

# Office for Oregon Health Policy and Research



## ***Public Health and Health Information Exchange: A Survey of Oregon's Local Health Departments***

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September 2010

Prepared for  
Health Information Technology Oversight Council of Oregon (HITOC)

Report available online at:  
<http://www.oregon.gov/OHPPR/HITOC/index.shtml>

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## **Introduction**

The secure exchange of health information among health care providers, payers, laboratories, government agencies and other parties is central to goals of improving the health of Oregonians and making its health care system more efficient and high-quality. The state's public health system, with its core of local health departments, is an important player in health information exchange (HIE). Public health agencies depend on a robust HIE network for such essential tasks as tracking disease outbreaks and childhood immunizations, along with providing essential health care services to their communities.

Efforts to expand HIE in Oregon have been accelerated with federal funding received through the State Health Information Exchange Cooperative Agreement Program, authorized by the HITECH Act, part of federal stimulus legislation approved by Congress in early 2009. The goals of the program are to facilitate and expand the secure, electronic movement and use of health information among organizations according to nationally recognized standards, with the long-term goals of nationwide health information exchange and interoperability.

Oregon's Health Information Technology Oversight Council (HITOC) completed its strategic and operational Plans to promote adoption of health IT and advance information sharing, and submitted them to the federal government for approval. Part of the state's planning process during the development of these plans was to collect information from local public health departments (LHDs) to better understand agency information system capacity and needs. .

Members of HITOC, the Oregon Public Health Division and the Conference of Local Health Officials (CLHO), worked together to develop a survey of all 34 LHDs in Oregon. Information generated from the survey will assist planning to improve adoption and use of health IT and achieve exchange of clinical and public health-related information among Oregon's 34 LHDs.

### ***Background***

Many local health departments provide primary, preventive and behavioral health services. Adoption and use of health IT is increasingly considered a vital tool to improve care coordination and delivery, enhance organizational capacity around support of key public health functions, and improve efficiency and effectiveness with mandated public health activities and practices. In general, it is widely recognized that "effective public health practice requires timely, accurate, and authoritative information from a wide variety of sources."<sup>1</sup> This goal calls for widespread adoption and use of information systems and technologies within Oregon's public health system, at both the state and local level. The reality is that the existing state of the public health information infrastructure is inadequate and requires significant investment to fully meet Oregon's public health goals.

A survey was designed and administered to find out more about the state of information system capabilities among the local public health departments and barriers they may face. The survey was a collaboration among HITOC, the Oregon Public Health Division on CLHO. This type of coordinated effort can reduce the siloed approach that can occur when agencies and organizations pursue their individual goals. Continued collaboration among these and other public health parties in Oregon could lead to a more sophisticated, evidence-based use of health information to improve the health of Oregonians.

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<sup>1</sup> Yasnoff, W., O'Carroll, P., Koo, D., Linkins, R., & Kilbourne, E. (2000). Public health informatics: Improving and transforming public health in the information age. *Journal of Public Health Management & Practice*, 6(6), p. 67.

### ***Benefit of IT to Community Health***

Information generated by local health departments can be a powerful tool for improving health. It can highlight both problems and opportunities for improvement within a community. This information can also help communities decide what policy initiatives to support or change, plan and allocate limited resources and assess ways to meet specific community needs.

Lack of coordination between local and state public health systems is common throughout the country. This happens when local health departments develop separate information systems, resulting, for instance, in multiple disease surveillance systems in a single state or region. There has been little information available about the state of information system adoption and use among Oregon's health departments, and about their abilities to exchange health information electronically. The survey was designed to learn more about these issues and find out what kinds of problems they encounter with their current information systems and what resources could help.

### ***Survey Goals***

The survey consisted of three sections, each one designed to assess various goals:

- Assess LHDs' existing capacity around core public health functions and services: (1) ongoing public health assessment including monitoring non-infectious and/or chronic diseases, public health surveillance, community research and evaluation activities; (2) support of various communicable and infectious disease protection activities at the local level; (3) capacity around public health laboratory functionality; and (4) provision of primary and preventive services.
- Determine LHDs' ability to electronically send and receive information with state, local, and community partners. This includes use of various IT applications, adoption and use of electronic health records and or practice management software, broadband internet connectivity, and participation with local or regional health information exchange initiatives (e.g. local/regional health information organizations, or HIOs).
- Collect information from LHDs about existing and future use of information technology including challenges, plans to address existing challenges, and identifying their key priorities in improving information management capacity.

The creation of the survey was a joint effort among the Oregon Public Health Division, the CLHO, and members of the HITOC Planning Team. Two previous surveys, one drafted by the State Public Health Division and the other drafted by the CLHO, were integrated into a single survey. The integrated survey was then modified and expanded upon. The purpose of expanding upon the survey was to collect information that would also help inform HITOC's ongoing planning efforts around fostering HIE in Oregon.

The survey also served as an opportunity for HITOC to engage in a collaborative initiative with both the Oregon Public Health Division and the CLHO, reducing duplication and resulting in a more productive and meaningful survey for each partner. It is important to recognize the sheer number of surveys administered by various public health agencies, so the single instrument reduced the potential burden on respondents.

### ***Survey Methods***

The survey was administered electronically to all 34 LHDs. Although there are 36 counties in Oregon, three counties operate as a single LHD, and therefore Oregon has a total of 34 individual LHDs. The three counties that operate as a single LHD are: Wasco, Sherman, and Gilliam. An invitation was emailed to all directors and administrators. The invitation included a brief description of the survey, including its purpose and objectives. At the end of the email, a URL was provided for respondents to access the online survey. We requested that all LHDs submit one survey per department. The survey was fielded over a two-week period in April 2010. A series of emails were sent during the two-week period to remind individuals about the importance and value of their participation.

### ***Survey Returns***

At the end of the two-week period, 32 of 34 LHDs completed and submitted the online survey. The completion rate was 94%. All survey respondents were asked to provide their name and position or title.

### ***Summary of position title answering survey***

The majority of survey respondents identified themselves as either “Director” (n =10) or “Administrator” (n = 10). Other titles included: manager and/or program manager (n=3), supervising MD (n=1), business services director (n=1), deputy director, (n=1), supervisor (n=1), public health informatics manager (n=1), senior IS analyst (n=1), programmer/analyst (n=1), program coordinator (n=1), and administrative assistant (n=1).

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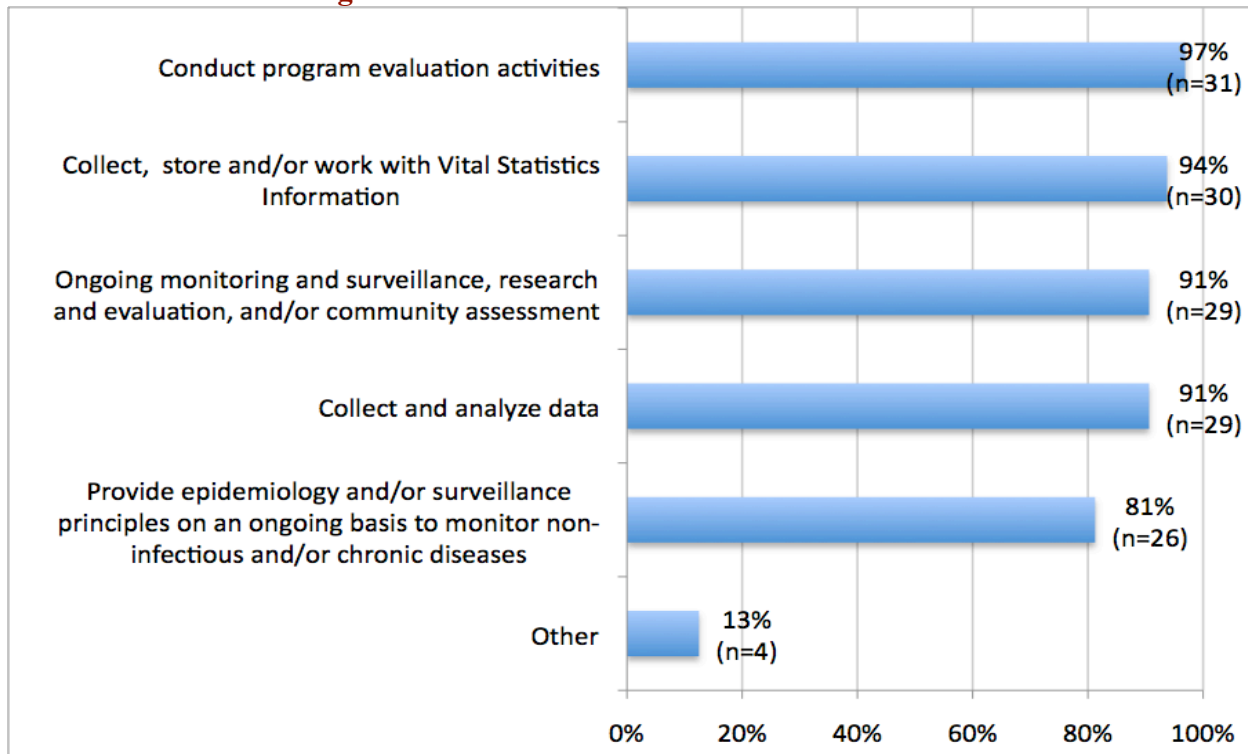
## Section One

The first section of the survey asked local health departments about their current capacity for four specific public health functions and services: capacity to conduct public health assessments, support of communicable and infectious disease protections activities, public health laboratory services, and provision of primary and preventive services. These are considered core public health functions of local health departments.

### *Public Health Assessment*

The survey asked whether individual health departments currently support or perform an array of public health activities. Figure 1.0 identifies the list of five essential public health activities or functions identified in the survey (respondents checked all activities they provided).

**Figure 1.0: Public Health Assessment Activities**

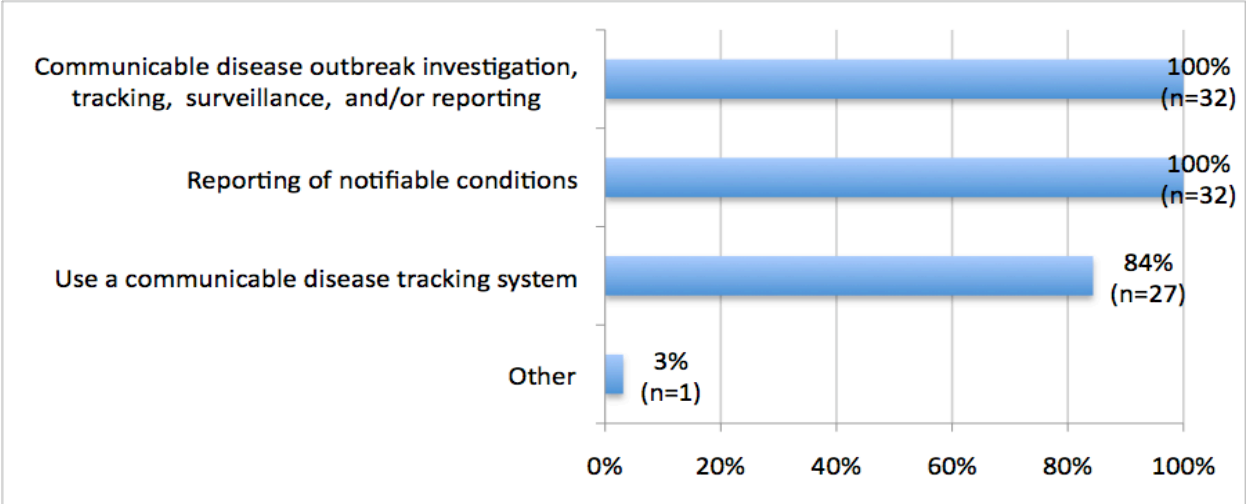


Survey respondents that replied with “Other” indicated the following responses: compare data to county performance measures; manage and improve program and service performance and quality; and syndromic surveillance.

