

Illinois HIE Strategic & Operational Plan

- Increase the electronic transmission of structured laboratory results by supporting interoperable standards and removing barriers to the sharing of data
- Increase the sharing of patient care summaries by aligning programs and payment mechanisms to encourage and incent this activity
- Increase awareness and public support for the use of EHR through a communications plan that delivers accurate and complete information about EHR and HIE in culturally-relevant formats
- Increase broadband deployment through coordinated activities with the Illinois Broadband Deployment Council and participation in the federal Broadband Opportunities Program
- Provide focused resources for safety net providers and their patients by identifying additional technical resources for EHR adoption and supporting workforce development programs to retrain existing workers in the transition from a paper to an EHR environment
- Develop a plan for financial sustainability of the statewide HIE by calculating a value model for each entity that will participate in the statewide HIE and devising a revenue model that distributes costs reasonably and fairly

These strategies will be employed through a three-tiered model that leverages existing capacity and builds on the particular strengths of HIE stakeholders across the state:

- The statewide HIE, authorized by Illinois statute and governed by the Authority, will be available to providers throughout the state as a function for local and enterprise HIEs;
- Local HIEs dedicated to engaging and serving diverse groups of local providers; and
- Enterprise HIEs throughout the state, under a variety of private ownership models, all organized to exchange protected health information within a particular privately-controlled institution.

These three levels of HIE will be complimentary, interconnected, and integrated to the greatest extent possible. This delivery model supports OHIT's responsibility to provide a path to participation in HIE to every provider in Illinois.

Environmental Scan

Illinois is the fifth most populous state in the U.S., with a total population of nearly 13 million. Its length of nearly 400 miles and width of 200 miles covers 102 counties and more than 1,300 municipalities that are both urban and rural; affluent and impoverished; industrial and agricultural, and every variation in between. It is home to numerous academic medical centers with nationally recognized programs for health care innovation, as well as many medically underserved areas. There are more than 50,000 physicians and 170,000 nurses serving Illinois patients every day in numerous care settings, including nearly 200 acute care hospitals and health systems, 50 of which are critical access hospitals (CAHs), 400 community health center sites, 3,193 pharmacies, 9,225 CLIA certified laboratories, 95 local health departments, 100 ambulatory surgical treatment centers, and 1,100 long term care facilities.⁶ Approximately 7.4 million residents are covered by commercial insurance, 2.5 million by Medicaid and Medical Assistance programs, 1.9 million by Medicare, and the remainder are estimated to be uninsured.⁷

⁶ Illinois Department of Professional Regulation, Illinois Department of Public Health, and CDC, CLIA.

⁷ HealthLeaders-Inter Study, Illinois & Iowa Health Plan Analysis, Winter 2010 Vol 1, No. 1 and Illinois Department of Healthcare & Family Services.

Illinois HIE Strategic & Operational Plan

In August of 2009, the IL HIE EHR Adoption Survey (2009 Survey), was conducted statewide to determine EHR adoption and HIE participation and an environmental scan performed that informed the initial State HIE planning efforts. Through semi-structured discussions, various stakeholders were engaged to gain an understanding of the current state of implementation and use of EHR, including identifying the obstacles and opportunities for adopting EHR and developing HIE capabilities.

Some of the key findings from the 2009 environmental scan included:

- The EHR adoption rate in Illinois (16%) was estimated to be close to the national average in the ambulatory setting⁸ and slightly higher than the national average in the inpatient setting⁹ but the level of adoption varies greatly across the state.
- In the inpatient setting, implementation has mainly occurred in larger hospitals and smaller hospitals that are part of a larger system. As anticipated, EHR use is concentrated more heavily in urban areas and in academic medical settings.
- According to a 2009 survey of Illinois' CAHs, 45.2% of the 50 CAHs have adopted EHRs and a majority of these users utilize ancillary systems.¹⁰ Additionally, 51% of rural clinics owned by rural hospitals or CAHs had adopted EHRs.¹¹

The 2009 Survey was distributed by the HIE Planning Grantees to a diverse set of local healthcare providers. Although the survey sample was relatively small, it provided a snapshot of Illinois providers' readiness to adopt EHR and participate in HIE. The results of the survey are briefly summarized below and the full survey report is included as an Appendix. [See Appendix C]

- The survey generated responses from virtually the entire spectrum of healthcare providers in Illinois, including a predictably strong response from solo and group practitioners and hospitals but also included responses from public health, community mental health and long-term care providers.
- The survey indicated that the majority of providers' (approximately 60%) office practice utilized a part paper/part EHR system.
- 16% of respondents indicated that their offices had converted to EHR and 22% indicated that their organizations were completely paper-based for their medical records.
- Approximately 40% of hospital respondents indicated that they shared information outside of their corporate systems.

