Using Information to Support Care Coordination and Population Health

Anne Schloegel and Karen Soderberg
April 3, 2018
• E-health in Minnesota

• Opportunities to harness data to support healthier people and communities

• Efforts to advance health information exchange (HIE)
  • State Innovation Model funding
  • HIE workgroup
  • HIE study
  • National efforts
Acknowledgements

Minnesota Department of Health - Division of Health Policy
Diane Rydrych, Director

Office of Health Information Technology
• Marty LaVenture, Director
• Jennifer Fritz, Deputy Director
• Bree Allen
• Susie Blake
• Kari Guida
• Melinda Hanson
• Bob Johnson
• Geoffrey Mbinda
• Shirley Schoening Scheuler
• Sarah Shaw
• Karen Soderberg
• Tony Steyermark
• and the Minnesota e-Health Initiative
Minnesota’s Health Care Landscape

5.3 million people in 87 counties
~ 60% live in “Twin Cities” metro area

Health Care System

~ 145 hospitals (78 CAHs)
~ 1,400 Clinics (~ 80 RHCs and 18 FQHCs)
~ 78 community mental health centers
~ 382 Nursing Homes
~ 200 home health care agencies

Public Health
• 71 local Health Departments
  – Combined with human services or separate
  – City, single-county or multi-county
• Separate state health and human services agencies
Minnesota e-Health Initiative

A public-private collaboration established in 2004
- Legislatively chartered
- Coordinates and recommends statewide policy on e-health
- Develops and acts on statewide e-health priorities
- Reflects the health community’s strong commitment to act in a coordinated, systematic and focused way

“Vision: ... accelerate the adoption and effective use of health information technology to improve healthcare quality, increase patient safety, reduce healthcare costs, and enable individuals and communities to make the best possible health decisions.”
Minnesota Model is inclusive of the spectrum of health and health care

Exchange partners

- Adult day services
- Behavioral health
- Birth centers
- Chiropractic offices
- Clinics: primary care and specialty care
- Complementary/integrative care
- Dental practices
- Government agencies
- Habilitation therapy
- Home care
- Hospice
- Hospitals
- Laboratories
- Local Public Health
- Long-term care
- Pharmacies
- Social services
- Surgical centers

EHR Adoption in Minnesota

Source: Minnesota e-Health Profile, MDH Office of Health IT, 2016-17
2006 -2010: Minnesota Legislature appropriated $14.6M to support adoption of interoperable EHRs through e-Health Grants ($8.3M) and EHR Loans (over $8M)

2011-2014: HITECH HIE Cooperative Agreement (ONC) awarded approximately $3M
   • *Focused on connecting providers in communities (community collaboratives)*
   • Expanded connections to Minnesota State-Certified HIE Service Providers
   • Increased number of pharmacies capable of e-prescribing

Policy Levers
   • Minnesota 2015 Interoperable EHR Mandate (2007)
     “By January 1, 2015, all hospitals and health care providers must have in place an interoperable electronic health records system within their hospital system or clinical practice setting.”

   • Minnesota 2011 e-Prescribing Mandate (2008)
     “Effective January 1, 2011, all providers, group purchasers, prescribers, and dispensers must establish, maintain, and use an electronic prescription drug program.”
     http://www.health.state.mn.us/e-health/eprescribing/erx032011guidance.pdf
E-Health Opportunities Beyond EHR Adoption

• Using EHR data to support better patient care/outcomes, and improved community health

• Health information exchange (HIE)
  • Foundational
  • Robust
  • Optimal
Part 1: Data
What is Driving the Need for Better Health Data

• Care coordination

• Increasing health costs – “We can’t treat our way out of this”

• Recognition that many conditions affect a person’s ability to be healthy

• Communities in crisis – epidemics, disasters, public emergencies

• Community health assessments (CHA/CHNA)
Data Creates Opportunity!