**Communicable and Infectious Disease Protections**

Local health departments are critical partners in efforts to identify, track and report on rates of communicable and infections diseases within a community or region. Thus, is it informative to know whether LHDs currently support and perform a range of activities to reduce rates of communicable and infectious disease (see figure 2.0).

**Figure 2.0: Communicable and Infectious Disease Activities**

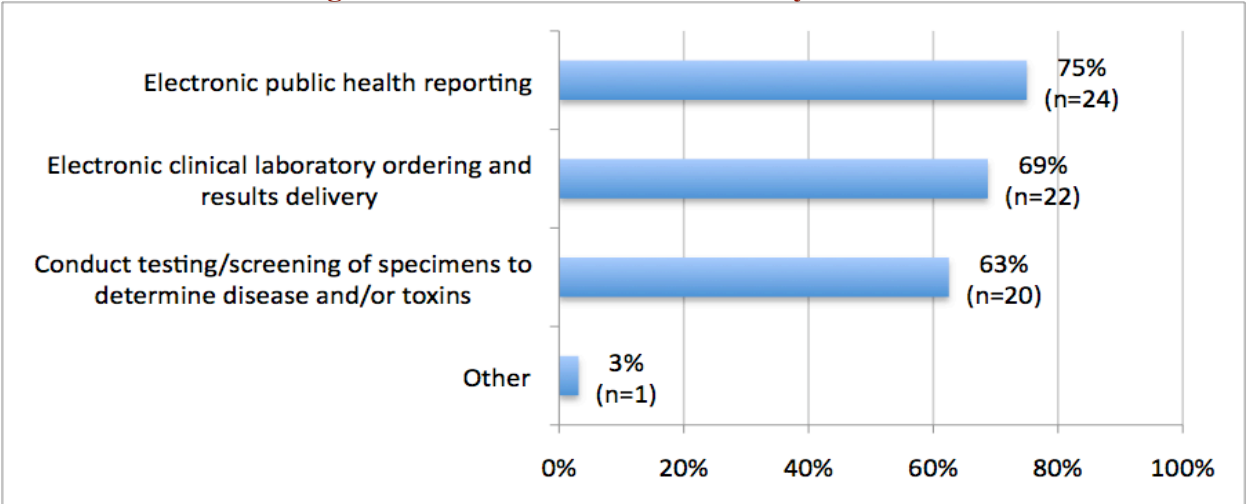


Only one LHD responded with “Other.” This LHD described the use of IT to manage productivity and program quality improvement of a communicable disease case management program, as well as the use of data to support health promotion and targeted messaging across the community, schools and other targeted populations.

**Public Health Laboratory**

Other core activities often provided by LHDs are public health reporting and laboratory services. LHDs were asked whether they currently support or perform three essential laboratory activities frequently considered key components of public health reporting.

**Figure 3.0: Public Health Laboratory Functions**

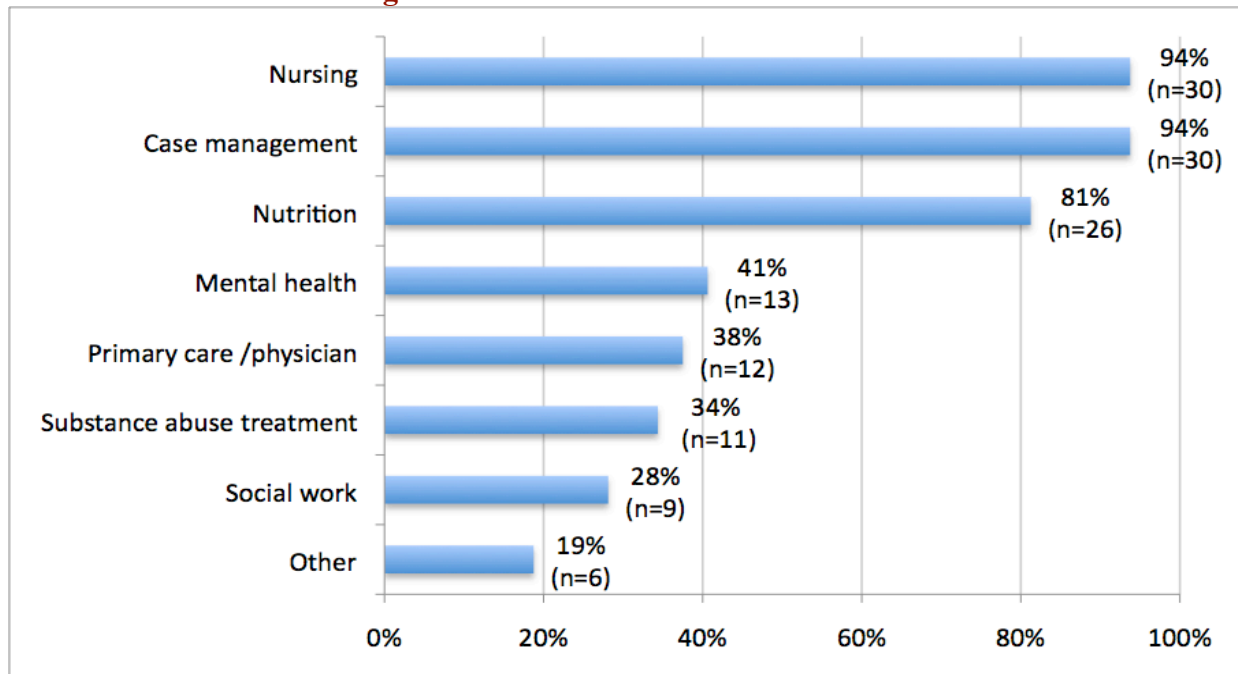


Only one LHD responded with “Other,” indicating urinary analysis results are available electronically as well as sending preliminary positives to the OSPHL for confirmation and electronic reporting.

### ***Provision of Health Services***

The final question in this section asked whether LHDs provide one or more of the following primary and/or preventive services. Many LHDs in Oregon provide a range of critical primary and preventive services as part of their broader missions to improve population health within their communities.

**Figure 4.0: Provision of Health Services**



Six LHDs identified “Other” as a response. Responses included immunizations, STI screening and treatment, HIV testing, TB treatment, refugee screening, home visit/community nursing, school based health centers, school nursing, dental services, developmental disabilities services, corrections health, pharmacy, prenatal care, and family planning.



## **Section Two**

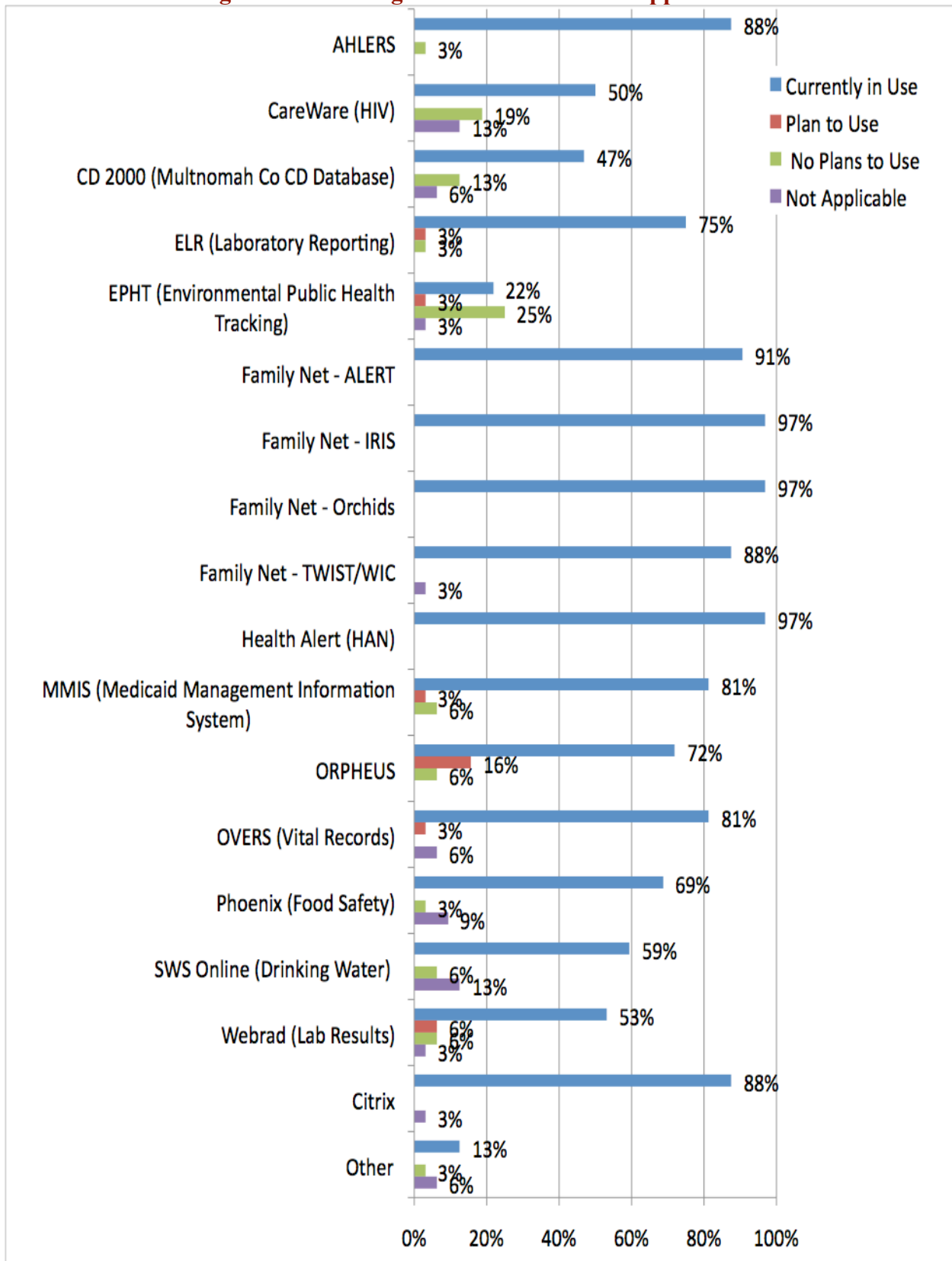
The exchange of health information supports public health initiatives such as community interventions, population health activities, disease surveillance, investigation of infectious disease outbreaks, and improving maternal and child health. In Oregon, numerous IT systems and software applications have been designed and implemented over the years. These separate systems often operate within individual silos, lack integration and interoperability, require duplicate data entry, and do not allow for efficient aggregation or retrieval of meaningful and useful public health data. Automated electronic exchange of data would significantly improve LHDs capacity to prepare for and respond to certain public health emergencies, diseases, and potential epidemics.

