Successfully Navigating the HIE Landscape

Presented by:
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What is HIE?
Verb vs. Noun

**Verb**

- The electronic sharing of health-related information among organizations.
- The **ACT** of data sharing (exchange)

**Noun**

- An **organization** that provides services to enable sharing of health-related information.
- Health Information Organization (HIO, HIEO)
“The goal of health information exchange is for information to follow a patient where and when it is needed, across organizational, vendor, and geographic boundaries.”

Impact on Patient Care

- Costs
- Quality
Why HIE?
“The Five Rights of HIE”

- Right Information
- Right Person
- Right Format
- Right Channel
- Right Time
**Why HIE?**

ONC’s “Holy Grail”

Concept of a “network of networks (HIEs)”

*formerly known as NHIN or NwHIN (Nationwide Health Information Network)*
Why HIE?

Simplify connectivity and infrastructure requirements associated with exchange.

Without HIE

With HIE
HIE Governance Types

Public HIE

- Pharmacies
- Labs
- Radiology
- Physicians
- Clinics
- Long Term Care
- HIO
- Steering Team

- Hospitals
- Payer
HIE Governance Types

- Community or Enterprise
- Privately Funded
- Centralized or Hybrid
- Locally Governed

Private
HIE Governance Types

Private HIE

- Hospitals
- Exchange
  - Pharmacies
  - Labs
  - Radiology
    - Physicians
    - Physicians
    - Clinics
    - Long Term Care
- Private Org
Public vs. Private HIE

Not an “either/or” Scenario!

- Intrastate Exchange
- Public Health Reporting and Alerting
- Syndromic Surveillance
- Provider and Facility Comparative Metrics

- Implement EMR Interfaces
- Support ACO or PCMH
- Competitive Advantage
- Meaningful Use
- Aggregate Data
Centralized Model

- Participants submit data to, and query data from, one central repository.
- Patient identity matching performed when record is added.
- Patient Consent and Access Control enforced centrally.

Pros
- High Performance
- High Resiliency
- Data Analysis

Cons
- High Infrastructure/Support Costs
- Data Security and Ownership
- Data Timeliness
Centralized Model

Centralized Repository Model

- Clinical Data Repository (CDR)
  - CDR-EMPI
  - Provider Medical Record Data: Demographics, Orders, Results, Diagnosis, Allergies, Treatments, Notes, Lifestyle habits, etc.
  - Eligibility Data: Plan effective dates and coverage

Other components include:
- Immunization Registry: Dates immunized
- Claims: Procedures, Diagnosis, Prescriptions
- Personal Health Data: Procedures, Diagnosis

Centralized EHR
Collection of clinically relevant data is held in a central CDR, from all entities the person has data in, which the user has security clearance for, as determined from the security policies, and consent. Participating systems update CDR as they receive updates.
Federated Model

- Connects participants directly to one another.
- Participants maintain their own data and respond to requests from other participants.
- HIO provides centralized EMPI, RLS, etc.

Pros

- Current Data
- Not Single System Dependent
- More Local Control of Data

Cons

- Dependent on Weakest Link(s)
- Complex Management of Patient Consent and Access Security
Federated Model

Decentralized EHR
Collection of clinically relevant data from all entities this person has data in, which the user has security clearance for. As determined from the security policies and consent, EHR is built "on the fly" by pulling all clinically relevant data from participating entities each time it is requested.
HIE Architectural Models

Hybrid Model

• Centralized repository is constructed over time as requests are processed by the exchange.
• The size and intent of the CDR can range from a focused database (e.g. enterprise patient portal) to the ultimate creation of a Centralized model.

Pros

• See Centralized and Federated Models

Cons

• See Centralized and Federated Models
Hybrid Model

HIE Architectural Models
Private HIEs – Enterprise HIE and Community HIE

- Hospital
- Employed Physician Practices
- Other enterprise entities

- Hospital
- Employed Physician Practices
- Other enterprise entities
- Other Community Providers
Why Enterprise or Community HIE?

