HealthInfoNet – The Health Information Exchange Value Added Activities to Support Health Reform and Pharmacies in the Future

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Topics To Be Covered

- HealthInfoNet Overview and Exchange Updates
- HealthInfoNet Value-Added Activities
- Introduction to the HealthInfoNet Data Warehouse
- HealthInfoNet Data Use and Release Policy
- State Innovation Model Grant
- HIE and the Pharmacy
- Discussion
About HealthInfoNet

• A private independent nonprofit HIT organization funded by both private and public sources.
• Operates the statewide HIE in Maine – A query-based centralized HIE model – live in January 2009
• Statewide Regional Extension Center
• SIM Testing Grant Partner
• Additional Services: HIT Convening/MU Support, Patient Identification, VNA, ADT Notifications, ACO Data Management, Analytics
What is the HIE?

• HealthInfoNet operates Maine’s **statewide health information exchange (HIE)**, a secure, standardized electronic system where providers can share important patient health information.

• The use of this system:
  – Saves time and reduces paperwork.
  – Facilitates more informed treatment decision-making.
  – Leads to improved care coordination, higher quality of care, and better health outcomes.
Maine’s HIE History

- **2004** - Maine Health Access Foundation, Maine CDC, Maine Quality Forum and Maine Health Information Center study need and support for an exchange in Maine.

- **2005** - Stakeholders begin planning and development.

- **2006** - HealthInfoNet incorporated with Devore Culver, formally Chief Information Officer of Eastern Maine Healthcare, as Executive Director.

- **2008** - Demonstration phase begins.
  - Participants included MaineHealth, Central Maine Healthcare, Eastern Maine Healthcare, Maine General Health, Martin’s Point Health Care, Franklin Memorial Hospital and the Maine CDC.

- **2010** - Demonstration phase ends and statewide HIE roll-out begins.
How Does the HIE Work?

- HealthInfoNet’s system combines information from separate health care sites to create a single electronic patient health record
- Patient health information is automatically uploaded from a provider’s electronic medical record system
- The information is standardized and aggregated across care sites
- Clinicians can seamlessly access their patient’s information in HealthInfoNet from within their EMR
- HealthInfoNet automates reporting of certain illnesses and conditions like Lyme disease or food poisoning, to public health experts at the Maine CDC
Data Categories Managed in HIN Today

- Patient Identifier and Demographics, including insurer
- Encounter History
- Laboratory and Microbiology Results
- Radiology Reports
- Adverse Reactions/Allergies
- Prescription Medication History (claim/fill – incomplete!)
- Diagnosis/Conditions/Problems (primary and secondary)
- Immunizations
- Vital Signs
- Dictated/Transcribed Documents
- Continuity of Care Documents (CCD)
What do providers say about using the HIE?

• **It’s more efficient.** Automated sharing of information, less paperwork, reduced time to access clinical information at the point of care, fewer repeat tests and procedures.

• **Results in more Informed treatment decisions.** A more complete and up-to-date patient medical record, including information from all a patient's participating health care providers.

• **Leads to healthier patients.** Fewer medical errors, improved patient safety, improved continuity of care, and better patient outcomes.
HIE Connections

- 34 of 37 hospitals (all under contract to connect in 2014)
- 34 FQHC sites
- 400+ ambulatory sites including physician practices, behavioral health and long term care facilities

www.hinfonet.org
HIE Population Statistics
As of April 31, 2014

- 1,326,691 lives in the HealthInfoNet database
- 1,174,795 Maine residents have clinical data in the exchange (88% of Maine’s resident population)
- 15,450 individuals have opted out (1.2%)
- 2,049 Maine clinicians and support staff are active users of the exchange
- 60% of active users accessed the exchange in April, 2014
HIE Operating Statistics
As of April 31, 2014

