Health Information Exchange

THE ABC’S OF HIE
&
WHAT PHYSICIANS MUST KNOW

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COO, HIE NETWORKS
Project Director, Big Bend RHIO
Agenda

1. The Current Environment
2. Why Use HIE and What is the Value?
3. HIE Models
4. HIE Components
5. Critical Concepts for HIE Success
Acronyms

• HIE – Health Information Exchange
• EMR – Electronic Medical Record
• EHR – Electronic Health Record
• NwHIN or NHIN – Nationwide Health Information Network
• ONC – The Office of the National Coordinator for Health Information Technology
• RHIO – Regional Health Information Organization
• PHR – Personal Health Record
What’s the difference?

**EMR = Electronic Medical Record**

1. Simply put, an EMR is a replacement to your paper charts WITHIN the four walls of your office.

**HIE = Health Information Exchange**

2. Health Information Exchange (HIE) is the term used to describe large-scale electronic communication of patient information between unaffiliated healthcare providers.

**EHR = Electronic Health Record**

3. If you think of an EMR as what is INSIDE the four walls of your office, think of EHR as an EMR that is connected to other healthcare providers through HIE.
2005 – Can It Be Done

Cardiologist

Dermatologist

Other…

Primary Care

Hospital

Dentist

Optometrist

Radiologist

Mental Health

OBGYN

Ear, Nose, Throat
2005 – Default Exchange Pathway

From a clinical perspective, data is incomplete and segmented.

No cohesive organization of healthcare community stakeholders.

Access to data for healthcare providers becomes unmanageable!

Each product has different:
- access points
- usernames/passwords
- education and training
- access rules

State-wide patient information and databases

Community & regional patient information

Mandated top-down push

Individual projects that do not engage the actual healthcare providers that use the system.
Improved Care Coordination
Data and Analytics
MU Compliance

- For MU Stage 1 - HIE is a component to one of the 15 core measures and 3 of the the 10 menu measures
  - **Core measure #14:** Capability to exchange key clinical information among providers of care
  - **Menu measure #1:** Capability to submit electronic data to immunization registries or immunization information systems and actual submission in accordance with applicable law and practice
  - **Menu measure #2:** Capability to submit electronic syndromic surveillance data to public health agencies and actual submission in accordance with applicable law and practice
  - **Menu measure #10:** The EP who transitions their patient to another setting of care should provide summary care record for each transition of care or referral
- For MU Stage 2 and 3 – HIE menu measures are moved to core and requirements are placed on where information lands (i.e. either an HIE or 3 disparate systems)
HIE – Is It Worth It?

Overview of Provider-Provider Transactions

<table>
<thead>
<tr>
<th>Provider Group</th>
<th>Size</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Group</td>
<td>5 clinicians</td>
<td>$0</td>
<td>$46,700</td>
<td>$133,000</td>
<td>$215,000</td>
</tr>
<tr>
<td>Medium Group</td>
<td>10 clinicians</td>
<td>$0</td>
<td>$93,500</td>
<td>$266,000</td>
<td>$429,000</td>
</tr>
<tr>
<td>Large Group</td>
<td>25 clinicians</td>
<td>$0</td>
<td>$215,000</td>
<td>$599,000</td>
<td>$979,000</td>
</tr>
<tr>
<td>Small Hospital</td>
<td>≤ 49 beds</td>
<td>$0</td>
<td>$47,800</td>
<td>$138,000</td>
<td>$222,000</td>
</tr>
<tr>
<td>Medium Hospital</td>
<td>50-199 beds</td>
<td>$0</td>
<td>$123,000</td>
<td>$350,000</td>
<td>$571,000</td>
</tr>
<tr>
<td>Large Hospital</td>
<td>200-399 beds</td>
<td>$0</td>
<td>$314,000</td>
<td>$875,000</td>
<td>$1,430,000</td>
</tr>
<tr>
<td>Jumbo Hospital</td>
<td>400+ beds</td>
<td>$0</td>
<td>$683,000</td>
<td>$1,930,000</td>
<td>$3,150,000</td>
</tr>
<tr>
<td>National</td>
<td>$0</td>
<td>$2,920,000,000</td>
<td>$8,110,000,000</td>
<td>$13,200,000,000</td>
<td></td>
</tr>
</tbody>
</table>

Attributes:

- Level 1: Charts and referrals carried by patient or mail
- Level 2: Faxed charts and referrals
- Level 3: Free-text electronic charts and referrals
- Level 4: Encoded, standardized electronic charts and referrals
### Value of HIE & Interoperability