- ACO or PCMH Initiative
- Care Coordination / Quality of Care
- Costs of Inefficiencies
- Readmissions
- Referral Volumes
- Competitive Position
- Aggregation of Data
- Longitudinal Patient Record
- Meaningful Use
- etc…
Challenges for HIE

- Patient Privacy and Security
- Workflow Continuity
- Staffing and Support
- Demonstrating Value
- Funding
- Stakeholder Trust
Success Factors for HIE

- Shared Vision
- Workflow Integration
- Patient Identity
- Clinical Interoperability and Usability
- Business and Clinical Governance
- Patient Confidence and Engagement
- Physician Engagement
- Patient Privacy and Security
- Measureable Value/ROI
**Most Important Health IT and HIE Challenges to Address in 2013**

- Privacy and security
- Leveraging health IT to improve healthcare quality
- Articulating value propositions for health IT investments
- Exchanging health information with other organizations
- Leveraging health IT to reduce healthcare costs
- Keeping up with the pace of change

*2013 Stakeholder Survey (February 7-22, 2013)*

www.nationalehealth.org
Recent Survey Results

*2013 Stakeholder Survey (February 7-22, 2013)

Most Impactful Barriers to Widespread HIE

- HIE financial sustainability
- Lack of interoperability
- Privacy and security
- Breadth and pace of change required of stakeholders
- Cost
- EHR vendor readiness

*2013 Stakeholder Survey (February 7-22, 2013)
Recent Survey Results

**Most Impactful Drivers of Widespread HIE**

- [Ability to improve care coordination](#)
- [Ability to improve healthcare quality](#)
- [Improved care coordination as cost-cutting strategy](#)
- [Interoperability](#)
- [Ability to reduce healthcare costs](#)
- [Meaningful use](#)

*2013 Stakeholder Survey (February 7-22, 2013)*

[Website URL: www.nationalehealth.org]
Recent Survey Results

Most Important Enablers of Exchange with Entities Served By Another Exchange Provider

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Most Important HIE Governance Goals

- Increase interoperability
- Reduce the cost and complexity of exchange
- Increase providers' trust about the exchange services they use
- Increase consumers' trust about the exchange of their information
- Support for new functions such as personal health records, analytics, registries, public health reporting
- Better align state and federal policy to enable exchange

*2013 Stakeholder Survey (February 7-22, 2013)
Observations about HIE

- **Physician “IT Fatigue”**
  - Meaningful Use, EMR Implementations, ICD-10, etc.

- **Integration is Complex and Challenging**
  - EMR interfaces - portals, Direct SM less than ideal to physicians
  - EMR interfaces - out of scope for most public HIEs

- **Sustainability has been Elusive**

- **Technology has Limitations**
  - Cannot change human behavior

- **Need for “Last Mile Integration”**
  - US highway system and GPS network analogies
Implementation Strategy

Broad Scope of Services?

Health Information Exchange

**Patient Identification**
- Reconciles patients across HIE participants
- Identifies all the data sources for a patient
- Translates and moves data from one system to another
- Pulls/pushes information directly into EMRs
- Transports record from one location to another
- Sends notification when ‘patterns’ occur in the health information
- Recipient receives notification when select information changes
- Routes record to multiple destinations, often in order
- Stores select data for access, analytics, and mining
- Operational reporting capability

**Provider Portal**
- Allows paper-based physicians to access HIE
- Allows patients to interact with HIE services
- Delivers record non-electronically (e.g., fax, printer)

**Record Locator**
- Secure communications (non-portal)

**Integration Engine**
- Authenticates patients and providers
- Authorizes record access based on role
- Keeps audit trail of record access

**Delivery**
- Enforces patient consent on record access
- Removes PHI from record

**Patient Portal**
- Re-identification

**EMR Adapters**
- Restores PHI into record

**Secure email**

**Messaging**

**Authentication**

**Events**

**Authorization**

**Subscriptions**

**Audit**

**Workflow**

**Consent**

**Data Repository**

**De-identification**

**Reporting**

**Re-identification**
Implementation Strategy Recommendations

- Incremental Approach
  - Seek "Early Wins"
  - Measure and Demonstrate Value
HIE Trends

- Rise of Private HIEs
- Promotion of PHR as Form of HIE
- The Rise and Fall of State-Run HIE
- The Tenuous Role of HIE in MU

*John Loonsk, MD, FACMI, Chief Medical Information Officer at CGI*
Less than 20% of Hospitals and only 3% of Physician Practices are connected to a HIE (2011)

- Private HIEs grew from 62 to 161
- Public HIEs grew from 37 to 67 (2010-2011)

14% of the Public HIEs operational in 2010, ceased operations in 2011
Questions and Answers

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