PUBLIC HEALTH PRACTICE

LEVEL OF VALUE

DATA

INFORMATION

KNOWLEDGE

WISDOM

PRACTICE

HEALTHIER COMMUNITIES

Adapted by: Marty LaVenture, Bill Brand, Minnesota Department of Health; Karen Zeleznak, Bloomington Division of Public Health, 2008
“Connecting Communities” Toolkit

- Stories from the field
- Getting Started: Considerations and Resources to...
  - Engage community partners
  - Inventory data resources
  - Understand EHR Data and Information
  - Assess capacity to use EHR data and information
- Resources
  - Inclusion and exclusion criteria for EHR indicator queries
  - Example data variables
  - Example data use agreement
  - Example data dictionary

Available online: [http://www.health.state.mn.us/e-health/publications/usingdata.html](http://www.health.state.mn.us/e-health/publications/usingdata.html)
1. Engage community partners
2. Inventory data resources
3. Assess capacity to use EHR data and information
4. Analyze, summarize, and distribute information
Stories from the Field

- Central Minnesota
  - Stearns County Public Health
  - CentraCare Health System
- Hennepin County Private/Public Health Informatics Collaborative (PPHIC)
  - 3 local health departments
  - 5 health providers
  - Minnesota Department of Health
- Twin Cities Metro Center for Community Health (CCH)
  - 10 public health departments
  - 18 hospitals
  - 7 health plans
Hennepin County PPHIC Measures

- Age in Years
- Sex
- Race
- Ethnicity
- Country of Birth/Origin
- Preferred language
- City of residence
- Zip code of residence
- County of residence

- Tobacco use
- Height
- Weight
- Diabetes (adults only)
- Pre-Diabetes (adults only)
- Asthma
- Hypertension (adults only)
- Last blood pressure (adults only)
Hennepin County PPHIC Data File Specifications

• Five health system datasets will be aggregated into two CSV datasets
  • Adults (18-90+ years)
  • Pediatric (2-17 years)
• Each record/row will represent one patient, not one encounter
• De-duplication will occur within a system, but not across systems as medical record will not be collected
• Data will be based on patient’s age as of January 1, 2016
• Data will be pulled annually
• Primary care, well women, and well child checks only
• Pregnancy flag will be created, OB/GYN specialty not excluded
• Purpose
  • Support alignment of Community Health Assessment data for CCH member organizations to improve coordination and reduce duplicate work

• Goals
  • Develop a list of CHNA/CHA indicators common to all members
  • Define and pilot test the data indicators – secondary and EHR
  • Use a new coordinated list of data indicators in the next CHA/CHNA
  • Long-range: create regional data dashboard using core indicators
CCH Health Indicators

• Obesity
• Nutrition
• Physical Activity
• Tobacco Use
• Cardiovascular Disease
• Diabetes
• Mental Health
• Substance Use

• Maternal, infant, and child health
• Asthma
• Cancer
• Injury and Violence
• Oral Health
• Access to Health Services
• Environmental Health
• Reproductive and Sexual Health
• This work takes time

• Anticipate a broad range of data competency among partners

• Prepare for debates about which indicator/definition to use

• Don’t forget sustainability planning for procurement, storage, display, sharing

• Room for growth:
  • Incorporating claims data
  • Adding program or social determinants data not previously used among health care partners (criminal justice data, community services data, etc.)
Part 2: Health Information Exchange
About HIE

• 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.

_HIE (the verb) is the electronic transmission of health-related information between organizations (assuming the person has provided consent to share the information)._  

_HIE (the noun) is an organization that facilitates information exchange. Several of these HIE service providers operate in Minnesota._
Conceptualization of HIE

Optimal HIE
Use connected data to support community health

Robust HIE
Use information to manage patient care

Foundational HIE
Ensure information flows with the patient
How HIE Supports Health

**Foundational HIE**
- Ensure information flows with the patient
  - Provider-to-provider exchange of basic health documentation using national standards

**Robust HIE**
- Use information to manage patient care
  - Information exchange across all of a person’s care providers
  - Integrating a person’s health information into a consolidated database
  - Data analytics to support providers and patient outcomes