- **Over 13 Million** inbound messages are received by HealthInfoNet each month
- **157,820** patient clinical messages sent monthly in support of ACO organizations in Maine
- **61,088** data transmissions sent monthly to Maine CDC in support of Electronic Lab Reporting, Syndromic Surveillance and Immunization Reporting (Meaningful Use Measures)
- **21,164** patient lookups performed each month
- **9,800** Continuity of Care Documents (CCD) sent monthly for discrete data integration into EHR applications
- **Over 8,000** real time notifications sent each month
- The HealthInfoNet Central Data Repository (CDR) is **2.34 TB** in size and is growing at **4 GB** a day
What Does the System Look Like?
Core Exchange Services

- Interface Development, Management and Support
- Data Mapping and Standardization
- Patient Centered Portal Access and Data Download Functionality
- Real Time Event Notification
Why Patients Care

- Care is more coordinated.
- Less duplicate tests and procedures.
- Less paperwork.
- Fewer errors and safer care.
- Lower out-of-pocket costs.

Using HealthInfoNet, Bob’s health care providers can see all of the information listed above in one secure electronic location.
HIE Participant Agreement

• Each participant retains ownership of its own data
• PHI use is restricted to supporting treatment between point of service and public health
• Each participant is responsible for user authorization, access monitoring and sanction management
• HealthInfoNet serves as agent for participants in managing consumer opt-out process
HIE Security Processes

• Uses a Virtual Private Network (VPN), not connected to the Internet and protected by a dedicated Firewall

• All users are given unique passwords and can only access the system from their organization’s EHR.

• Data is encrypted at all times (in motion and at rest) and stored separately from clinical data.

• Provider activity logs are audited daily by HealthInfoNet staff and access reports can be generated at any time.

• Users must confirm they have a relationship with the patient and a need to see their information. This is recorded in the system.
Privacy and Consent Policies

- Maine follows opt-out consent policy designed in 2007 with input from stakeholders representing patients, providers, employers, payers, and government.
- Consumers opt-out online, through mail, or over the phone.
- Consumers opt-out once for all care locations at which time their clinical data is deleted, not just hidden.
- State law requires participating providers give the patient a state-approved form the first time they visit that provider location.
- 2011 State law modified to provide for opt-in of mental health and HIV data.
HealthInfoNet Value Added Services

- Meaningful Use Stage 1 & 2 Connection to Public Health for Laboratory Reporting, Syndromic Surveillance, Immunization Reporting
- ACO/Value-Based Purchasing Data Source
- Vendor Neutral Architecture Image Repository
- Enterprise Master Patient Index Management
- Interoperable Secure Messaging
- Analytic and Reporting Tools
Meaningful Use Stage 1 & 2

- Standardized, Structured Electronic Lab Result Reporting to Maine CDC for Positive Values Associated with Mandated Disease Reporting
- Adult Immunization Reporting to Maine’s IMMPACT II Immunization Registry
- Syndromic Surveillance Reporting to Maine CDC
ACO/Value-Based Purchasing Data Supplier

- Data Source for NNEACC (ADT & Lab) for MaineHealth & Bangor Beacon LLC ACO Patients
- Monthly ACO EMPI File for Bangor Beacon LLC
- Data reporting requests
Vendor Neutral Architecture Image Repository

- Statewide Repository for Managing Digital Archive Images (Radiology, Cardiology, etc.)
- Reduced Total Cost of Operation for Image Management Through Statewide “Group Purchase” Strategy
- Enhanced Access to Relevant Prior Examinations to Support Reduced Testing Redundancy
- Increased Leverage with PACs Vendor
- Strengthened Business Recovery Position
Enterprise Master Patient Index Management

• Supports Resolution of Patient Identity Across An Enterprise Where Different Medical Record Numbers Are Used to Manage the Same Patient

• Delivers and Maintains a Unique, Single Enterprise Patient Identification Number for Better Coordination of Care Management, Billing, Data Integration
Interoperable Secure Messaging

• Connects Hospital and Physician Practices to The National Health Information Network (NwHIN) to Support Secure, Trust-Based, “Push” Exchange of Clinical Information

• Provides Access to Registries of “Authenticated” NwHIN User e-Mail/Secure Messaging Addresses

• Supports Secure Exchange of Clinical Information Across State Lines

• Low Annual Fee of $144 per User Account
Data Warehouse and Reporting Tools

• Leverage Transactional Data Flowing Into the Exchange to Support Quality and Population Health Analysis as well as State, Federal, and Health Plan Reporting

• Near Real Time Data Set to Support Market Share Analysis, Patient Origin Studies, etc.

