National Health Information Exchange and Interoperability Landscape
HIE & Interoperability Update

– Infrastructure and services to enable Health Information Exchange (HIE)
  • State HIE Program Grantees
– HIE capability and activity across key stakeholders
  • Office-based Physicians & Hospitals
    – Overall Trends and Patterns
    – By Type of Data and Transitions
  • Individuals
– Future Measurement of Interoperability
Data Sources

• Nationally representative survey data from 2013
  – Physicians:
    • National Electronic Health Record Survey
    • NCHS Workflow survey
  – Hospitals:
    • AHA Health IT Supplement
  – Individuals:
    • Consumer Survey of Attitudes Toward the Privacy and Security Aspects of Electronic Health Records and Health Information Exchange

• Self-reported data by State HIE program grantees
• Early Stage 2 Meaningful use attestation data
Infrastructure and services to enable HIE:
State HIE Program Grantees
Directed and Query-based exchange broadly available in 28 states and Washington, DC as of Q4 2013

Data Source: State HIE Dashboard, self-reported grantee data
Operational HIE Core Infrastructure Services grew across 50 states and Washington, DC

- **Q2 2012**
  - At least 1 operational Health Information Service Provider: 59%
  - At least 1 operational master patient index: 39%

- **Q4 2013**
  - At least 1 operational Health Information Service Provider: 90%
  - At least 1 operational master patient index: 73%

- **Q2 2012**
  - At least 1 operational provider directory: 31%

- **Q4 2013**
  - At least 1 operational provider authentication service: 69%
  - At least 1 operational provider directory: 67%

*N = 51; territories excluded.* Self-reported grantee data
HIE & Interoperability Update

HIE capability and activity across Office-based Physicians & Hospitals:

Overall Trends and Patterns
By Type of Data and Transitions
Prior to Stage 2 Meaningful Use, 4 in 10 physicians electronically exchange data--however outside exchange is limited.

Furukawa M. et al  Health Affairs, Aug, 2014
Electronic exchange of different types of data was limited prior to Stage 2, including during transitions.

In 2012, 5 in 10 received discharge summaries routinely; half of those received it electronically.

In 2013, about one-third of physicians exchange different types of data:
- Lab results: 36%
- Imaging reports: 34%
- Problem lists: 33%
- Medication lists: 34%
- Med allergy lists: 34%

ONC-NCHS analysis of NEHRS 2012-2013
Lower performance of EPs on summary of care measures compared to other Stage 2 Measures, as of May 2014

<table>
<thead>
<tr>
<th>Objective Score Reported at Attestation (numerator/denominator)</th>
<th>Exclusion Rate</th>
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<tbody>
<tr>
<td>&gt;=50</td>
<td>17%</td>
</tr>
<tr>
<td>&gt;=45</td>
<td>26%</td>
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<tr>
<td>&gt;=40</td>
<td>82%</td>
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<tr>
<td>&gt;=35</td>
<td>72%</td>
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<tr>
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<td>10%</td>
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<tr>
<td>&gt;=25</td>
<td>88%</td>
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<tr>
<td>&gt;=20</td>
<td>0%</td>
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<tr>
<td>&gt;=15</td>
<td>0%</td>
</tr>
<tr>
<td>&gt;=10</td>
<td>0%</td>
</tr>
<tr>
<td>&lt;10</td>
<td>0%</td>
</tr>
</tbody>
</table>

CPOE for medication orders
CPOE for laboratory orders
CPOE for radiology orders
Record demographics
Record vital signs
Record smoking status
Incorporate clinical lab results
Provide clinical summaries for patients
Medication reconciliation
e-prescribe
Patient-specific education resources
Patient reminders
Provide patients ability to view, download, transmit
Patients view, download, transmit
Provide summary of care record
Electronically provide summary of care record

Based on 474 eligible professionals attesting as of May 30, 2014

Figures reflect 474 Medicare eligible professionals who attested to Stage 2 as of May 31, 2014. Distributions are based on professionals that reported on the objective; exclusion rate is the percent of attesting professionals who claimed an exclusion for the objective.
Most physicians who electronically exchange report quality and efficiency benefits, though many also express concerns.

- Increases my practice’s liability due to other providers lacking adequate privacy/security safeguards: 25%
- Decreases my ability to separate sensitive health information from other data being exchanged: 38%
- Increases my practice’s vendor costs: 42%
- Requires multiple systems or portals: 64%
- Increases my practice’s efficiency: 80%
- Improves my practice’s quality of care: 89%

ONC analysis of 2013 Physician Workflow Survey
Hospital exchange with outside providers has grown significantly since 2008

Percent of non-federal acute care hospitals that electronically exchanged laboratory results, radiology reports, clinical care summaries, or medication lists with outside providers and hospitals: 2008-2013

Prior to Stage 2, 40-50% of hospitals had the capability to query and send secure messages

51% able to query patient health information electronically

41% able to send and receive secure messages containing patient health information to and from external sources

Prior to Stage 2, hospital exchange with outside providers varied by type of data

70% of hospitals reported they had the capability to send care summaries in a structured format (CCR, CDA, or CCD)

49% of hospitals reported they had the capability to send care summaries to an outside organization using a different EHR

