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# Health Information Technology use in Iowa Medical Laboratories: A Study for Iowa e-Health

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# *Health Information Technology use in Iowa Medical Laboratories*

*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 Medical Laboratory Assessment.

The assessments were intended to gather information about a range of health IT 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 health IT adoption.

*Thirty-five percent of Iowa laboratories send some data to other providers electronically; 57% receive some data from other providers electronically*

## **Methodology**

An on-line survey assessment was used to evaluate the use of HIT in Iowa laboratories. The survey instrument was developed in collaboration with laboratory content experts from the e-Health Assessment Subcommittee and then pilot tested with several Iowa laboratories. A comprehensive list of Iowa laboratories was compiled based on a list provided on the CLIA website for Iowa and the Iowa Medicaid Enterprise. On-line resources were then used to identify contact information for the laboratories and to obtain the email address for the person most knowledgeable about HIT in the pharmacies.

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 791 laboratories identified in Iowa, 127 completed a usable survey, for a 16% participation rate. Three of the chain/group responses were completed by the headquarters representing all of their laboratories, so these responses were weighted. 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.



## Laboratories and EHRs

Whether laboratory orders were sent to the main reference lab was used as determinant of the use of EHRs by laboratories as suggested by the content experts on the e-Health Assessment Subcommittee. Electronic use is shown in Table 1. 60% used HL7 for submissions but 40% did not know the format. Most used CPT coding, few used SNOWMED or LOINC.

Table 1. Format for submitting orders to main reference lab

	Frequency	Percent
Paper requisitions	40	37%
Electronic order entry	64	60%
Other	3	3%
Total	107	100%

Similarly, receipt of information from the main reference lab was used to evaluate use of EHRs by Iowa laboratories (Table 2). Sixty percent used HL7; while, 35% did not know format, most used CPT coding.

Table 2. Format for receiving orders from main reference lab

	Frequency	Percent
Paper results received via onsite printer	29	26%
Paper results received via mail	3	3%
Electronic result receipt	57	51%
Other	22	20%
Total	111	100%

## Sharing of clinical information by Iowa laboratories

### 35% send some data to other providers electronically:

- Physicians (76%)
- Hospitals (55%)

### 57% received some data from other providers electronically:

- Other labs (73%)
- Physicians (40%)
- Hospitals (37%)

### Most valuable for sharing:

- Lab results
- Reporting communicable diseases
- Patient history

*Lab results, patient histories, and reports on communicable diseases were among the types of clinical information deemed most valuable for sharing by Iowa laboratories*

## Use of a LIS/LIMS for storing new data

Facility-based laboratories were most likely to store their new data electronically using an LIS/LIMS (Table 3). Labs in urban areas and larger labs were more likely to store data electronically.

Table 3. Storage of new laboratory data

Organizational structure	Non-electronic storage	Electronic storage
Facility-based	31 (38%)	51 (62%)
Independent/free standing	3 (33%)	6 (67%)
LTC facilities with small labs	1 (100%)	0 (0%)
Ambulance and Fire department	5 (83%)	1 (17%)
Public-county-community-university health clinic	3 (76%)	1 (25%)
Total	43 (42%)	59 (58%)

*Facility-based labs were most likely to store new data electronically using an LIS/LIMS; large and urban labs were more likely to store data electronically*

## Functions of EHRs for Iowa laboratories

### Most common uses:

- Check for out of range values
- Download results into an EHR
- Clinical lab notes

## Perceived benefits of EHRs in Iowa laboratories

### Most common potential benefits\*:

- Timely availability of clinical information
- Accuracy of clinical information
- Lab efficiency

*Two-thirds of Iowa laboratories without an EHR were not planning to invest in one in the next 2 years*

## Future uses of an LIS/LIMS in Iowa laboratories

### Among those without a LIS/LIMS

- 2/3rds were not planning to invest in an EHR in the next two years
- The main reasons were:
  - Initial cost of installation
  - Ongoing operational cost

### Among those with an EHR

- 3/4 were 'very likely' to invest in their system in next two years
  - Cost was the main concern

*Barriers to installing and EHR included cost of installation and ongoing operational cost*

## Health Information Exchange and Iowa laboratories

### Interest in participating in a Health Information Exchange (HIE)

- Two thirds were *very interested* (37%) or *somewhat interested* (26%) in participating in a HIE

Table 4. Laboratories interest in participating in a HIE

	Frequency	Percent
Very interested	45	37%
Somewhat interested	31	26%
Not at all interested	19	16%
Don't know yet	26	22%
Total	121	100%

### Major concerns with participating in a HIE

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

## Summary

About 60% of labs stored their new data electronically in a LIS/LIMS, however their use for sending/receiving orders or results varied. Currently, about one-third of labs submitted orders and about half received orders electronically. They were most interested in having the ability to share lab results, communicable diseases and patient histories electronically with other labs, physicians and hospitals. Improved efficiency and accuracy were deemed as the benefits of electronic systems. Costs (initial and operational) were the biggest concerns among both those with and without an LIS/LIMS, with  $\frac{3}{4}$  of those with an LIS/LIMS likely to invest in their system in the near future. The vast majority of the radiology facilities had interest in participating in a HIE with potential costs, liabilities and client privacy the greatest concerns if they were to move in this direction.

## Iowa e-Health

Iowa e-Health is a public/private collaboration designed to improve health care quality and efficiency through the use of HIT.

For more information, contact:

Iowa e-Health

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Iowa Department of Public Health, Office of Health IT

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