#### Annual Net Return per Group or Hospital at Level 4

<table>
<thead>
<tr>
<th>Year</th>
<th>Small Group</th>
<th>Medium Group</th>
<th>Large Group</th>
<th>Small Hospital</th>
<th>Medium Hospital</th>
<th>Large Hospital</th>
<th>Jumbo Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$0.063</td>
<td>$0.609</td>
<td>$2.20</td>
<td>$0.770</td>
<td>$0.04</td>
<td>$4.26</td>
<td>$8.09</td>
</tr>
<tr>
<td>2</td>
<td>$0.652</td>
<td>$1.35</td>
<td>$3.39</td>
<td>$0.187</td>
<td>$0.502</td>
<td>$1.46</td>
<td>$3.64</td>
</tr>
<tr>
<td>3</td>
<td>$0.771</td>
<td>$1.59</td>
<td>$3.98</td>
<td>$0.236</td>
<td>$0.629</td>
<td>$1.80</td>
<td>$4.45</td>
</tr>
<tr>
<td>4</td>
<td>$0.889</td>
<td>$1.83</td>
<td>$4.56</td>
<td>$0.284</td>
<td>$0.754</td>
<td>$2.14</td>
<td>$5.25</td>
</tr>
<tr>
<td>5</td>
<td>$1.0</td>
<td>$2.06</td>
<td>$5.14</td>
<td>$0.333</td>
<td>$0.880</td>
<td>$2.48</td>
<td>$6.05</td>
</tr>
<tr>
<td>Annual after 5th yr</td>
<td>$1.13</td>
<td>$2.30</td>
<td>$5.73</td>
<td>$0.382</td>
<td>$1.01</td>
<td>$2.82</td>
<td>$6.87</td>
</tr>
</tbody>
</table>

in millions
Different HIE Models

Data controls is key

**EMR Vendor Driven**

1. A single EMR vendor is at the center of the HIE and allows providers to get access to patient records and, in some cases, pull information into their EMR.

   A single EMR vendor often control all data and what can be done with it.

   Doesn’t address the entirety of the healthcare community.

**Payer Driven**

2. Payer is at the center of the HIE.

   Payer controls data.

   NOTE: Currently payers have access to piles upon piles of CLAIMS data. THEY NEED CLINICAL DATA that is behind the claims data to better manage their risk.

**Provider Driven**

3. Providers are at the center of the HIE which means that they control their own data.

   Each connected party controls their own data which means you decide what can and cannot be done with it!

   This is the model of Big Bend RHIO and Gulf Coast HIE.

4. **Government Driven**
Model Considerations

- IDN and Health Systems
- Public vs Private
- Accountable Care Organizations (ACO)
- Existing Relationships
- Current Patient Flow
Medical Trading Areas
Communitywide Provider-Driven HIE

One access point and single login for patient information outside of the EMR!
- one login
- one set of policies
- one local credentialing organization

From a clinical perspective, the RHIN helps put the control of how data is displayed and organized into the hands of the stakeholders who are actually providing care.

RHIOs are uniquely poised both technologically and politically to integrate local and state data and deliver it to the healthcare providers of the community.

Cooperative projects that involve the stakeholders of the community region through the governance of the RHIO.

Community driven ground-up approach

State-wide patient information and databases

Community & regional patient information

Laboratory Specialists
Local Health Plan
Local Clinics
Radiology Specialists
Hospitals

State Medicaid
Immunization Records
Rx Claims
Others...
HIE Components

• Operational Legal Governance

• Federated Infrastructure
  – Interfacing of EHR’s
  – MPI (Master Patient Index)
  – RLS (Record Locator Service)
  – Authentication & Security
  – Credentialing
  – Audits trails & Non repudiation
  – Provider Index

• Management and HIE Services

• Revenue!
Operational Legal Governance = 80%

Operational Legal Governance for HIPAA/HITECH Security
Federated Architecture

Data is not comingled – each connected data source has their own participation agreement & database…
Communitywide HIE “Hubs”
Regional Interconnectivity

Community 1

Community 2

Community n...

