, key informant interviews, and workgroup discussions to better determine stakeholder progress on health care administrative simplification and cost reduction, perceived challenges, needs, and interests, for planning next steps and future direction.
- Participated as a member of several related national electronic health care administrative data standards-setting and advisory organizations, to remain current on developments and to communicate Minnesota interests, experiences, and needs.
- Organized and participated in a session at the 2018 e-Health Summit to showcase the AUC's health care administrative simplification structure and process, and resulting successful collaboration among Minnesota stakeholders. The session served as a useful springboard for community-wide discussion of adapting the OHIT-AUC experience to address other, broader e-health goals of data exchange standardization and efficiencies. The Summit discussion has prompted additional, ongoing work and planning for piloting a broader "eUC" (electronic Uniformity Committee) concept, modeled on the OHIT-AUC involvements above, but adapted for wider use across a spectrum of possible e-health needs.

Appendix G: Minnesota e-Health vision, mission and guiding principles

Minnesota e-Health Initiative Vision

All communities and individuals benefit from and are empowered by information and technology that advances health equity and supports health and wellbeing.

Mission

- Empower individuals, families, and caregivers to use information and technology to make informed health and wellness decisions.
- Promote research and implementation of evidence-based policies to support best practices and improve outcomes.
- Improve community and public health through timely and actionable information.
- Support providers, care teams, and services in the collection, use and sharing of information through technology and health information exchange.
- Use information to advance knowledge, wisdom, and practice by assuring:
 - Strong leadership and strategic collaborations that support innovation and stay informed of trends influencing health and technology.
 - Well-trained and educated e-health-savvy workforce.
 - Sustainable and adaptable resources for guidance and implementation.
 - Standards and policies for collection, use and sharing of information, including personal health and medicine and factors that influence health such as genetics, geography, and gender.
 - Protection of health information and patient access to health information.
 - Measurement of progress on the adoption and effective use of health information technology and health information exchange.

Guiding principles

The Minnesota e-Health Initiative takes collective action that meets the statutory requirements in Minnesota Statutes 62J.495 to advise the commissioner of health, provide guidance to the community, and

- Supports the vision and mission of the Minnesota e-Health Initiative.
- Ensures that decisions are objective and align with science and evidence-based research.
- Advances e-health equity and supports e-health across the care continuum.
- Values integrity, quality and collaboration.
- Considers all aspects of and factors influencing health and wellbeing.
- Leverages current resources and opportunities.
- Respects human dignity and promotes cultural competency.

Appendix H: E-health standards

E-health standards are common and repeated rules, conditions, guidelines, or characteristics that define how to collect, use, and share electronic health information. Different categories of e-health standards define the language and data types and the format, structure, transport, security and functionality. A set of e-health standards is required for a single interoperability need (i.e., use case) such as sending a referral to a specialist or a prescription to a pharmacy. Interoperability is the ability of a system to exchange and use electronic health information from other systems using a set of e-health standards without special effort on the part of the user. This means that individuals, communities, and providers are able to collect, use, and share bi-directional electronic information in a way that is appropriate, secure, timely and reliable to improve the health and wellness of individuals and communities, advance health equity, support decision-making, and lower health costs.¹¹

The Interoperability Standards Advisory (ISA)¹², released annually by the Office of the National Coordinator (ONC), provides clarity, consistency, and predictability for e-health standards. The ISA identifies four high level types of standards and over 50 interoperability needs including:

- **Vocabulary/Code Sets/Terminology Standards and Implementation Specifications** with 24 interoperability needs including allergies, medications, immunizations, social determinants of health, vital signs, and lab tests
- **Content/Structure Standards and Implementation Specifications** with 20 interoperability needs including care plan, electronic prescribing, public health reporting and clinical decision support
- **Standards and Implementation Specifications for Services** with 10 interoperability needs including “push” exchange, query, image exchange, and health care/provider directory.
- **Administrative Standards and Implementation Specifications** with six interoperability needs including health care claims and coordination of benefits and transactions to support financial exchanges, clinical care, and non-claims.

In addition, the ISA identified over 40 key sources of security standards and security patterns commonly associated with the health data interoperability. These are supplemental to the standards described above.

Minnesota e-health standards process

MDH is responsible under Minnesota Statutes, section 62J.495, to monitor and recommend health data standards and submit an annual report to the legislature. This activity is coordinated with the Minnesota e-Health Initiative, through the Standards and Interoperability Workgroup and OHIT. It accelerates the adoption

¹¹Derived from The Office of the National Coordinator for Health Information Technology. Connect Health and Care for the Nation. FINAL Version 1.0. Accessed December 8, 2018. <https://www.healthit.gov/sites/default/files/hie-interoperability/nationwide-interoperability-roadmap-final-version-1.0.pdf>

¹² The Office of the National Coordinator for Health Information Technology. Interoperability Standards Advisory (ISA). <https://www.healthit.gov/standards-advisory>. Accessed November 16, 2018.

and use of e-health standards by building on and aligning with the national work and sharing resources. This is achieved through a structured process with five key steps listed below. In addition, communication and education occur at each step.

1. **Identification and analysis** of e-health standards and implementation uniformity through the monitoring of federal and national activities, standards development organizations, industry trends and needs, and community input.
2. **Evaluation and classification** of e-health standards and implementation uniformity to assess applicability or use within Minnesota and to align with national use.
3. **Validation and consensus** of e-health standards and implementation uniformity from within the community and leveraging subject matter expert input.
4. **Recommendations** from the Minnesota e-Health Advisory Committee to the Commissioner and the Minnesota e-health community.
5. **Feedback to national organizations and agencies** including ONC, CMS, Centers for Disease Control and Prevention (CDC) and others.

The Minnesota e-health standards process in 2019 will focus on:

1. Identifying and addressing gaps in standards including the adoption and use of the ISA.
2. Reviewing and sharing updated Minnesota standards and interoperability materials.
3. Supporting the work for the HIE Task Force.