• Foundation for Community-Wide Health Reform Reporting

• Near real-time clinical risk profiling
  – Readmission
  – Inpatient Utilization
  – ER Admission
  – High Cost
HIN Analytic and Reporting Dashboard Views
This chart shows that the selected hospital has 81% of market share for orthopedic surgery cases within the county. And the highest volume procedures.
This chart shows that volumes for orthopedic surgery for the sample hospital are declining for both outpatient and inpatients, and market share for inpatient orthopedic surgery within their service area is declining.
Variation Management: Length of Stay

The Variation Management module combines HIN HL7 data with Hospital billing data. Variation is measured across length of stay, total cost, resource costs (laboratory, radiology, pharmacy, etc), and orders depending on the availability and integrity of the data.

Avoidable day threshold target = 3.6

The modules show overall performance, as shown by a distribution chart with threshold targets. The targets are set based on the amount of variation present.

Physician performance is also measured to determine if the variation is partly physician driven.
Readmission Risk Management Dashboards: Readmission Risk Profile

The map shows where these patients originate.

These charts show distribution of patients by chronic disease, service line, and diagnostic category.

This visuals shows the number of inpatient encounters by 30 day readmission risk level.
Readmission Risk Management Dashboards: Readmission Risk Patient List

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Multiple filters to retrieve a patient encounter list and associated risk scores.
Population Risk Management Dashboards: Population Profile

This chart shows that for the selected health system there are 81 patients who have >70% chance of an ED visit, inpatient admission, and being high cost within the next 6 months.

The map shows where these patients originate.

The most common Diagnoses for these patients are Hypertension and Diabetes.
The summary above shows that this 59 year old female had 5 inpatient admissions, 14 ED visits, and 36 outpatient visits in the last 12 month period.

The chart shows the timing of each encounter along with the risk scores increasing over time.
HealthInfoNet Data Use and Request: By Participants and Non Participants

1. Participant request for clinical data for treatment and/or operations purposes
2. Participant request for meeting reporting requirements
3. Request by Participant for providing clinical data to patients via PHR
4. Request for utilization data authorized as public
5. Request by a non-Participant for provider specific data not considered public
HIN State Innovation Model (SIM) Grant Activities

• Provide automated notifications to MaineCare care management staff as well as participating provider care managers when MaineCare patients are admitted to Emergency Departments and Inpatient Settings (Approval by HIN data use committee received 3/13)

• Continuing HIN’s Behavioral Health HIT efforts:
  – Paying for HIE subscription fees for participating behavioral health providers
  – Supporting HINs technical needs in managing the opt-in model
  – Providing EHR adoption incentives to BH Providers to support their purchase and implementation of EHRs and connect to HealthInfoNet

• Developing and deploying the "blue button" approach to allowing patients who access their medical records through provider-base personal health portals, to access their HealthInfoNet data

• Measuring clinical quality of care delivered for MaineCare patients and reporting those quality measures to provider and MaineCare (pending approval by the HealthInfoNet Data Use Oversight Committee and validation by participating organizations)
Pharmacy HIE Opportunities

- HIN currently contracts with Sure Scripts / Rx Hub medication information from adjudicated claims
  - Drugs paid for in cash are missing and HIN has no way of collecting immunization data from pharmacies (and retail clinics)
- Pharmacies are moving toward Medication Therapy Management (MTM)
  - Access to HIN will support better decision making by pharmacists
  - HIN data can assist in conducting medication reconciliation with patients
- Pharmacy information systems are often not optimally designed to support clinical encounters
  - Pharmacists currently spend time seeking clinical information from providers/labs when filling prescriptions
  - Can HIN support the development of a pharmacy medical record?
  - HIN is currently planning the deployment of a statewide secure messaging structure – how can this be leveraged to support pharmacy needs?
- Are there other areas of potential collaboration?
Questions/Comments?

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