**Optimal HIE**
- Use connected data to support community health
  - Information to assess the health of an entire community
  - Information to support public health prevention, preparedness, and response
Examples of HIE: Managing Complex Care

<table>
<thead>
<tr>
<th>Foundational HIE</th>
<th>Robust HIE</th>
<th>Optimal HIE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ensure information flows with the patient</strong></td>
<td><strong>Use information to manage patient care</strong></td>
<td><strong>Use connected data to support community health</strong></td>
</tr>
<tr>
<td>• John lives in Aitkin and needs to have hip replacement surgery in Minneapolis. He has several chronic conditions, including depression.</td>
<td>• John’s health provider in Aitken wants to support better outcomes for her patients who have (or are at risk for) chronic conditions. She uses HIE to collect and aggregate data on these patients to:</td>
<td>• A community is addressing the opioid epidemic by using HIE to allow health providers to identify prescribed narcotic abusers and connect them to treatment services.</td>
</tr>
<tr>
<td>• Surgeon’s team can “look up” John’s medical record in advance of the consultation and surgery.</td>
<td>• Provide feedback reports to care teams.</td>
<td>• Hospitals notify care coordinators when a patient arrives at the emergency room to ensure the patient has access to any needed support services.</td>
</tr>
<tr>
<td>• John’s provider in Aitkin can receive updated medical record including procedure and medications, such as pain meds prescribed for recovery.</td>
<td>• Make referrals for clinical and community services, and receive “closed loop” information in return.</td>
<td>• A local health department collaborates with the community hospital, clinic and pharmacies to understand patterns in opioid misuse.</td>
</tr>
<tr>
<td>• John’s provider can monitor the recovery and offer options to narcotic pain meds.</td>
<td>• Support care coordination to ensure that all of a patient’s health needs are addressed; in John’s case, ensuring that his recovery proceeds and monitoring his pain management.</td>
<td></td>
</tr>
</tbody>
</table>

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Problem: HIE is Not Happening Statewide

Percent of Minnesota hospitals and clinics that routinely have necessary clinical information from outside providers available electronically

- **Hospitals**
  - Total: 63%
  - Epic EHR Users: 90%
  - Non-Epic EHR Users: 21%

- **Clinics**
  - Total: 38%
  - Epic EHR Users: 59%
  - Non-Epic EHR Users: 16%

*Source: Minnesota e-Health Profile, MDH Office of Health IT, 2017*
Minnesota’s Current HIE Model

- Hybrid of public utility and private sector-led with government oversight.

- 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.

- Includes limited government oversight to ensure:
  - Fair practices
  - Availability of HIE options
  - Compliance with state and federal requirements, including privacy, security and consent protections
Types of HIE Service Providers

• Minnesota’s HIE oversight law recognizes two types of entities that provide the infrastructure for HIE. Both are required to be certified under the state’s oversight program.

  • **Health information organization (HIO)** is an organization that oversees, governs, and facilitates HIE among health care providers from unrelated health care organizations.

  • **Health data intermediary (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).

• Minnesota’s EHR mandate requires all providers to connect to an HIO, either directly or through an HDI.
Current State of HIE in Minnesota: Disconnected Networks

Network facilitated by EHR vendor

- Connected to a network
- Not connected to a network
- Partial or incomplete connection

HIO 1

National network A

National network B

HIO 2
Future HIE for Foundational Connections

Network facilitated by EHR vendor

Connected to a network

= Uniform standards and rules
Efforts to Advance HIE in Minnesota

• MN e-Health Initiative’s HIE Workgroup
  • Identified barriers to HIE (2016)

• MN SIM e-health funding
  • Implement connections to Minnesota State-Certified HIOs and HDIs
  • E-Health Roadmap
  • Privacy/Consent technical assistance
  • Event alerting service (EAS)

• Legislatively directed HIE Study to develop recommendations
  • Based on recommendations from the 2015 Governor’s Health Care Financing Task Force that addressed data sharing to better support patient care and accountable payment models.