Therefore, HITOC was interested in developing a better understanding of LHDs' existing capacity to exchange data with community health providers, local hospitals, laboratories, and various public and state agencies.

### ***Existing Use of IT and Software Applications***

As previously described, many LHDs maintain multiple software applications to support a range of public health activities. LHDs were asked to indicate whether their department was using various IT applications identified by the Oregon Public Health Division (refer to figure 5.0 for complete list). LHDs were also asked to indicate whether they currently support the specific application, had plans to use, no plans to use, or if the IT application was not applicable. The majority of applications listed below were reported as being currently in use and/or supported by LHDs, often in partnership with the Oregon Public Health Division (n=32). Please see figure 5.0 on page 9.

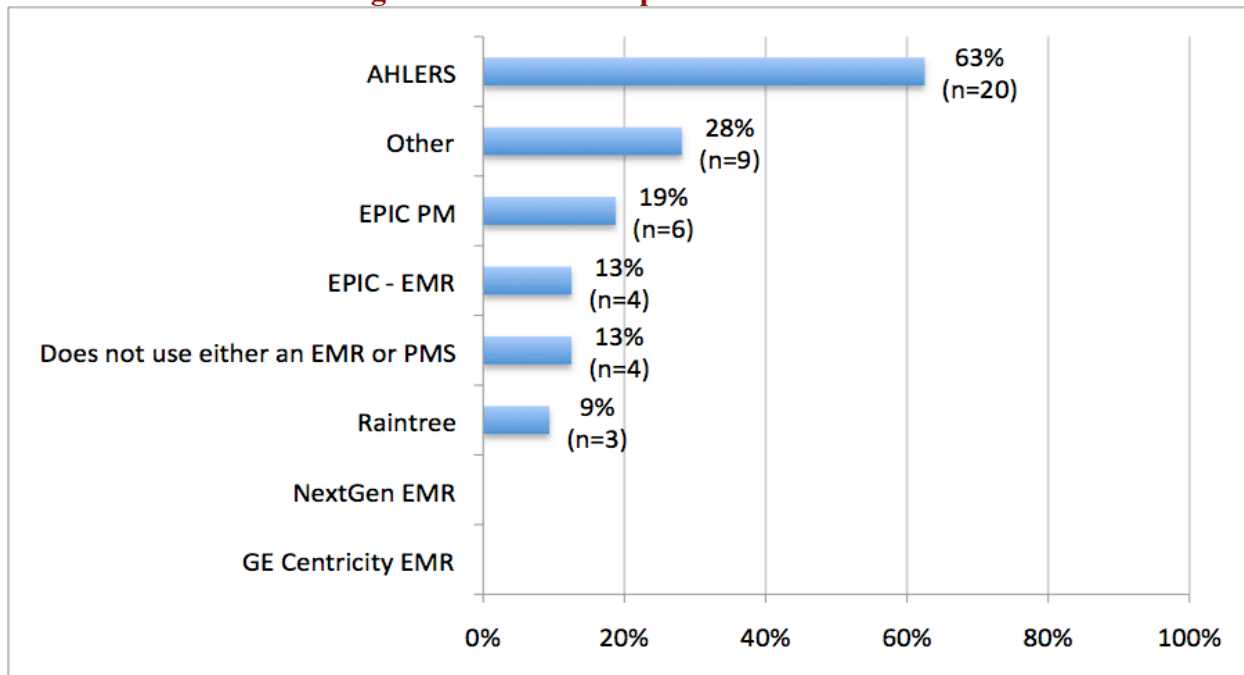
**Figure 5.0: Existing or Planned Use of IT Applications**



### ***Use of EMR and/or PM***

Since a number of LHDs in Oregon provide primary and preventive health services directly, it is important to find out whether they use an Electronic Medical Record (EMR) and/or Practice Management software (PM). There are a limited number of EMRs and PM vendors with systems in use among LHDs within Oregon. Also, Oregon has a relatively high adoption rate of EMRs and PMs, with only 13% of LHDs indicating that they are not using either an EMR or PM system. Nonetheless, a strong push for the adoption and meaningful use of EMRs among health departments will advance electronic exchange of health information, both for clinical and public health purposes. Additional information on this issue is described in the following section.

**Figure 6.0: EMR Adoption and Use of PM**

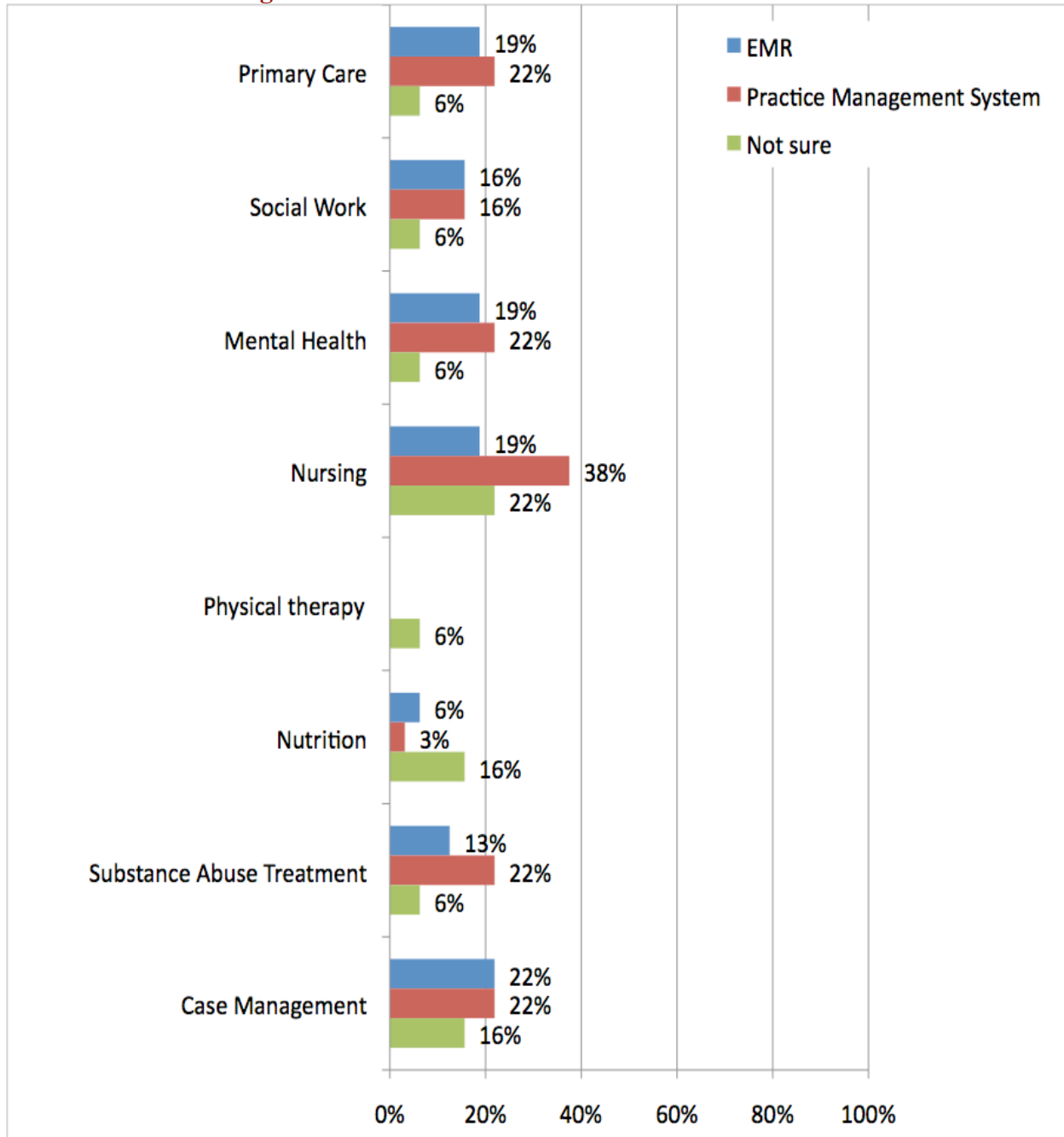


Nine respondents indicated “Other.” Responses included: Accuterm, Unicare – Profiler, Medical Manager for PM only, CareWare, InSight, and an internally created system.

### *Provision of Services & Use of EMR/PM*

An additional question was asked regarding whether any of the services and/or programs provided by LHDs are supported by an EMR, PM, or both. Although responses indicate a number of services being supported by use of an EMR, PM, or both, such reported use was consistently less than 25-30%.

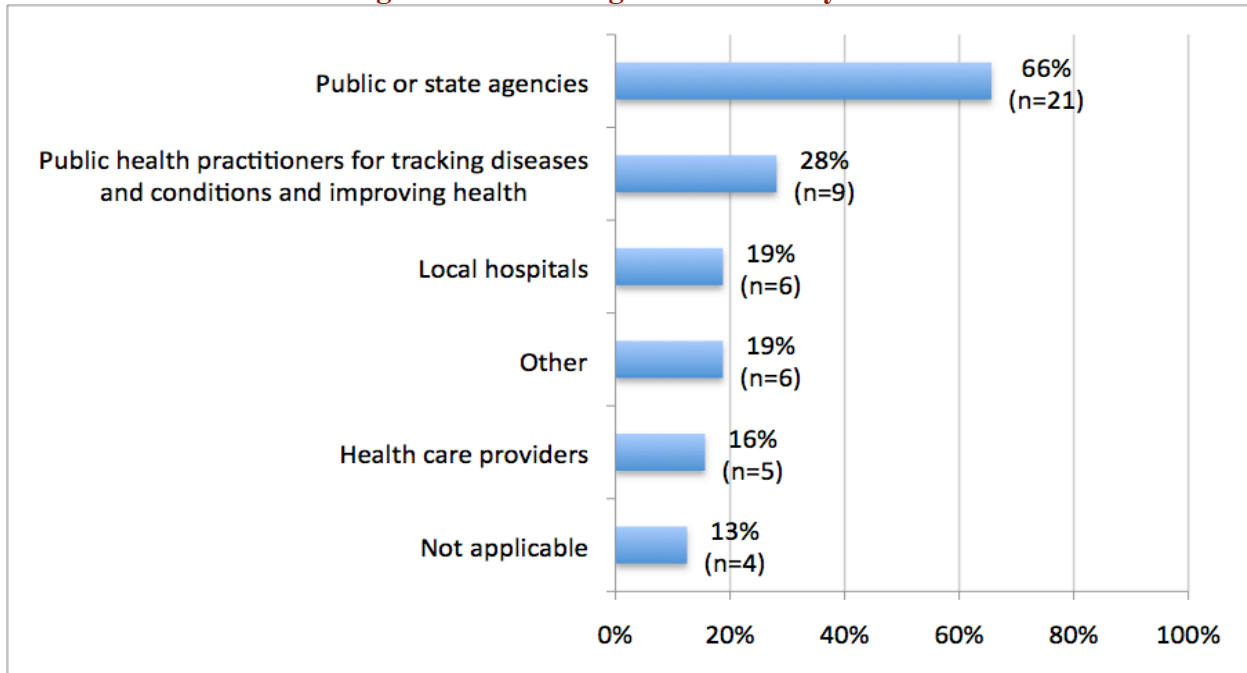
**Figure 7.0: Provision of Services & Use of EMR/PM**



### *Electronic Data Exchange and Connectivity*

It is important that public health departments be able to exchange data with a variety of partners in the community to support comprehensive policy and program development initiatives. LHDs were asked therefore whether their existing IT infrastructure allows exchange of laboratory data electronically with a number of external agencies or organizations (see figure 8.0).

