Health Information Technology use in Iowa Radiology Facilities: A Study for Iowa e-Health

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A study for Iowa e-Health

Background

Iowa e-Health is a public and private collaboration that seeks to improve health care quality, safety and efficiency through the use of health information technology (HIT). This includes electronic health records (EHRs) to collect and store patient health information, and a statewide health information exchange (HIE) to share health records across the boundaries of individual care settings.

To better understand HIT use by a variety of health care provider types, Iowa e-Health, in collaboration with the University of Iowa Public Policy Center (UI PPC), conducted an assessment of HIT issues facing health care providers in Iowa.

The current effort included five health provider settings: 1) home health, 2) long-term care, 3) pharmacies, 4) laboratories, and 5) radiology centers. This Brief presents information about the Radiology Facility Assessment.

The assessments gathered information about a range of HIT topics including: 1) provider health IT capabilities and preparedness to participate in a statewide HIE; 2) preferences for types of high value clinical data exchange or HIE services; and 3) benefits and barriers to HIT adoption.

Methodology

An on-line survey assessment was used to evaluate the use of HIT in Iowa radiology facilities. The survey instrument was developed in collaboration with radiology content experts from the e-Health Assessment Subcommittee then pilot tested with several Iowa radiology facilities. A comprehensive list of Iowa radiology facilities was compiled based on lists from the IDAS and American College of Radiologists. On-line resources were then used to identify contact information for the radiology facilities and to obtain the email address for the person most knowledgeable about HIT in the facility.

The on-line survey process itself included: 1) An e-vite from IDPH Director Tom Newton requesting participation in the assessment survey (including a link to the website for completion of the survey), 2) A follow-up email from UI PPC requesting participation, 3) Telephone follow-up calls to non-respondents from the UI Social Science Research Center to identify that the email reached the most appropriate person, 4) Closing of the survey process after about 6 weeks. The data were then cleaned and the analyses began.

Participation Rates

Of the 125 radiology facilities identified in Iowa, 34 completed a usable survey, for a 27% participation rate. While the participating facilities were well distributed around the state, they are likely to be biased toward those more interested in the topic of HIT (not necessarily more likely to have electronic systems). Thus, we suggest the results from this assessment be used to evaluate potential trends rather than focusing on the exact percentages for any particular questions.
Storage of new reports by radiology facilities

Radiology facilities could store their reports in multiple ways: using a Radiology Information System (RIS), an Electronic Health Record (EHR), a Hospital Information System (HIS) and/or a Picture Archiving and Communication Systems (PACS). The system used for storing new reports is shown in Table 1. Some facilities used multiple systems.

Table 1. System used for storing new reports

<table>
<thead>
<tr>
<th>System</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIS</td>
<td>15</td>
<td>50%</td>
</tr>
<tr>
<td>HER</td>
<td>15</td>
<td>50%</td>
</tr>
<tr>
<td>HIS</td>
<td>23</td>
<td>77%</td>
</tr>
<tr>
<td>PACS</td>
<td>26</td>
<td>87%</td>
</tr>
</tbody>
</table>

Sending reports to providers by radiology facilities

The most common way for radiology facilities to send reports to providers is via fax. Less than half sent reports electronically (Table 2). 87% of those that did send them electronically used HL7.

Table 2. Format for sending radiology reports to providers

<table>
<thead>
<tr>
<th>Format</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper copy</td>
<td>17</td>
<td>50%</td>
</tr>
<tr>
<td>Fax</td>
<td>28</td>
<td>82%</td>
</tr>
<tr>
<td>Electronic report sent to provider to be downloaded into EHR, HIS or RIS</td>
<td>15</td>
<td>44%</td>
</tr>
<tr>
<td>Electronic report available through web-based portal</td>
<td>12</td>
<td>35%</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>—</td>
</tr>
</tbody>
</table>

Sending images to providers by radiology facilities

The most common way for radiology facilities to send images to providers is either through a CD/external media or a physician portal. Physicians were the most frequent provider to whom they were sending images (Table 3).

Table 3. Format for sending radiology images to providers

<table>
<thead>
<tr>
<th>Format</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard copy or print film/images</td>
<td>3</td>
<td>20%</td>
</tr>
<tr>
<td>CD or other external media</td>
<td>14</td>
<td>93%</td>
</tr>
<tr>
<td>Electronically inserted into EHR</td>
<td>1</td>
<td>7%</td>
</tr>
<tr>
<td>Physician portal</td>
<td>12</td>
<td>80%</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>—</td>
</tr>
</tbody>
</table>
Sending and receiving radiology orders electronically

Very few radiology facilities received orders electronically from providers.

A few more received reports/images from providers electronically:
- Labs
- Physicians
- Hospitals

Perceived benefits of electronic systems

Storing and sharing reports:
- Timely availability of test data
- Less staff time to process test orders
- Accuracy of test orders and results
- Facility efficiency

Storing and sharing images:
- Timely availability of test data
- Less staff time to process test orders
- Accuracy of test orders and results
- Facility efficiency

Most valuable information for sharing electronically:
- Radiology results
- Radiology images
- Radiology image orders
- Clinical history
- Allergies or contraindications
- Lab results
- Eligibility verification

Future uses of a HIT in radiology facilities

Among those without a RIS/EHR:
- 3 of the 7 without a RIS/EHR were planning to invest in one in the next two years
- The main concerns were:
  - Initial cost of installation
  - Ongoing operational cost

Among those with an EHR:
- 2/3rds were ‘very likely’ to invest in their system in next two years
  - Cost was the main concern
HIE and Iowa radiology facilities

Interest in participating in a Health Information Exchange (HIE)

- 88% were very interested (47%) or somewhat interested (41%) in participating in a HIE (Table 4)

Table 4. Radiology facilities' interest in participating in a HIE

<table>
<thead>
<tr>
<th>Interest Level</th>
<th>Frequency</th>
<th>Valid percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very interested</td>
<td>16</td>
<td>47%</td>
</tr>
<tr>
<td>Somewhat interested</td>
<td>14</td>
<td>41%</td>
</tr>
<tr>
<td>Not at all interested</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td>Don't know yet</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>100%</td>
</tr>
</tbody>
</table>

Major concerns with participating in a HIE

- Initial cost of product/installation
- Potential liability
- Client privacy

Summary

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The e-Health Report

The e-Health Report is the result of collaboration between the University of Iowa Public Policy Center, the Iowa Medicaid Enterprise, and the Iowa e-Health Executive Committee & Advisory Council.

For more information, contact:
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