The barriers to EHR adoption that respondents cited in the 2009 Survey are similar to those found in other areas of the country, including: concerns about capital needed to acquire and implement an EHR; uncertainty about return on investment; finding a system that meets the providers' needs, and lack of productivity during implementation. Many of the concerns and barriers identified in the 2009 Survey will be addressed in Illinois' Operational Plan through coordinated efforts with the Illinois RECs, the Medicaid HIT Plan and the administration of the Medicare HIT incentives. It should be noted that the 2009 Survey preceded the ARRA funding for RECs.

⁸ Medical Group Management Association. (2005). Assessing Health Information Technologies in Medical Groups Information for the State of Illinois.

⁹ HIMSS Analytics. HIMSS Analytics™ Database. (2009). Retrieved from: http://www.himssanalytics.org/hc_providers/emr_adoption.asp

The mean HIMSS score for EMR implementation in Illinois in the second quarter of 2009 was 2.7552 versus 2.4874 across the entire United States.

¹⁰ Illinois Critical Access Hospital Network (ICAHN) Health Information Technology. Survey. (2009).

¹¹ ICAHN Health Information Technology Survey. (2009).

Illinois HIE Strategic & Operational Plan

On September 27, 2010, OHIT, in cooperation with the State Medicaid Agency, the Illinois Department of Healthcare and Family Services (HFS), released the 2010 Illinois EHR Statewide Provider Survey (the 2010 Survey). The survey design is reflective of the collaboration between HFS for the development of the State Medicaid HIT Plan and OHIT's responsibility to encourage HIT and EHR adoption and facilitate HIE throughout the state.

The 2010 Survey is intended to measure providers' EHR adoption rates, readiness to qualify for the Medicare and Medicaid EHR Incentive Programs, the degree of e-prescribing and electronic lab reporting functionality and knowledge and current capacity for HIE, including ability to support electronic eligibility, submit claims electronically and manage consent authorization (see Appendix D for survey). The 2010 Survey will be in the field until October 29, 2010.

This annual survey will not only inform OHIT's assessment of the current status of EHR adoption in comparison to the previous year, but will provide additional detail regarding gaps and barriers to achieving widespread Meaningful Use. Survey results will inform OHIT's efforts for developing the roadmap to filling those gaps and removing barriers through execution of the Operational Plan. Both the 2009 Survey and environmental scan identified opportunities for continuous improvement which are addressed in the Gap Analysis section of this Plan. In addition, the Gap Analysis identifies areas of high impact to include in OHIT's Communication Plan and highlights technical assistance needs in order to effectively encourage and accelerate the adoption of EHR technology to support Meaningful Use requirements and HIE capacity.

Current HIE Capabilities

In the Program Information Notice dated July 6, 2010, the ONC directed states participating in the HIE Cooperative Agreement Program to gather and track data on the following measures:

Pharmacies accepting electronic prescribing and refill requests

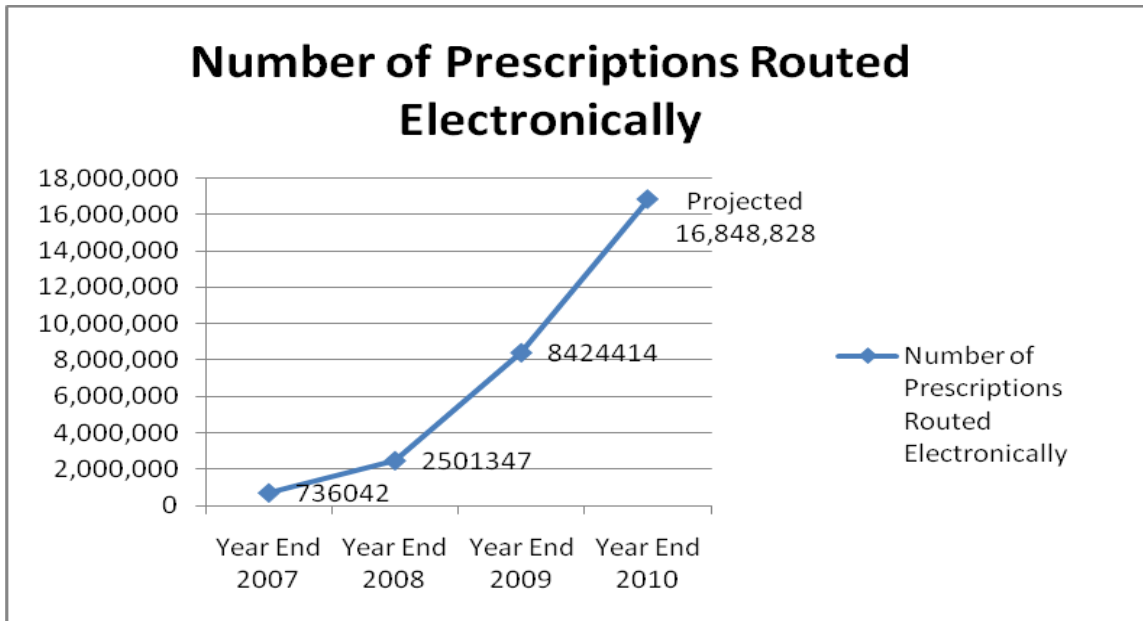
The most recent data on the e-prescribing capabilities in Illinois is current through June 30, 2010. **Based on that data, 89% of the pharmacies in Illinois are able to receive e-prescriptions (activated).**¹² A pharmacy's use of e-prescribing is dependent on the ability of the physician to send e- scripts; the number of active e-prescribers as of June, 2010 was 8,540, up 57% from year's end 2010¹³. In 2009, 8.4 million prescriptions were routed electronically in Illinois. Between 2008 and 2009, the volume of prescriptions routed electronically more than tripled; and Surescripts estimates that between 2009 and 2010 volume will at least double.¹⁴ In addition, 61% of the Illinois population is represented in the Surescripts Master Person Index, representing the population for whom prescription benefit, formulary, and medication history is available through e-prescribing processes.¹⁵

¹² Surescripts, Senior VP Strategy and Innovation, personal communications, July 24, 2010.

¹³ Surescripts, Senior VP Strategy and Innovation, personal communications. July, 24, 2010.

¹⁴ Surescripts, Senior VP Strategy and Innovation, personal communications, July 20, 2010.