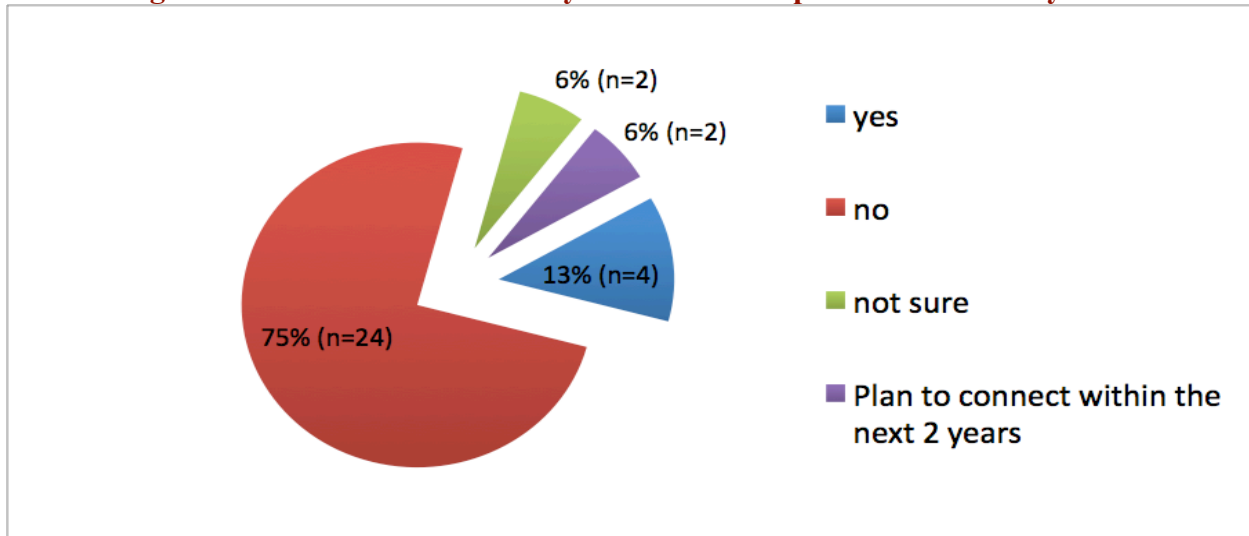
**Figure 8.0: Exchange of Laboratory Data**



Six LHDs responded with “Other.” These responses included: exchange with Federally Qualified Health Center (FQHC) primary providers, select commercial labs, and Safetynet West, exploring interface with Peace Health Theradoc and Carecast systems.

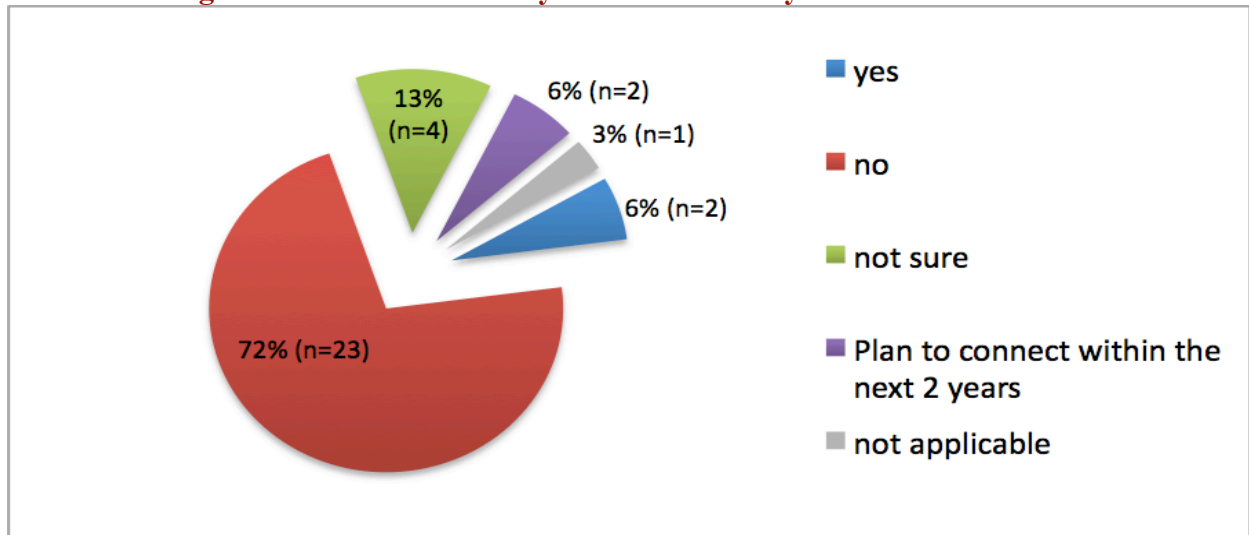
A targeted follow-up question sought to learn whether LHDs' existing surveillance information system(s) connect to local hospitals or clinical information systems. The majority of respondents reported that they were not connected (refer to figure 9.0).

**Figure 9.0: External Connectivity with Local Hospitals or Clinical Systems**



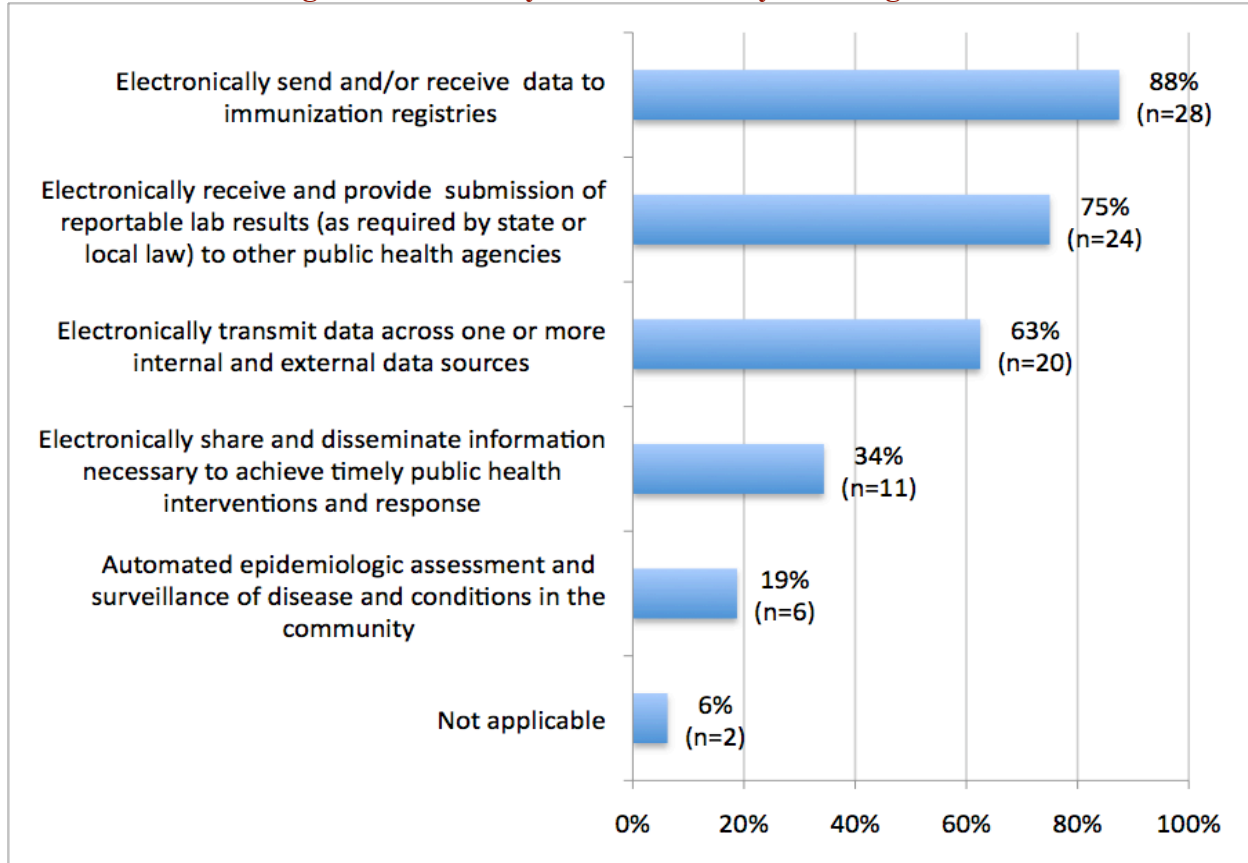
Another follow-up question asked about connections to EMRs operated by local hospitals or providers. The majority of LHDs reported that their surveillance information systems do not currently connect to EMRs operated by provider organizations external to the health department (refer to figure 10.0).

**Figure 10.0: Surveillance System Connectivity with External EMRs**



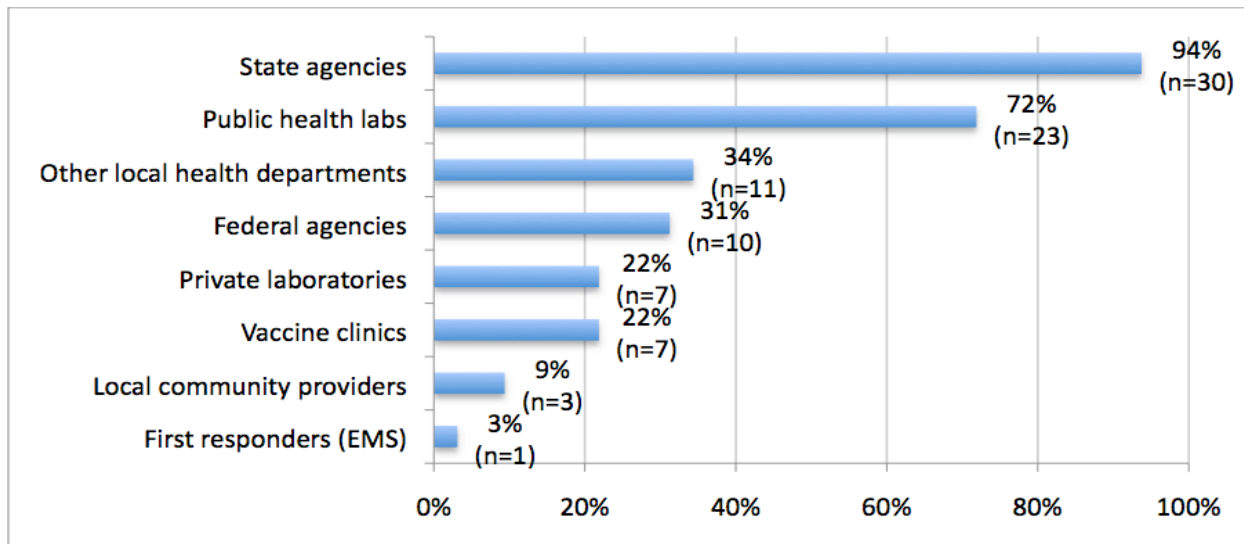
The next question asked more generally whether LHDs' existing IT infrastructure allows for electronic exchange of data. The majority of LHDs reported: having the capability to electronically transmit data internally as well as externally, ability to send and receive data to immunization registries, and being able to receive and/or provide reportable lab results to other public health agencies.

