InSight eSeminar "A CONNECTed health care system"

This eSeminar presentation will begin soon.
CONNECTing to the Nationwide Health Information Network (NHIN): The Road Ahead

An Interview with Dave Riley, Enaptics Consulting, LLC
FHA CONNECT Initiative Lead
NHIN Mission

Achieve better quality, value, and affordability of health and wellness service by establishing the Nationwide Health Information Network (NHIN)

Common, secure, nationwide, interoperable network for exchanging health information, and provide this infrastructure with low adoption barriers
What is the NHIN – A Network of Networks

Set of harmonized standards-based specifications for the exchange of health information between NHIN compliant Health Information Exchanges (NHIEs)

Confederation of entities, including NHIEs, bound by its mission and governance

- An Internet-based network that ensures secure transport
- Membership services to ensure only valid, trusted entities may participate
- Certification to ensure interoperability between entities
- Legal agreements that allocate responsibilities and accountability to protect privacy and security of information exchanges
- A curated set or indices to facilitate proper communications
NHIN Network of Networks

Mobilizing Health Information Nationwide

The Internet

Standards, Specifications and Agreements for Secure Connections
## NHIN Services

<table>
<thead>
<tr>
<th>Interface Specification</th>
<th>References Standards</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>Subject Discovery</strong></td>
<td>PIXv3</td>
<td>Services for locating patients based on demographic information</td>
</tr>
<tr>
<td><strong>Query for Documents</strong></td>
<td>XCA</td>
<td>Locate health documents associated with a specific patient that conform to a set of query criteria</td>
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<tr>
<td><strong>Retrieve Documents</strong></td>
<td>XCA</td>
<td>Retrieve specific requested documents associated with a patient</td>
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<tr>
<td><strong>Query Audit Log</strong></td>
<td>IHE ATNA</td>
<td>Log requests for patient health information and make this log available to patients</td>
</tr>
<tr>
<td><strong>Authorization Framework</strong></td>
<td>SAML</td>
<td>Articulate the justification for requesting patient medical information</td>
</tr>
<tr>
<td><strong>Consumer Preferences Profile</strong></td>
<td>XACML</td>
<td>Enable consumers to specify with whom they wish to share their electronic health information</td>
</tr>
<tr>
<td><strong>Messaging Platform</strong></td>
<td>SOAP/WSDL/WS-Addressing/WS-Security</td>
<td>Provide secure messaging services for all communications between NHIN-enabled health organizations</td>
</tr>
<tr>
<td><strong>Authorized Case Followup</strong></td>
<td>PIXv3</td>
<td>Provide an ability to re-identify pseudonymized patient records when legally permitted for public health case investigations</td>
</tr>
<tr>
<td><strong>Health Information Event Messaging</strong></td>
<td>WS-BaseNotification</td>
<td>Provide a publish/subscribe capability for ongoing feeds of data between NHIN-enabled health organizations</td>
</tr>
<tr>
<td><strong>NHIE Service Registry</strong></td>
<td>UDDI</td>
<td>Registry servers that enables NHIN-enabled health organizations to discover the existence and connection information for other NHIN-enabled health organizations</td>
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Federal Health IT Consortium

✓ Multi-agency collaboration to advance Health IT

✓ Participants
  • 16 Departments
  • 10 Operating Divisions of HHS

✓ Joint decision to execute The Federal Strategy for Connecting to the NHIN 12 Oct 2007

✓ Participated in NHIN Trial Implementations 2008

✓ Focus in 2009 is on NHIN Limited Productions/Pilots
<table>
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<tr>
<th>Agency</th>
<th>Needs</th>
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<tr>
<td>Department of Defense</td>
<td>Wounded Warrior Continuity of Care</td>
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<tr>
<td>Department of Veterans Affairs</td>
<td>Wounded Warrior Continuity of Care/ Medication Management/ Consumer Access to Clinical information</td>
</tr>
<tr>
<td>Social Security Administration</td>
<td>Disability Benefits Determination</td>
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<tr>
<td>Indian Health Service</td>
<td>Tribal Population Continuity of Care/ Wounded Warrior Continuity of Care</td>
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<tr>
<td>Centers for Disease Control</td>
<td>Population Health Monitoring – Biosurveillance</td>
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<tr>
<td>National Cancer Institute</td>
<td>Childhood Cancer Trials – Linking Research and Care</td>
</tr>
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What is CONNECT?