• National framework for trusted exchange
1) Business case and economic incentives are unbalanced
2) Competing organizational priorities
3) Establishing partner relationships/agreements is often difficult, time-consuming and costly
4) Limited availability and access to skilled, knowledgeable workforce
5) Difficult to understand & execute legal and policy requirements (e.g., Minnesota consent)
6) Challenges to HIE implementation (e.g., workflow)
7) Technical and data standard practices lack consensus for approaches and implementation
8) Key transactions need to be prioritized (e.g., notification and alerting)
9) Selecting an HIE service provider is complicated by rapidly evolving market
10) Insufficient education, communication and technical assistance for providers
11) Minnesota HIE approach is not fully implemented
12) Lack of individual engagement diminished HIE demand (e.g., consumers accessing portals)

Source: Gathered input from multiple sources and stakeholders (e.g., SIM e-Health grantees, e-Health Roadmap workgroups, REACH, and State-Certified HIE vendors) to create list of barriers to HIE
SIM Minnesota: e-Health Investments

- **e-Health Grant Program**
  1) support secure exchange of medical or health-related information among organizations participating in, or preparing to participate in, *accountable care models*;
  2) expand HIE to *priority settings* (long-term & post-acute care, behavioral health, local public health and social services);
  3) support use of HIE to more effectively identify opportunities for improvement and *coordination*, to improve health and health care.

- Privacy, Security and Consent Management for Electronic HIE

- **e-Health Roadmap**

*These grant projects are part of a $45 million State Innovation Model (SIM) cooperative agreement, awarded to the Minnesota Departments of Health and Human Services in 2013 by The Center for Medicare and Medicaid Innovation (CMMI) to help implement the Minnesota Accountable Health Model.*
e-Health and HIE & Data Analytics Grant Programs

14 communities (~5.5 million dollars awarded)

Development Grant (Round 1 Only)
- Fairview-Ebenezer (Minneapolis), $75,000
- Integrity Health Network (Duluth), $50,885
- Lutheran Social Service (St. Paul), $75,000
- Medica Health Plans (Minnetonka), $75,000
- White Earth Nation (White Earth), $75,000
- Wilderness Health (Two Harbors), $75,000

Implementation Grant (Round 1 and 2)
- Beltrami Area Service Collaborative (Bemidji), $201,409
- FQHC Urban Health Network (St. Paul), $440,970
- Integrity Health Network (Duluth), $222,748
- Lutheran Social Service (St. Paul), $348,169
- Northwestern Mental Health (Crookston), $745,323
- Otter Tail County Public Health (Fergus Falls), $483,565
- Southern Prairie Community Care (Marshall), $897,780
- Touchstone Mental Health (Minneapolis), $567,597
- Winona Health (Winona), $265,950 and $245,000

HIE and Data Analytics Grant
- Integrity Health Network (Duluth), $187,200
- Lakewood Health System (Staples), $199,956
- Lutheran Social Service (St. Paul), $189,153
- Minnesota Community Healthcare Network (Minneapolis), $110,000
- Northwestern Mental Health (Crookston), $200,000
- Southern Prairie Community Care (Marshall), $181,000
Overall HIO Connections are Increasing

As of August 2017, 250 organization sites are connected to an HIO.

<table>
<thead>
<tr>
<th>Organization Type</th>
<th>Total # of sites connected with SIM $</th>
<th>Total # of sites connected</th>
<th>% of total sites connected with SIM $</th>
<th>% of total sites connected by Provider Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinic (n=~ 1400)</td>
<td>37</td>
<td>180</td>
<td>21%</td>
<td>~13%</td>
</tr>
<tr>
<td>Hospital (n=~ 145)</td>
<td>7</td>
<td>29</td>
<td>24%</td>
<td>~20%</td>
</tr>
<tr>
<td>Human Services</td>
<td>6</td>
<td>6</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Mental Health</td>
<td>16</td>
<td>17</td>
<td>94%</td>
<td></td>
</tr>
<tr>
<td>Public Health</td>
<td>4</td>
<td>6</td>
<td>67%</td>
<td>~25%</td>
</tr>
<tr>
<td>Public Health/Human Services</td>
<td>12</td>
<td>12</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>250</td>
<td>33%</td>
<td></td>
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</tbody>
</table>