**Figure 11.0: Ability to Electronically Exchange Data**



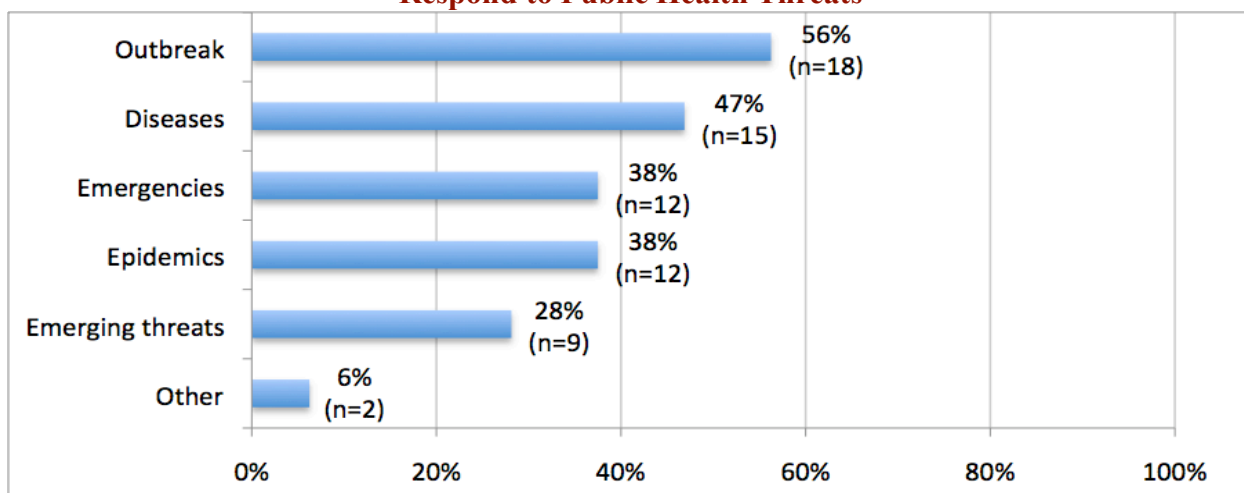
Because of the importance of sharing information with other agencies, LHDs were asked whether they electronically exchange information with eight different key entities. Not surprisingly, the two top exchange partners were state agencies and public health labs. As indicated in prior survey responses, LHDs have limited capacity to electronically exchange information with local providers, private laboratories, or with emergency medical service providers (EMS).

**Figure 12.0: Ability to Electronically Exchange Information with External Entities**



Biosurveillance, or the detection of disease outbreaks, is a main goal of all public health agencies. Currently, many health departments are not adequately equipped to fully detect or respond to public health threats. LHDs were asked if their departments' existing IT infrastructure allows for electronic transformation of data into "meaningful information" to prepare for and respond to the five essential public health emergencies. Responses indicate that Oregon's LHDs' existing capacity is suboptimal (see figure 13.0).

**Figure 13.0: Electronic Data Exchange and Ability to Respond to Public Health Threats**

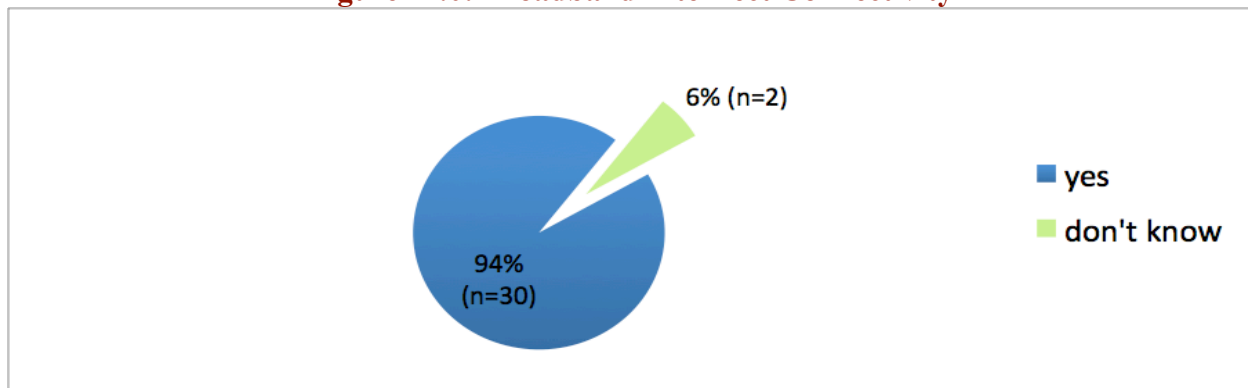


Two LHDs provided "Other" responses: sit stat reports regarding H1N1 and daily transmission of data with CD2000.



Broadband Internet connectivity is a key element in exchange capacity. When asked whether LHDs have broadband connectivity, an overwhelming majority (94%) reported having high speed Internet.

**Figure 14.0: Broadband Internet Connectivity**



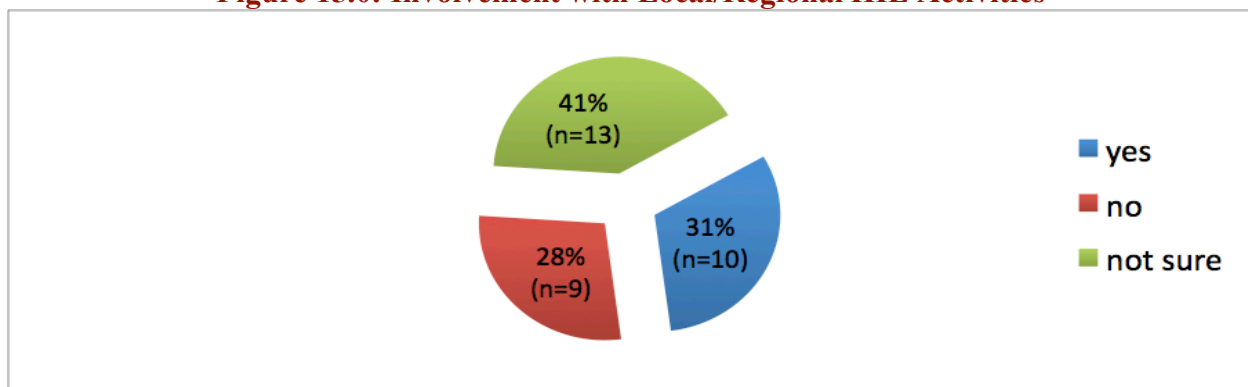
***Involvement with Local/Regional Health Information Exchange(s)***

The final question in this section explored whether LHDs are actively involved with any local or regional health information exchange (HIE) planning activities or operations. As of March 2010, there were a number of local and regional health information exchange organizations in various stages of development. The goal of these organizations is to facilitate the bi-directional flow of clinical, administrative, and/or public health data between and among such parties as providers, hospitals, laboratories and pharmacies.

Surprisingly one-third of LHDs (n=11) indicated being actively involved in a local or regional HIO planning activity or operation (see Figure 15.0). A number of LHDs indicated uncertainty about whether they were actively involved with an HIO. .

LHDs that responded “yes” were asked to briefly explain their involvement with an HIE initiative. Among the responses provided, four LHDs appear to be involved in initial discussions, two described being part of Beacon grant proposals, and six appear to be actively involved in some form of HIE. Exchange initiatives referenced include Coalition of Local Health Officials, Gorge Health Connect, Central Oregon HIE, OCHIN Collaborative, and Mid Valley Behavioral Network.

**Figure 15.0: Involvement with Local/Regional HIE Activities**



### Section Three

The introduction of new information systems, particularly in health care settings, is not always fully successful; with problems attributed both to the technology itself and to how it changes the way people do their jobs. Because adoption of HIT applications can raise a number of challenges, the third and final section of the survey focused on the types of problems encountered by local health departments. It is important to know both what systems are in use in Oregon’s 34 LHDs and how well they are working.

#### *Existing Information Systems*

##### *What’s Working Well*

The first question in this section asked LHDs to identify what systems are working well for their health departments. Twenty-five LHDs responded to this question by listing the programs that work well for them. One health department’s response, indicative of multiple responses submitted was: “All the systems we use are satisfactory for the outcomes they were intended but are duplicative, inflexible and require onerous amounts of input.” The frequency of individual systems mentioned among the 25 LHDs that responded is listed in Table 1.0. It should be mentioned that respondents were asked to individually list each system, which might have skewed the results by not having listed all the systems individually.

**Table 1.0: Systems Identified as Working Well**

Program	Number of Mentions	Program	Number of Mentions
Ahlers	6	BCC	1
TWIST	6	CareWare	1
IRIS	5	CD 2000	1
ORPHEUS	3*	EPIC EMR	1
Citrix	3	EPIC PM	1
Email and/or Microsoft outlook	3	MMIS	1
ORCHIDS	3	OVERS	1
Alert	2	PH lab	1
e-Sentinel	2	Phoenix	1
Family Net	2	Unicare’s Profiler	1
FP Raintree	2	Basic service delivery support and related billing	1
HAN	2	Enrollment reporting to State	1
WIC	2	Vital stats exchange with state	1
1 <sup>st</sup> Star Environmental Health System	1	Other stat supplied programs	1

\* Two other health departments reported recent implementation of ORPHEUS.

*Challenges with Existing Information Systems*

LHDs were asked to describe what their health department was not getting from existing information systems. Twenty-three LHDs responded to this question (n=23). Responses were reviewed and a set of themes emerged: lack of interoperability and/or integration, duplicate data entry, issues with data reporting and access to data, need for EMR/PM software system, and concerns around secure information exchange. Individual responses provided below were grouped by theme, but edited for clarity and to ensure accurate representation.

**Table 2.0: Identified Challenges**

<b>Interoperability, Integration, and Related Issues</b>
• Lack of interoperability among multiple systems.
• Lack of connection or ability to exchange data.
• Few data systems communicate with one another and virtually none have ability to exchange info with EMRs.
• Concerned about purchasing a program and connectivity with other programs being an issue.
• The biggest challenge we have with our EHR and other systems is interoperability.
• Existing systems do not communicate to give a more complete picture of the client, need, services, etc.
• No ability to meaningfully share data with any of our partners in shared work.
• Data integration and data warehousing across multiple reporting disease systems.
• Procedural/rule issues make it difficult to combine data from multiple sources.
• Lack of patient unique identifier across multiple independent providers.
• Lack of multi-jurisdictional patient release of information (ROI) mechanism to permit sharing when data exists.
• Technical barriers to using data across multiple external providers/partners in enterprise/vendor systems.
• Data systems manage information using different platforms, languages and formats.
• Lack of standards for the way information will be collected; the same information is entered in different ways in each program.
• Too many systems, which are not integrated together.