Standards Based Exchange
Standards

Online community for the Security Assertion Markup Language (SAML) OASIS Standard

Improving the world’s health and well-being by unleashing health IT innovation
# HIE Services

<table>
<thead>
<tr>
<th>Service</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Membership</td>
<td>Includes HIE strategy and best practices, vendor negotiations for HIE interfacing, basic HIE gap analysis for MU, discounted integration service rates, and solidifies Participant “place holder” for interfacing queue.</td>
</tr>
<tr>
<td>Clinical Interfacing</td>
<td>Achieve meaningful use and save staff time by creating new patient records with the click of a button and automating the processes of gathering and sending patient chart information. Covers bi-directional interface between the HIE and the Participant PM, EMR, RIS, LIS and other EHR systems, management and security of Participants shared data, and complete security and data hosting.</td>
</tr>
<tr>
<td>Web portal access &amp; patient lookup</td>
<td>Instant access to demographic and clinical data from connected healthcare providers. View medical records from a secure HIPAA compliant Web Portal.</td>
</tr>
<tr>
<td>Document publishing &amp; fax</td>
<td>Secure electronic document publishing with simple-to-use document upload and transfer capabilities. Allows your office to securely share your medical records with any connected healthcare provider individually or publish to the community.</td>
</tr>
<tr>
<td>Clinical messaging &amp; notifications</td>
<td>Secure communication for connected healthcare providers. Think email and social networking that is HIPAA compliant.</td>
</tr>
<tr>
<td>Referral management</td>
<td>Allows users to efficiently manage in-coming and out-going referrals within their office and quickly send a referral to anyone in the medical community.</td>
</tr>
<tr>
<td>Electronic public health reporting</td>
<td>Complete public health reporting requirements per Meaningful Use and state administrative code. Requires clinical interface.</td>
</tr>
<tr>
<td>State HIE onboarding &amp; connection</td>
<td>Connect Participant to state level exchange. Requires clinical interface.</td>
</tr>
<tr>
<td>Training</td>
<td>Training is usually broken into two parts: 1) initial training to covers user credentialing, organization entry into system, system training, etc; and 2) a per hour rate for on-going training as requested.</td>
</tr>
<tr>
<td>Health IT &amp; MU consulting</td>
<td>Discounted per hour rates for experienced industry experts. We can provide health IT staff aug services as well as a monthly retainer for expert services.</td>
</tr>
</tbody>
</table>
# Revenue Model

## Participant Cost Worksheet

<table>
<thead>
<tr>
<th>One-time Costs</th>
<th>Scope</th>
<th>$/Hour</th>
<th># Hours</th>
<th>One-time Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Management Fee</td>
<td>Time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial Training Fee</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not-to-exceed Interfacing Fee</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Recurring Costs (rates based on selected services)

<table>
<thead>
<tr>
<th>Recurring Costs</th>
<th>$/Unit</th>
<th># Units</th>
<th>Monthly Total</th>
<th>Annual Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Membership Fee</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Bed Fee</td>
<td>$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Physician Fee <em>(MD, DO)</em></td>
<td>$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Extender Fee <em>(ARNP, PA, CNMW, etc)</em></td>
<td>$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Total            |        |         |               |              |

| Discount for Annual Invoicing ___ % |        |         |               |              |

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To build an HIE system that works you must understand what data is available and how it fits into a healthcare providers workflow.
## Interfacing

### What you must know

1. Interfaces involve two sides because they involve more than one software system = $$
2. They can be fairly complex.
3. They can take a long time to get done b/c of software providers limited resources & their strategic focus.
4. Make sure your contract provides language that includes your HIE.
   **Once your contract is signed, you are NOT in control anymore.**
5. Make sure that the interface is bi-directional and includes the appropriate data sets you are interested in both sharing with the community and receiving from the community.
6. **ALWAYS have a technical person (healthcare I.T. consultant) review your contract prior to signing it!**
Lessons Learned
(Just a Few)

• The need for HIE is local, we must exchange data locally first
• Minimal local exchange infrastructure currently exists
• The healthcare transformation common denominator is HIE required for ACO’s & PSN’s
• HIE lags well behind EMR focus & funding yet must be achieved in parallel
• EMR adoption without HIE provides limited overall efficiencies
• Focused effort on existing clinical data repositories could facilitate tremendous HIE in 12-18 months
Paralyzed Industry

- Hospitals vs Doc’s
- Transparency Concerns
- Liability Concerns
- Changes Standard of Care
- Learning Curve / Workflow Disruption
- No Clarity of Best Pathway
- Total Paradigm Shift Creates Fear of the Unknown

HIE = Medical Internet
Cloud Computing
End Game Shouldn’t Be the Starting Point

The Nationwide Health Information Network

The Internet

Standards, Specifications and Agreements for Secure Connections
Resource Articles


**HIE isn't “If” its “When”**

The one “constant” in healthcare reform whether its PSN’s, ACO’s or a hybrid is that we must transform the “paper” into discrete date elements for analytics to better manage risks, create efficiencies and improve chronic disease management.

The Common “denominator” to create real-time longitudinal patient records and needed analytical statistics from fragmented disparate systems is; **“HIE”**
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