Percent of non-federal acute care hospitals that electronically exchanged data with outside providers or hospitals, by data type: 2008-2013

<table>
<thead>
<tr>
<th>Data Type</th>
<th>2008</th>
<th>2013</th>
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</thead>
<tbody>
<tr>
<td>Laboratory Results</td>
<td>35</td>
<td>57</td>
</tr>
<tr>
<td>Radiology Reports</td>
<td>37</td>
<td>55</td>
</tr>
<tr>
<td>Clinical Care Summaries</td>
<td>25</td>
<td>42</td>
</tr>
<tr>
<td>Medication History</td>
<td>21</td>
<td>37</td>
</tr>
</tbody>
</table>


ONC. ‘U.S. Hospital Adoption of Computerized Capabilities to Meet Meaningful Use Stage 2 Objectives,' Health IT Quick-Stat, no. 23. April 2014

ONC analysis of AHA Health IT supplement, 2013.
Based on 8 eligible hospitals attesting as of May 30, 2014

Figures reflect 8 Medicare eligible hospitals who attested to Stage 2 as of May 31, 2014. Distributions are based on professionals that reported on the objective; no attesting hospitals claimed an exclusion for any of the objectives.
Almost half of hospitals send ED notifications—though primarily to affiliated PCPs

HIE & Interoperability Update

HIE capability and activity across Individuals
Individuals report experiencing information exchange gaps among providers and between providers and themselves

Within the past 12 months when receiving care for a medical problem, 1 in 3 individuals experienced at least one gap in health information:

- 18% Provide medical history again because provider hadn’t gotten records from another provider
- 18% Bring the results of medical exam/test result to a doctor
- 11% Wait longer than reasonable for the results of a test
- 6% Redo a test or procedure because no longer available
- 7% Had to provide medical history again because chart could not be found

More likely to be have:
- Chronic health conditions
- Seen at least 3 or different healthcare providers

Source: ONC Privacy Security Survey, 2013
Among the 28% of the U.S. adult population given access to their online medical record, almost half viewed their information.

Prior to Stage 2 Meaningful Use, Office-based Physicians and Hospitals reported limited VDT capabilities

Providing patients the ability to view online, download, or transmit information from their medical record

- Percent of physicians with computerized capability: 41.5%
- Percent of physicians routinely using computerized capability: 24.4%

<table>
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<tr>
<th>Patient Engagement Functionality</th>
<th>Percent of Hospitals with Capability</th>
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<tbody>
<tr>
<td></td>
<td>2012</td>
</tr>
<tr>
<td>Are patients able to do any of the following regarding their health/medical records?*</td>
<td></td>
</tr>
<tr>
<td>View information from their health/medical record online</td>
<td>24%</td>
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<tr>
<td>Download information from their health/medical record</td>
<td>14.3%</td>
</tr>
<tr>
<td>Electronically transmit care/referral summaries to a third party*</td>
<td>N/A</td>
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Interoperability & Future Measurement

- Measures to date have largely focused on HIE rather than interoperability
- We are aligning our measurement strategy to link directly to ONC’s strategic vision going forward
- This may include monitoring other types of information such as:
  - Volume of transactions
  - Adoption of standards
  - Availability of services that enable HIE
Overall, data show growth in exchange capability and activity, but also substantial room for improvement.

Infrastructure and services to support query-based and directed exchange have increased among the State HIE program grantees though impact on HIE activity likely to be uneven.

Data from 2013 and early 2014 indicate that exchange activity and capability varies across physicians, hospitals, and individuals, particularly during transitions.

- Physician exchange activity with outside providers is limited.
- Hospital exchange activity with outside providers has grown significantly since 2008.
- Exchange of data during transitions is limited across hospitals and physicians, and a significant number of individuals report experiencing gaps in information sharing.
- Physician and hospital VDT capabilities are limited; however, among individuals who obtain online access to their health information, early evidence indicates a sizable proportion are taking advantage of these capabilities.

Interoperability measurement will be a key focus going forward.
Questions?

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Additional updates
**Labs**

- 67% have capability to send structured lab results to EHR; among these, 80% actually sent structured lab results to an EHR.
- 58% of test results were sent to EHR using a structured format.

**Physicians**

- 47% have capability to incorporate structured lab results into EHR

**Hospitals**

- 93% incorporate structured lab results for more than 40 percent of patients admitted to inpatient or ED.

**Individuals**

- 17% of labs provided patients or their legal representatives electronic access to clinical test results.


ONC. 'U.S. Hospital Adoption of Computerized Capabilities to Meet Meaningful Use Stage 2 Objectives,' *Health IT Quick-Stat*, no. 23. April 2014

ONC. 'Percent of physicians with selected computerized capabilities related to Meaningful Use objectives, 2013,' *Health IT Quick-Stat*, no. 9. January 2014

HIE capabilities across the continuum

Long-Term Care Providers

NCHS plans to release results later this year for 2012 HIE capabilities of Residential Care Communities and Adult day services centers

Behavioral Healthcare Providers

25% able to exchange key clinical information with other providers

28% of BH provide summary of care record for transitions of care

Source: NCHS Long Term Care survey 2012; National Council Behavioral Health Survey 2012