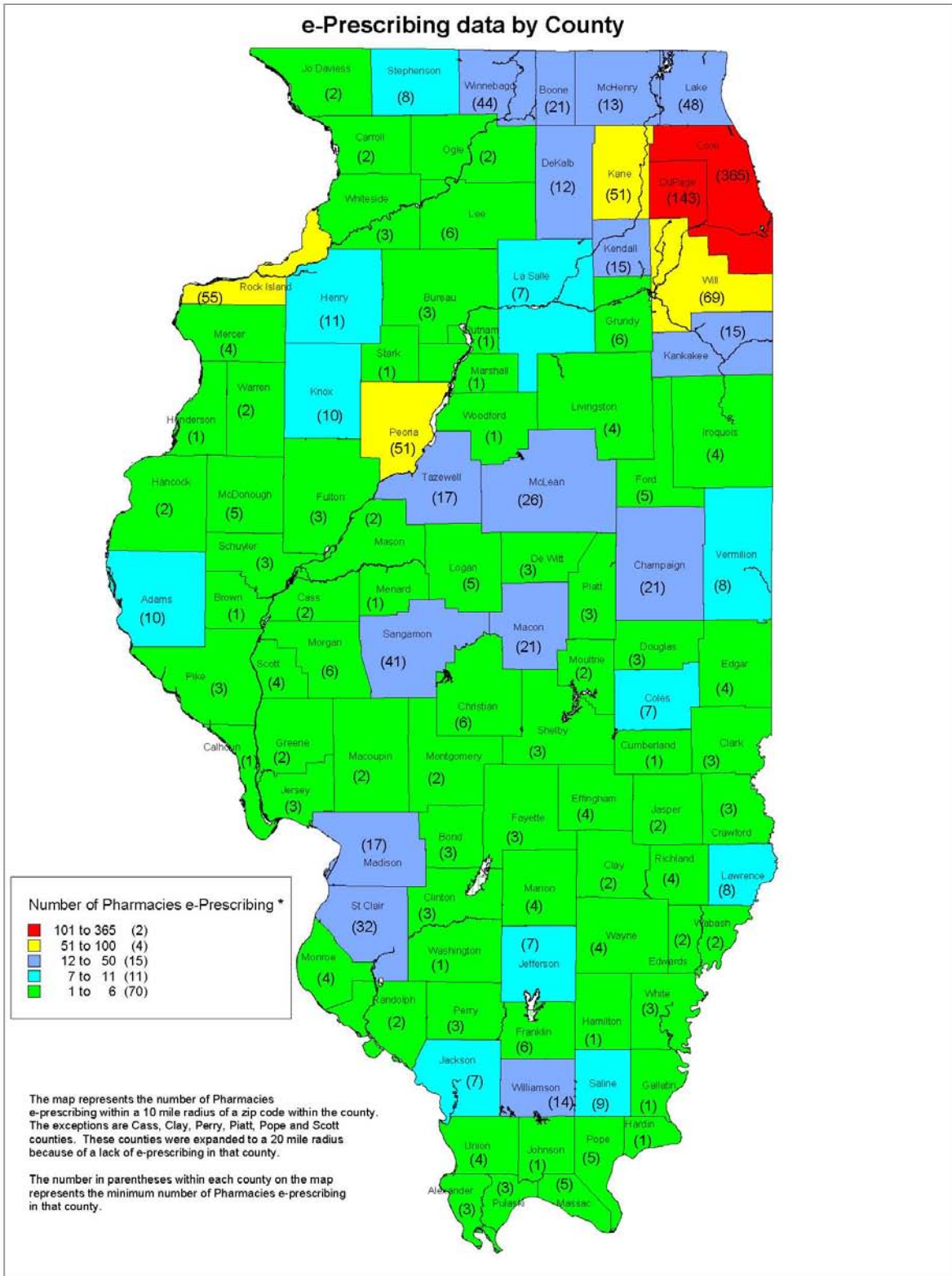
¹⁵ Surescripts, Senior VP Strategy and Innovation, personal communications, July 24, 2010.



In order to assess geographic distribution and access to e-prescribing options, OHIT conducted an analysis of e-prescribing outlets in all 102 Illinois counties. OHIT utilized the county seat as the most likely location for e-prescribing within a county as county seats are typically centrally located within a county and generally the most populous city within a county, particularly in rural counties. Using Surescripts data about e-prescribing locations by zip code and the county seat as the reference point, OHIT identified the number of e-prescribing options within a 10 mile radius. The following map (Map 1) illustrates counties in Illinois that have an e-prescribing option within a 10 mile radius. The counties in densely populated urban areas are noted in red and yellow on the map. These counties are saturated with options for e-prescribing and will not require OHIT resources to identify additional options. Seven rural counties did not have an e-prescribing option within 10 miles, so a 15 mile radius was used to identify an e-prescribing pharmacy and mapped accordingly.

It should be noted that there are a few instances when the available e-prescribing option was in a neighboring state yet still located within the 10 mile radius; these data points are not displayed on the Illinois map. However, as Illinois Medicaid recipients are able to receive their prescription benefits from pharmacies outside of Illinois, the fact that these e-prescribing options are located out-of-state is not a barrier. The counties with fewer options for e-prescribing pharmacies represent predominately rural and underserved communities with low population density and corresponding low levels of EHR adoption. Many of the counties with a limited number of e-prescribing options are also designated as Medically Underserved Areas, as defined by HRSA.