<b>Data Retrieval and Accessibility</b>
• The ability to create and generate individualized reports.
• We put data in but don't get reports out specific for our county (especially for MCH).
• Accurate, timely, and easily accessible reports that include all data we need.
• Inability to retrieve data submitted on clients to the State for a variety of programs where we would like to be able to do ad hoc reporting, especially in a more timely manner.
• Providing tons of information into systems, but no benefit of retrievable analysis of the data submitted, except for OCHIN and elements of Phoenix.
• Lack of a data management system that lends itself to surveillance, epidemiology, or monitoring, by geography or type of "incident."
• Data in a useable format (e.g. Excel) rather than printed, outdated data sent through the mail.
• Not having the capacity to generate reports needed for program evaluation and various data summaries requested by commissioners and others.
• Not being able to access county data for grant applications without going through the Center for Health Stats.
• Data warehouse facilities that local health departments can query against in real time.
• Maintaining shadow systems for state reporting systems to double record data to assure access and usability.
• De-duplicated data across programs and even within programs.

<b>Need for EMR/EHR/PM or Other Software</b>
• Working to get an electronic health record for home visiting.
• Not having a robust practice management program.
• EHR only partially in place with current Raintree version. Next version is full EHR capability in the next 18 to 24 months.
• Not having any type of EHR system at this time other than AHLERS (which we also use for billing purposes).

<b>Security</b>
• Concerns about sharing information securely across program areas.
• Secure communications between staff, patients, outside agencies.

LHDs were asked to identify the three biggest challenges their health departments face in using information systems. Twenty-nine LHDs responded to this question (n=29). The range of responses was broad. The key themes that emerged from the responses were: (1) no interoperability between multiple programs and/or data exchange with other systems; (2) specific State/local problems; (3) duplicate data entry; (4) challenges in reporting; (5) costs associated with implementation and maintenance; (6) workforce training, staff and/or IT support; and (7) IT reliability. An additional category of “other” was created. Individual responses provided below were grouped by theme and edited for clarity.

**Table 3.0: Challenges in Using Information Systems**

No Interoperability b/w Multiple Programs and/or Data Exchange with Other Systems
• Multiple independent programs - data management challenges.
• Tracking, maintenance and upkeep of multiple data systems operating on multiple platforms, reporting data in varied formats to multiple agencies.
• Collecting, storing, and analyzing information across programs and data systems.
• Limited connectivity to other local health care providers/systems.
• Sharing information with hospitals, emergency providers and other partners.
• Ability to generate reports and share for community assessment purposes.
• Data exchange / interfaces.
• Many programs to use that are not well-coordinated.
• Too many systems and too many logins.
• Each county health department is on its own to develop its own Information Management System, so we're all islands of only our public health data from which we generally can't export or report meaningful information such as trends.
• Inability to get client data for all services onto one system.
• Data governance across multiple programs.
• Coordinating information/merging data from multiple sources/platforms.
• Data standards such as LOINC that have not been fully implemented.
• Access to and use of community/partner based data for health records, case management and coordination and reporting systems.
• Increasing complexity of data and resources to make interfaces work.
Specific State/Local Problems
• Lack of interoperability between State systems.
• Creation of new state systems often conflicts with local operations; resulting in dual data entry.
• Each public health program has an expectation that we enter data into their software; software however developed without consideration of local data needs.
• Multiple State systems, for reporting, grant info, analysis, etc.
• Occasionally State can get the data for us, but it's a very cumbersome process.
Duplicate Data Entry
• Too much entry duplication and room for user error.
• Extensive duplicate data entry across various systems.
• State data collection systems not designed to provide the information needed for local programs, so we create our own data collection system resulting in duplication of data entry.
• Duplication of data entry; often the same information.

<b>Reporting</b>
• Ability to generate reports of data across data systems and share for community assessment purposes.
• Extracting data presents an ongoing challenge.
• Reporting data in varied formats to multiple agencies.
• Lack of integrated data analysis and reporting capacity.
• Timely reporting of actionable disease information during a quickly developing or large-scale event from all systems especially outpatient.
• Unreliable data for reporting purposes.

<b>Cost</b>
• Cost of supporting multiple independent programs and replacing old equipment.
• Inadequate support for costs of workforce, training & equipment.
• Affordability to upgrade existing and/or purchase new systems.
• The cost if we have to purchase any new system e.g. an upgrade to Phoenix.
• Lack of funding to purchase new systems.
• Financial burden of implementing EHR and interoperability interfaces.

<b>Workforce: Training Staff, IT Support and Computer Literacy</b>
• Training of staff in terms of adequate computer literacy and skills.
• Lack of IT staff and specialized IT support services.
• Inadequate support of all programs by County IT.
• Knowledge and training difficult to maintain with limited staff and use of multiple required systems.
• Educating employees on how to use electronic information systems.

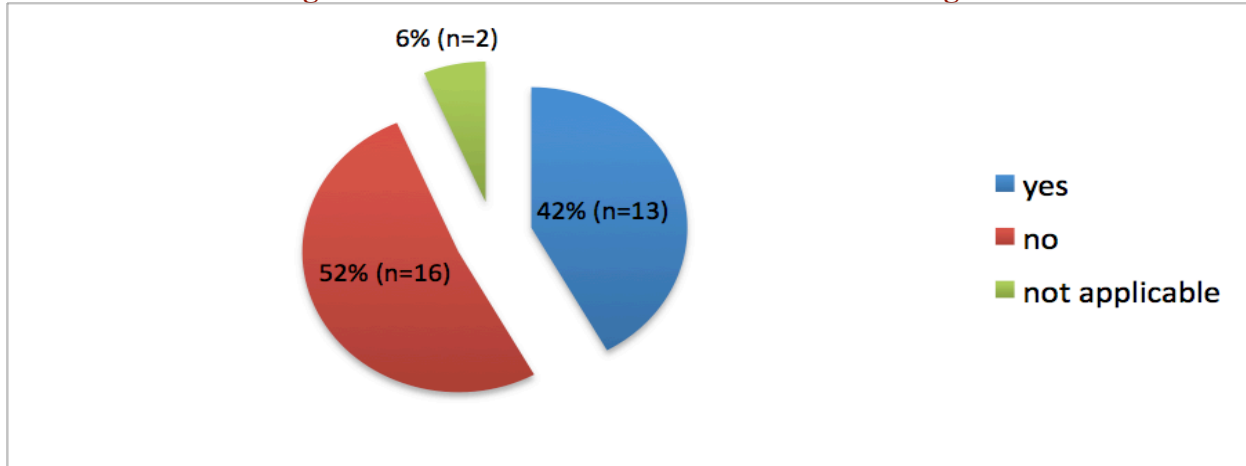
<b>Reliability</b>
• Reliability of multiple IT systems (Family Net is frequently "down").
• Unreliable email system.
• Unreliable MMIS system for billing.
• Inability to provide services when computers are down.

<b>“Other” Category</b>
• Not having software
• Not having practice management or EMR.
• No EMR for home visits.
• Outdated applications/tools that need to be replaced with flexible technology and that will support business processes.
• Need Electronic Medical Records.

*Plans to Address Identified Challenges*

In the previous question, 29 LHDs responded to the question about challenges their health departments face today with information systems. A follow-up was asked as to whether the LHD has developed any plans to addresses these challenges. The majority of LHDs indicated not having developed any plans to addresses problems encountered with using IT systems (refer to figure 16.0).

**Figure 16.0: Plans To Address Identified Challenges**



A second follow-up question was asked whether LHDs had a plan to address challenges identified in the previous question. LHDs described a number of existing plans (n=12). The key themes that emerged were: (1) working collaboratively, (2) increasing local control, (3) increased staffing and/or training of existing staff, and (4) purchasing/creating new systems.

Once again, individual responses were edited for clarity but have been provided below, grouped by theme, to ensure accurate representation.

**Table 4.0: Plans to Address Identified Challenges**

Working Collaboratively
<ul style="list-style-type: none"> <li>Participation or at least monitoring of CLHO IS and many other similar efforts.</li> </ul>
<ul style="list-style-type: none"> <li>Working collaboratively in CLHO and bilaterally with other counties and state programs.</li> </ul>
<ul style="list-style-type: none"> <li>Working with other counties nationally through NACCHO and other associations.</li> </ul>
No Local Control
<ul style="list-style-type: none"> <li>The problem is that virtually all of the separate systems are program mandates and far beyond the control of local health departments.</li> </ul>
<ul style="list-style-type: none"> <li>We are too small and not enough resources currently to do EHR and hope other counties and/or health systems can provide collaboration. Plan is to wait for the area systems to organize and coordinate.</li> </ul>
<ul style="list-style-type: none"> <li>We will not sign on to new software until it has been demonstrated that we will be able to get the data reports back out.</li> </ul>
<ul style="list-style-type: none"> <li>All efforts should prioritize basic data from counties, and the state prioritize its role as a data warehouse accessible by counties for research and query capabilities.</li> </ul>

Staffing/Training
<ul style="list-style-type: none"> <li>• Increase staffing and staff training.</li> </ul>
<ul style="list-style-type: none"> <li>• Establish intranet where training materials can be posted. Implementation of video conferencing capabilities and webinars.</li> </ul>
<ul style="list-style-type: none"> <li>• Educating key personnel through training programs.</li> </ul>

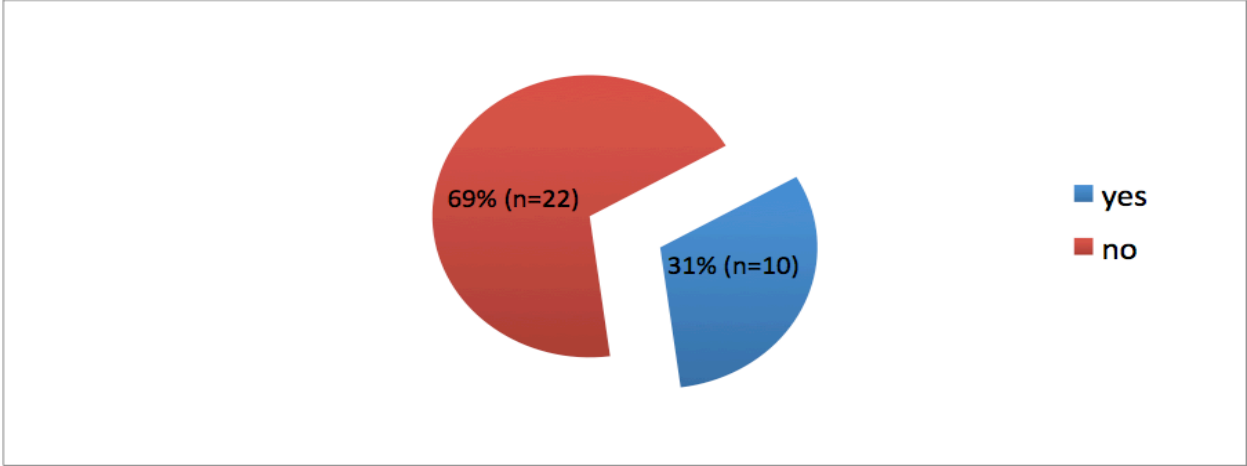
Purchasing/Creating New Systems
<ul style="list-style-type: none"> <li>• Selecting an EMR next year.</li> </ul>
<ul style="list-style-type: none"> <li>• Constantly looking at purchasing or building solutions internally to coordinate interoperability between our EHR and all of the disparate systems to improve employee productivity and improve client outcomes.</li> </ul>
<ul style="list-style-type: none"> <li>• Purchased EMR software, continued and frequent conversations with MMIS staff.</li> </ul>
<ul style="list-style-type: none"> <li>• New Raintree upgrade for increased functionality.</li> </ul>
<ul style="list-style-type: none"> <li>• Plan to purchase a data system and EMR this year.</li> </ul>
<ul style="list-style-type: none"> <li>• Developing RFP for EMR.</li> </ul>
<ul style="list-style-type: none"> <li>• Installing secure email next year.</li> </ul>
<ul style="list-style-type: none"> <li>• Seeking new grant funding at this time to financially support working with IT to add new technology to our program as a means of promotion and information sharing.</li> </ul>

Other
<ul style="list-style-type: none"> <li>• Working on getting fiber optic network to satellite offices.</li> </ul>
<ul style="list-style-type: none"> <li>• Uncertainty about what to do about interoperability and HIPAA concerns.</li> </ul>
<ul style="list-style-type: none"> <li>• Not willing to sign on to new software until it has been demonstrated that we'll be able to get the data reports back out.</li> </ul>
<ul style="list-style-type: none"> <li>• All efforts should prioritize basic data from counties, and the state prioritize its role as a data warehouse accessible by counties for research and query capabilities.</li> </ul>

*Plans to Improve Information Management*

In a related set of questions, LHDs were then asked if they have plans to improve information management electronically using new software or IT systems. The majority of respondents indicated not having plans to improve information management using new software or IT systems.