Source: MDH–OHIT Survey data 2015, connection includes HIO participatory agreement with direct and/or query capability

**Note:** 164 (65%) organizations sites are a part of the Allina HIO/health system
What Have We Learned?

*Overall SIM/e-Health Observations*

- Connection/coordination among SIM drivers over the grant period
  - Data analytics, HIE, ACHs
- Three rounds of grants; incorporated insights/lessons learned and adjusted grant RFPs
- Evolution in thinking about/future plans for *use of information* obtained through HIE
- Significant changes in the HIE landscape (HIOs and HDIs)
- Importance of building long-term relationships through e-health community collaboratives
What is EAS?

- Real-time alerts when patients are admitted, discharged, or transferred
- Medicaid patients are automatically included in the alerts

Benefit of EAS

- Primary care team can engage in a timely manner to address patient care needs

Roles

- MN Department of Human Services – Implementing agency
  - Beginning with current Integrated Health Partnerships
- Audacious Inquiry - Vendor
How EAS Works: Human-Readable Alerts

• Alert Data Elements:
  • ADT Data Elements
  • Beneficiary Panel Data Elements
To assess MN's legal, financial, and regulatory framework for HIE, including the requirements the MN Health Records Act;

Make recommendations for modifications that would strengthen the ability of MN health care providers to:

- securely exchange data
- in compliance with patient preferences, and
- in a way that is efficient and financially sustainable.

Released March 2018

http://www.health.state.mn.us/e-health/hie/study/index.html
Move Minnesota in the direction of a connected networks model that will provide essential HIE services accessible to all stakeholders statewide, and to align with and build upon national initiatives. To achieve this:

• The Minnesota Legislature should modify the Minnesota Health Records Act to align with HIPAA for disclosure purposes only while maintaining key provisions to ensure patient control of information and to support HIE.

• MDH should establish a HIE task force of the e-Health Advisory Committee to develop strategic and implementation plans (including rules of the road) for the connected networks model by focusing on actions and policies to:

• The Minnesota Legislature should act on the recommendations of the e-Health Initiative’s HIE task force, which are expected to include:
  • Updating Minnesota’s Health Information Exchange Oversight law to support the coordinated networks concept.
  • Appropriating funds to help providers connect to HIE services and develop ongoing coordinated HIE services.
MDH should establish a HIE task force of the e-Health Advisory Committee to develop strategic and implementation plans (including rules of the road) for the connected networks approach by focusing on actions and policies to:

- Expand exchange of clinical information to support care transitions between organizations that use Epic and those that do not.

- 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.
Proposed HIE Task Force Membership

Category of Representation/Perspective:

1. MN Health Information Organization (HIO)- A
2. MN Health Information Organization (HIO)- B
3. Professional with Expert Knowledge of HIE
4. Professional with Expert Knowledge of Legal Context and Patient Consent
5. MN Department of Human Services (DHS)
6. Chief Medical Information Officer
7. Practicing clinician (e.g., physician, nurse, mental health provider)
8. Hospital, health system, ACO or IHP - A (Large)
9. Hospital, health system, ACO or IHP - B (Small)
10. Long-Term and Post-Acute Care
11. Health Plan, Payer or Health Care Purchaser
12. Individual with Expert Knowledge of Patient Advocacy
# HIE Task Force- Proposed Timeline