• A Federal Health Architecture (FHA) multi-agency initiative to address:
  – The emerging NHIN
  – Participate in the NHIN Trial Implementations 2008
  – Participate in NHIN Limited Productions/Pilots 2009

• A technology solution for secure interoperable exchange of health information
  – A Platform for Participation
  – A Platform for Innovation
What is CONNECT?

Technology Solution composed of:

– NHIN Gateway
  • Implements the NHIN defined Service Interface Specifications (currently there are 10)

– Enterprise Service Components (ESC)
  • Implements a set of adapter services to enable connecting edge systems includes SDK for adapter development (Platform for participation)
  • Implements a set of enterprise class service components to enable development of enterprise solutions for secure interoperable health information exchange (Platform for innovation)

– Universal Client
The CONNECT Solution enables federal agencies to CONNECT to the NHIN

- ESC Adapter SDK used to create edge system specific adapters to turn on information flows to participate in secure interoperable information exchanges (Platform for participation)

- ESC Enterprise Services enable agencies to integrate standards compliant enterprise class functionality into their current operational environments to address security, privacy and interoperability requirements (Platform for innovation)
Benefits to Citizens

Patient Focused Benefits

– Improve health quality
  • Provides appropriate information to help guide medical decisions at the time and place of care
  • Improves the coordination of care and information amongst hospitals, laboratories, physician offices and other entities through an effective infrastructure for the secure and authorized exchange of health care information
– Prevent medical errors
– Reduce health care costs
  • Reduces health care costs resulting from inefficiency, medical errors, inappropriate care, duplicative care, and incomplete information
– Increase administrative efficiencies
– Decrease paperwork
– Expand access to affordable care
Benefits to Citizens

• **Population Health Benefits – Improving public health activities**
  – Early detection of and rapid response to infectious disease outbreaks around the country
  – Improved tracking of chronic disease management – promotes prevention
  – Evaluation of health care based on value enabled by the collection of de-identified price and quality information that can be compare
  – Facilitates health and clinical research and health care quality

• **Promotes a more effective marketplace,**
  – Greater competition
  – Greater systems analysis
  – Increased consumer choice
  – Improved outcomes in Healthcare services and efforts to reduce health disparities
Benefits to Federal Agencies

The NHIN is a means for federal agencies to CONNECT with their private sector trading partners in a standard, secure interoperable manner obviating the need for multiple point to point agreements and interfaces.

- DURSA structures the legal trust fabric
- NHIN Service Interfaces define the technical trust fabric
- Decreases the cost of information exchange
Success will be dependent upon all constituents taking on an active role in modernization.
Challenges

- Complex eco-system with all of the different organizations involved with many competing interests
- Technical challenges will not be the deciding factor to whether or not we succeed
- Human aspects – again cultural changes not only with patients but with medical personnel
- Electronic Data Exchange Must not add any new barriers to entry, must not add any more work for the Physician, change of process or workflow and must be near zero cost
- Low Cost Point of Entry is essential for Adoption
- Interoperability with Open Standards Plug/Play; Browser based, no new footprint including Secure communication is essential
- Must give the Physician a positive ROI
  - There must be a demonstrable incentive of saving time and money to secure adoption
Questions?
## Future Vision: NHIN Services Roadmap

### NHIN INTERFACE SPECIFICATION

<table>
<thead>
<tr>
<th>FY08</th>
<th>FY09</th>
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<tr>
<td>Developed &amp; Implemented</td>
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<td>NHIE Service Registry</td>
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- Pseudonymization

- Six to Eight Additional Services

### ENTERPRISE SERVICE COMPONENTS

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<td>Document Registry/Repository</td>
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<td>Messaging Engine</td>
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<td>Master Patient Index</td>
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<td>Policy Engine</td>
<td></td>
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<tr>
<td>Consumer Preferences Profile Repository</td>
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<td>Subscription Manager</td>
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<td>Data Persistence Services</td>
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- Transformation Services

- Terminology Services

- POC Prototype

- Robust, Scalable & Enterprise