**Figure 17.0: Plans to Improve Information Management**





Eleven LHDs did indicate having a plan to improve information management. These health departments were asked to describe such plans. Key themes that emerged from the responses included: (1) working with vendors, (2) upgrading and/or new software acquisitions. As with previous questions and corresponding responses, individual responses for this question have been edited for clarity but are provided below, grouped by theme, to ensure accurate representation.

**Table 5.0: Plans To Improve Information Management**

Work with Vendors
<ul style="list-style-type: none"> <li>• Work with software vendors to ensure latest updates and recommend enhancements.</li> </ul>
<ul style="list-style-type: none"> <li>• Serving on major IT vendor management advisory boards.</li> </ul>
<ul style="list-style-type: none"> <li>• Urge EHR vendor and the agencies that provide these systems to focus on interoperability.</li> </ul>
<ul style="list-style-type: none"> <li>• Continue with Raintree and other Tri-County members, Yamhill and Linn Counties, to move to next version of EHR.</li> </ul>
Upgrade and/or New Software Acquisitions
<ul style="list-style-type: none"> <li>• Working with software vendors to ensure latest updates, recommend enhancements.</li> </ul>
<ul style="list-style-type: none"> <li>• Continue with Raintree and other Tri-County members to move to next version (EHR).</li> </ul>
<ul style="list-style-type: none"> <li>• Develop departmental data governance framework.</li> </ul>
<ul style="list-style-type: none"> <li>• OCHIN deployment of Care Everywhere and EPIC Link Implement, Surescripts, and support State immunization exchange.</li> </ul>
<ul style="list-style-type: none"> <li>• Develop improved data exchange and handling for IRIS School exclusion letter process.</li> </ul>
<ul style="list-style-type: none"> <li>• Upgrade behavioral health and billing platform (Raintree).</li> </ul>
<ul style="list-style-type: none"> <li>• Stay apprised of development and replacement of various State systems.</li> </ul>
<ul style="list-style-type: none"> <li>• Constantly pursuing “bridge software” to fill in functionality gaps.</li> </ul>
<ul style="list-style-type: none"> <li>• Considering EMR system for Public Health within next twelve months.</li> </ul>
<ul style="list-style-type: none"> <li>• EMR software for Maternal and Child Health (MCH).</li> </ul>
<ul style="list-style-type: none"> <li>• Transitioning to ORPHEUS.</li> </ul>
<ul style="list-style-type: none"> <li>• Purchase of new vendor products and software.</li> </ul>
<ul style="list-style-type: none"> <li>• RFP for EMR acquisition.</li> </ul>
<ul style="list-style-type: none"> <li>• Installing secure email.</li> </ul>

### ***Top Priorities for Information Management***

LHDs were asked to describe their departments’ top priorities over the next few years in terms of information management. A number of LHDs (n=7) indicated either not having any identified priorities or being unable to set priorities. The majority of LHDs, however, did indicate a range of priorities to improve information management (n=25). Key themes that emerged regarding information management included: (1) unable to set priorities, (2) upgrading and/or new software acquisitions, and (3) being engaged in initial planning phases. Individual responses were edited for clarity but have been provided below, grouped by theme, to ensure accurate representation.

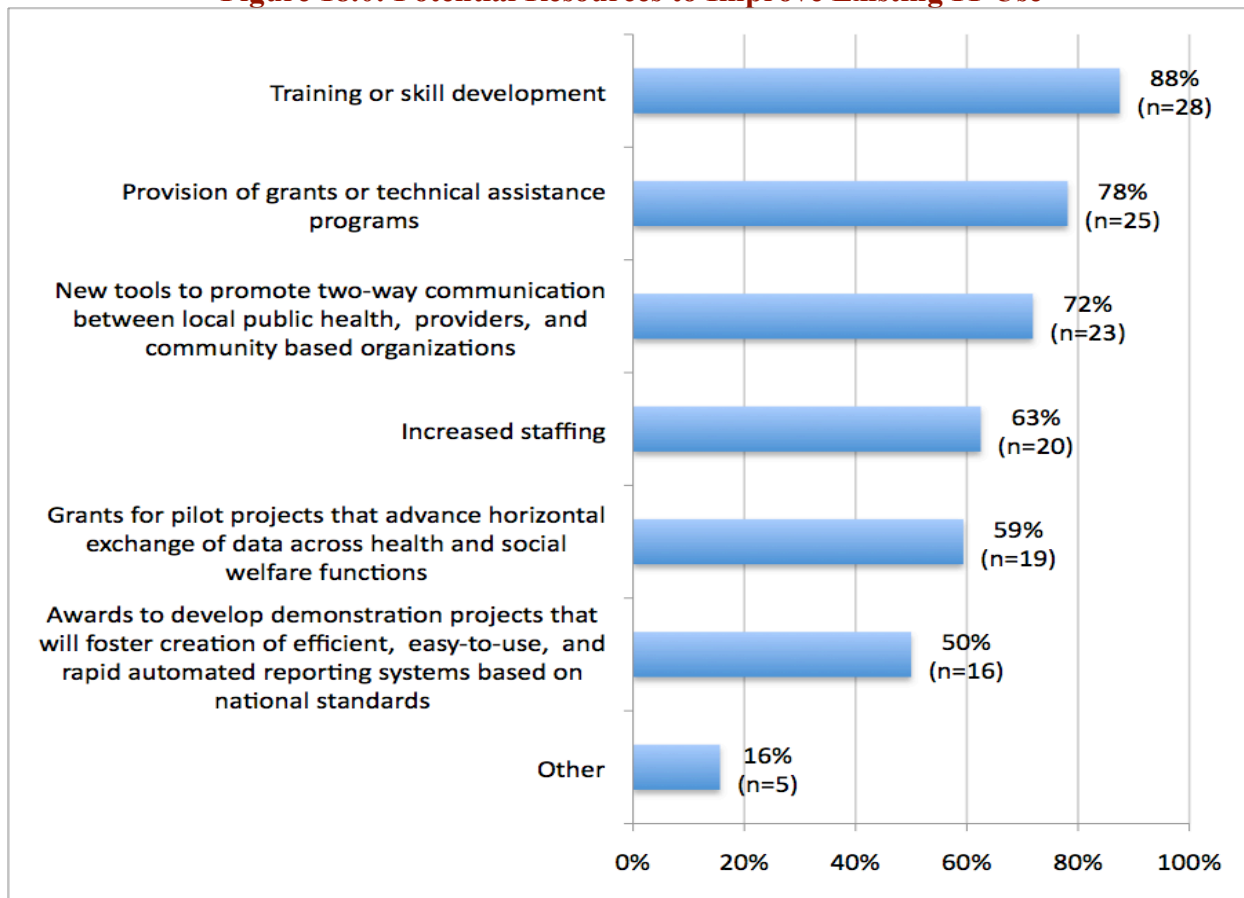
**Table 6.0: Plans to Address Identified Challenges**

<b>Unable to Set Priorities</b>
<ul style="list-style-type: none"> <li>• Part of a larger department, which makes decisions about IT planning more broadly than the needs of Public Health.</li> </ul>
<ul style="list-style-type: none"> <li>• Frustration with the inability of many divisions to manage data needs effectively.</li> </ul>
<ul style="list-style-type: none"> <li>• Financial constraints prohibit any plans, in particular with getting new systems.</li> </ul>
<ul style="list-style-type: none"> <li>• Stand-alone systems are inappropriate and cost prohibitive for local health departments.</li> </ul>
<b>Implement New Software and/or Upgrade Software and Systems</b>
<ul style="list-style-type: none"> <li>• Automatic reporting of communicable diseases.</li> </ul>
<ul style="list-style-type: none"> <li>• Improved scanning/faxing/data transfer into and out of EMR.</li> </ul>
<ul style="list-style-type: none"> <li>• Improved electronic documentation of public health nursing.</li> </ul>
<ul style="list-style-type: none"> <li>• Integration of STD and TB data into Orpheus.</li> </ul>
<ul style="list-style-type: none"> <li>• Adoption of EMR.</li> </ul>
<ul style="list-style-type: none"> <li>• Use of EMR for Home Visiting services and School Based Health Centers.</li> </ul>
<ul style="list-style-type: none"> <li>• Piloting ORPHEUS.</li> </ul>
<ul style="list-style-type: none"> <li>• Performance measures system for outcomes management.</li> </ul>
<ul style="list-style-type: none"> <li>• Transition to full EHR version of Raintree.</li> </ul>
<ul style="list-style-type: none"> <li>• Scanning and archiving of department client records – to eliminate or substantially reduce paper charts and records.</li> </ul>
<ul style="list-style-type: none"> <li>• Desire for State to recommend an IT platform so there is uniformity across counties.</li> </ul>
<ul style="list-style-type: none"> <li>• Implement an electronic dental record and an electronic health record for corrections.</li> </ul>
<ul style="list-style-type: none"> <li>• On-line, self-service renewal and payment of licenses (restaurants, hotels, pools, etc.).</li> </ul>
<b>Planning</b>
<ul style="list-style-type: none"> <li>• EMRs are the top priority, initial planning phase.</li> </ul>
<ul style="list-style-type: none"> <li>• Engaged in research phase of creating a Health Information Exchange internally between our Mental and Physical Health Divisions using existing EHR.</li> </ul>
<ul style="list-style-type: none"> <li>• Working to partner with agencies and organizations around Health Information Exchange. Researching grants or awards to pursue the implementation of Health Information Exchange and improvements with EHR.</li> </ul>
<ul style="list-style-type: none"> <li>• Need to develop long-term archiving solution.</li> </ul>
<ul style="list-style-type: none"> <li>• Interested in exploring options for electronic charting systems to streamline documentation of care.</li> </ul>
<ul style="list-style-type: none"> <li>• Develop IT strategy and governance.</li> </ul>
<ul style="list-style-type: none"> <li>• Exploring a consolidated public health data warehouse and data mart.</li> </ul>
<ul style="list-style-type: none"> <li>• Electronic Medical Records.</li> </ul>

### *Resources to Improve Existing IT Use*

The final question of the survey asked LHDs whether certain resources would be helpful to improve existing IT capacity and infrastructure within their health departments. From the six types of resources listed, the following three were selected most often: (1) training or skill development, (2) provision of grants or technical assistance programs, and (3) new tools to promote two-way communications between local public health, providers, and community-based organizations. Of interest was that all six identified resources were selected as potentially beneficial in improving existing IT capacity and infrastructure by 50% or more. These findings indicate a considerable need for, or lack of, available resources among LHDs in terms of ensuring adequate IT capacity at the local level.