<table>
<thead>
<tr>
<th>Date/Period</th>
<th>Event Description</th>
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<tbody>
<tr>
<td><strong>2018</strong></td>
<td></td>
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<tr>
<td>April 26</td>
<td>Update to Minnesota e-Health Advisory Committee on HIE Task Force</td>
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<tr>
<td>May – September</td>
<td>Monthly HIE Task Force Meetings</td>
</tr>
<tr>
<td>September</td>
<td>Update on activities to Minnesota e-Health Advisory Committee</td>
</tr>
<tr>
<td>October – December</td>
<td>Monthly HIE Task Force Meetings</td>
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<tr>
<td>December</td>
<td>Report on deliverables to Minnesota e-Health Advisory Committee</td>
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<tr>
<td><strong>2019</strong></td>
<td></td>
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<tr>
<td>January – June 2019</td>
<td>Additional Task Force monthly meetings as needed and presentations to Minnesota e-Health Advisory Committee</td>
</tr>
</tbody>
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03/15/2018
Format of the National Draft Trusted Exchange Framework

Part A—Principles for Trusted Exchange

General principles that provide guardrails to engender trust between Health Information Networks (HINs). Six (6) categories:

» **Principle 1 - Standardization**: Adhere to industry and federally recognized standards, policies, best practices, and procedures.

» **Principle 2 - Transparency**: Conduct all exchange openly and transparently.

» **Principle 3 - Cooperation and Non-Discrimination**: Collaborate with stakeholders across the continuum of care to exchange electronic health information, even when a stakeholder may be a business competitor.

» **Principle 4 - Security and Patient Safety**: Exchange electronic health information securely and in a manner that promotes patient safety and ensures data integrity.

» **Principle 5 - Access**: Ensure that patients and their caregivers have easy access to their electronic health information.

» **Principle 6 - Data-driven Accountability**: Exchange multiple records at one time to enable identification and trending of data to lower the cost of care and improve the health of the population.

Part B—Minimum Required Terms and Conditions for Trusted Exchange

A minimum set of terms and conditions for the purpose of ensuring that common practices are in place and required of all participants who participate in the Trusted Exchange Framework, including:

» Common authentication processes of trusted health information network participants;

» A common set of rules for trusted exchange;

» A minimum core set of organizational and operational policies to enable the exchange of electronic health information among networks.
Goals of the Draft Trusted Exchange Framework

**Goal 1:** Build on and extend existing work done by the industry

The Draft Trusted Exchange Framework recognizes and builds upon the significant work done by the industry over the last few years to broaden the exchange of data, build trust frameworks, and develop participation agreements that enable providers to exchange data across organizational boundaries.

**Goal 2:** Provide a single “on-ramp” to interoperability for all

The Draft Trusted Exchange Framework provides a single “on-ramp” to allow all types of healthcare stakeholders to join any health information network they choose and be able to participate in nationwide exchange regardless of what health IT developer they use, health information exchange or network they contract with, or where the patients’ records are located.

**Goal 3:** Be scalable to support the entire nation

The Draft Trusted Exchange Framework aims to scale interoperability nationwide both technologically and procedurally, by defining a floor, which will enable stakeholders to access, exchange, and use relevant electronic health information across disparate networks and sharing arrangements.

**Goal 4:** Build a competitive market allowing all to compete on data services

Easing the flow of data will allow new and innovative technologies to enter the market and build competitive, invaluable services that make use of the data.

**Goal 5:** Achieve long-term sustainability

By providing a single “on-ramp” to nationwide interoperability while also allowing for variation around a broader set of use cases, the Draft Trusted Exchange Framework ensures the long-term sustainability of its participants and end-users.
Contacts

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• or mn.ehealth@state.mn.us

Minnesota e-Health web page:

http://www.health.state.mn.us/e-health/
Act Today, Impact Tomorrow

Thursday, June 14, 2018
Earle Brown Heritage Center
Brooklyn Center

The goal of the annual Minnesota e-Health Summit is to provide quality education about emerging national and state e-Health initiatives. In addition to hearing from internationally recognized e-Health leaders, attendees discuss policy issues, learn about the progress of innovative projects underway in Minnesota, and get progress reports that highlight statewide activities.

http://www.health.state.mn.us/e-health/summit/index.html