**Figure 18.0: Potential Resources to Improve Existing IT Use**



Five LHDs indicated “Other” in their responses. These responses included the following:

- State making interoperability a priority.
- State assistance with selecting the best process and service based upon size and regional needs.
- Public Health is a state responsibility, which in Oregon is executed at a local level. We should all be involved in creating the components of a shared public health database system, whose prioritized components the State of Oregon should secure.
- Funds that are sustainable and having skilled county IS staff.
- Awards that foster efficient, easy-to-use and rapid automated reporting systems that include comprehensive query system that permits the submitting entity to review and analyze aggregate data.

### ***Final Respondents' Comments***

At the conclusion of the survey, respondents were offered an opportunity to provide any additional comments or feedback. Four LHDs submitted additional comments, which have been listed below.

- We have a good IT department. Cost, time, and personnel are the biggest challenges.
- As new systems are rolled out, program functionality and access to useable data has significantly declined. Our budgets cannot support ongoing staff time for duplicate data entry and to keep separate databases. We would like to avoid being in the position where we are forced to reduce client services in order to enter the data the State requires.
- We do not have the expertise nor the clout to change the whole county IT system to accommodate the needs of Public Health unless incorporated with other organizations.
- Our public health systems do not have the ability to transmit data across one or more internal/external systems.

### ***Concluding Comments***

Overall, findings from the survey indicate the need for additional human and technical resources. Counties report being unable to adequately staff, support, and implement new IT systems; unable to integrate or interface existing IT systems; and unable to store, access and retrieve data in a meaningful, useful or straightforward process. Findings also indicate strong enthusiasm for implementing new and/or upgrading existing IT systems, developing better information management capacity, and achieving more effective and efficient use of various systems and IT applications.

### ***Acknowledgements***

HITOC would like to acknowledge the support and contribution received from the Oregon Public Health Division and the Conference of Local Health Officials. Ellen Larsen was especially supportive and largely responsible in helping HITOC achieve the high level of participation among the 32 LHDs in Oregon. Finally, Elena Wiesenthal, with Portland State University, was integral in drafting the online survey instrument and assisting with the data analysis.

Appendix A: Survey Instrument

## Appendix A: Survey Instrument

# Office for Oregon Health Policy and Research



## Public Health and Health Information Exchange: Oregon's Local Health Departments

Dear Local Health Official/Officer,

The State of Oregon is one of 50 states and state-designated entities to receive funding through the federal State Health Information Exchange Cooperative Agreement Program. This funding was authorized by the Health Information Technology for Economic and Clinical Health (HITECH) Act. The goals of the program are to facilitate and expand the secure, electronic movement and use of health information among organizations according to nationally recognized standards, with a long-term goal of nationwide Health Information Exchange (HIE) and interoperability.

Over the next several months, Oregon's Health Information Technology Oversight Council (HITOC) will be working to develop its Strategic and Operational Plan to promote adoption of health IT and advance information sharing within and across the state. Part of the State's planning process is to collect information from local public health department (LPHD) representatives in order to better understand agency capacity and needs as it relates to use of information systems. It is important for HITOC and other key stakeholders to learn about existing use of information systems by local public health departments (LPHDs).

As part of the ongoing collaboration and work among members of HITOC, Oregon Public Health Division, and Conference of Local Health Officials, this survey was created to collect important information from all 34 LPHDs in Oregon. Your valuable input will be used to inform and help HITOC in health information exchange (HIE) planning efforts that will be occurring in the first half of 2010. We encourage each LPHD officer to rely upon the expertise and experience of departmental staff to complete survey, if considered necessary. Finally, please complete the survey, no later than April 15th (one submission per county).

Sincerely,

Carol Robinson  
State Coordinator, Health Information Technology  
Director, Oregon Health Information Technology Oversight Council (HITOC)

Ellen Larsen  
Chair, CLHO Information Management

**1) Contact Information (must complete)**

County Health Department:	
Individual Completing Survey:	
Title:	
Phone:	
Email:	

**2) Public Health IT Contact Information (if applicable)**

Administrator Responsible for Public Health IT:	
Title:	
Phone:	
Email:	

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**This first set of questions is about your health department's current capacity in terms of public health functions and services.**

**3) Public Health Assessment**

**Does your health department currently support or perform any of the following: (select all that apply)**

- Ongoing monitoring and surveillance, research and evaluation, and/or community assessment
- Provide epidemiology and/or surveillance principles on an ongoing basis to monitor non-infectious and/or chronic diseases
- Collect and analyze data
- Conduct program evaluation activities
- Collect, store and/or work with Vital Statistics Information
- Other (please specify)

If you selected other, please specify:

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Additional comments:

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**4) Communicable and Infectious Disease Protection**

**Does your health department currently support or perform any of the following:  
(select all that apply)**

- Communicable disease outbreak investigation, tracking, surveillance, and/or reporting
- Reporting of notifiable conditions
- Use a communicable disease tracking system
- Other (please specify)

If you selected other, please specify:

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Additional comments:

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**5) Public Health Laboratory**

**Does your health department currently support or perform any of the following:  
(select all that apply)**

- Conduct testing/screening of specimens to determine disease and/or toxins
- Electronic clinical laboratory ordering and results delivery
- Electronic public health reporting
- Other (please specify)

If you selected other, please specify:

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Additional comments:

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**6) Health**

**Does your health department currently provide one or more of the following  
direct services? (select all that apply)**

- Primary care/physician
- Social work
- Mental health
- Nursing
- Nutrition
- Physical therapy
- Case management
- Substance abuse treatment
- Other (please specify)

If you selected other, please specify:

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Additional comments:

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This next set of questions is about your health department's ability to electronically send and receive information with state, local and community partners.

**7) Which of the following software applications does your health department use? (select all that apply)**

	Currently in Use	Plan to Use	No Plans to Use	Not Applicable
AHLERS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CareWare (HIV)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CD 2000 (Multnomah Co CD Database)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ELR (Laboratory Reporting)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EPHT (Environmental Public Health Tracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Family Net – ALERT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Family Net – IRIS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Family Net – Orchids	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Family Net – TWIST/WIC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health Alert (HAN)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MMIS (Medicaid Management Information System)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ORPHEUS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OVERS (Vital Records)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Phoenix (Food Safety)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SWS Online (Drinking Water)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Webrad (Lab Results)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Citrix	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**8) Does your health department use an Electronic Medical Record (EMR) and/or Practice Management software (PM)? (select all that apply)**

- EPIC – EMR
- EPIC PM
- NextGen EMR
- GE Centricity EMR
- Raintree
- AHLERS
- Does not use either an EMR or PMS
- Other (please specify)

If you selected other, please specify:

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**9) Are any of the services and/or programs provided by the health department supported by an EHR, Practice Management, or both? (select all that apply)**

	EHR	Practice Management System	Not sure
Primary care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mental health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nursing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical therapy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutrition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Substance abuse treatment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Case management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**10) Does your department's existing IT infrastructure allow exchange of laboratory data electronically with: (select all that apply)**

- Health care providers
- Local hospitals
- Public or state agencies
- Public health practitioners for tracking diseases and conditions and improving health
- Not applicable
- Other (please specify)

If you selected other, please specify

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**11) Do your department's existing surveillance information systems connect to a local hospital or clinical information system? (select one)**

- Yes
- No
- Not sure
- Plan to connect within the next 2 years
- Not applicable

**12) Does your department's existing surveillance information systems connect to EHRs operated by any local hospitals or providers? (select one)**

- Yes
- No
- Not sure
- Plan to connect within the next 2 years
- Not applicable

**13) Does your department's existing IT infrastructure allow for any of the following: (select all that apply)**

- Electronically transmit data across one or more internal and external data sources
- Electronically send and/or receive data to immunization registries
- Electronically receive and provide submission of reportable lab results (as required by state or local law) to other public health agencies
- Automated epidemiologic assessment and surveillance of disease and conditions in the community
- Electronically share and disseminate information necessary to achieve timely public health interventions and response
- Not applicable

**14) Does your health department electronically exchange information with any of the following: (select all that apply)**

- State agencies
- Federal agencies
- Other local health departments
- Public health labs
- Private laboratories
- Vaccine clinics
- Local community providers
- First responders (EMS)

**15) Does your department's existing IT infrastructure allow for electronic transformation of data into meaningful information in order to prepare for and respond to: (select all that apply)**

- Emergencies
- Diseases
- Outbreak
- Epidemics
- Emerging threats
- Other (please specify)

If you selected other, please specify:

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**16) Does your department have broadband Internet connectivity (e.g. high speed Internet or broad band width)? (select one)**

- Yes
- No
- Plan to in the next 1-2 years
- Don't know

**17) Is your department involved with any local or regional health information exchange planning activities or operations?**

- Yes
- No (skip to question #19)
- Not sure (skip to question #19)

**18) Please briefly explain your health department's involvement with a local or regional health information exchange.**

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**This final set of questions asks about existing and future use of information technology by your health department.**

**19) Please list what systems are working well for your health department.**

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**20) Please describe what your health department is not getting from existing information systems.**

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**21) What are the three biggest challenges your health department faces today with information systems?**

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**22) Has your health department developed any plans to address these problems? (select one)**

- Yes
- No (skip to question 24)
- Not applicable (skip to question 24)

**23) Please briefly describe any plans to address the problems identified in the previous question.**

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**24) Does your health department have a plan to improve information management electronically using new software, IT system, or other?**

- Yes
- No (skip to question 26)

**25) Briefly, please describe the plan to improve information management.**

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**26) Please describe your health department's top priorities over the next few years in terms of information management. For example, software or IT programs your department either plans to or would like to launch in the next few years.**

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**27) Which of the following resources would be helpful to improve existing IT capacity and infrastructure within your health department: (select all that apply)**

- Increased staffing
- Training or skill development
- Provision of grants or technical assistance programs
- New tools to promote two-way communication between local public health, providers, and community based organizations
- Awards to develop demonstration projects that will foster creation of efficient, easy-to-use, and rapid automated reporting systems based on national standards
- Grants for pilot projects that advance horizontal exchange of data across health and social welfare functions
- Other (please specify)

If you selected other, please specify:

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**28) Please provide any additional comments or feedback in the space provided below.**

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**Thank you very much for completing this survey!**