Illinois HIE Strategic & Operational Plan



Illinois HIE Strategic & Operational Plan

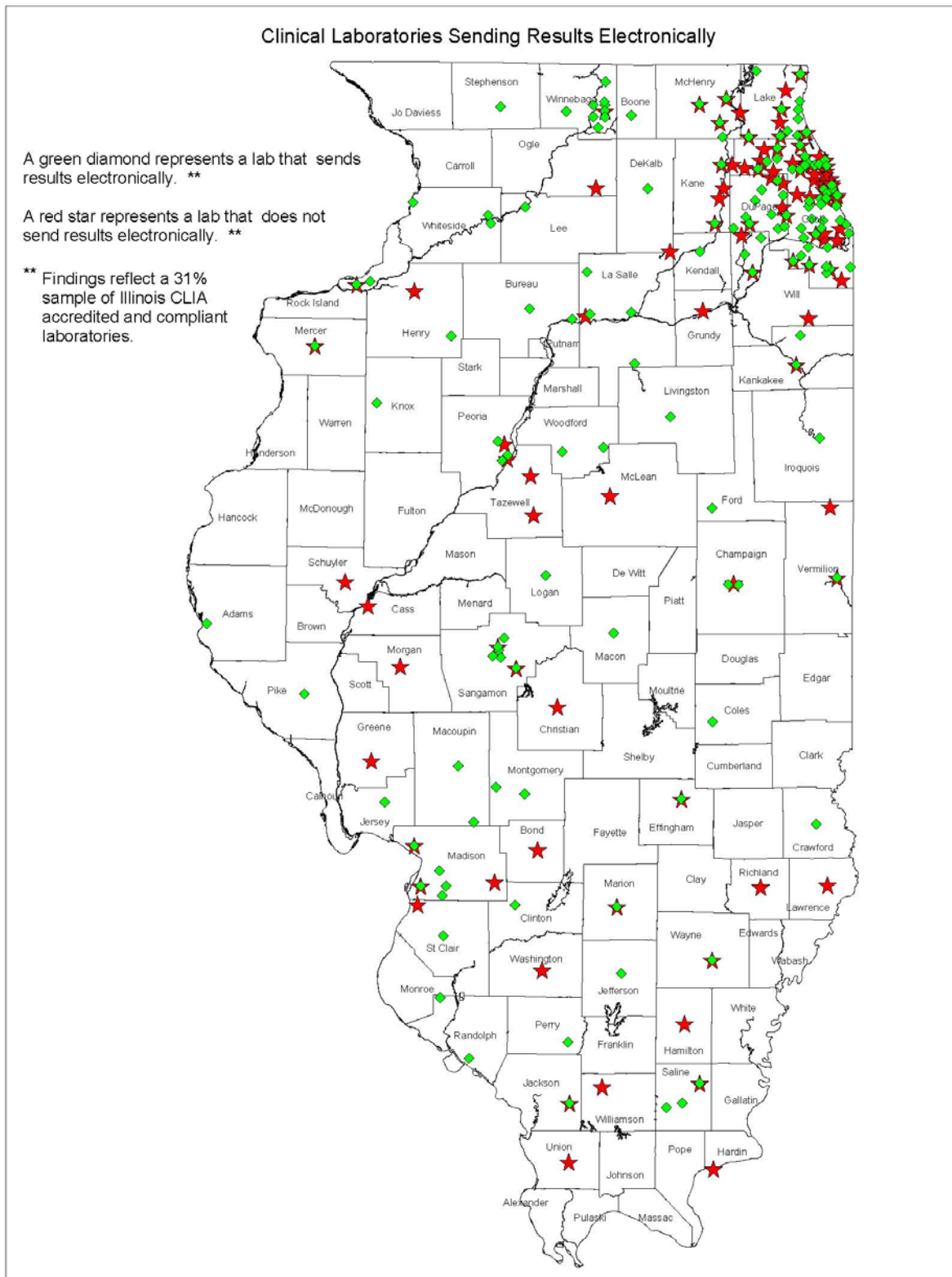
Clinical laboratories sending results electronically

In Illinois, there are 9,225 CLIA-certified (Clinical Laboratory Improvement Amendments) laboratories.¹⁶ In order to gather data about the number of clinical laboratories sending results electronically, OHIT chose to focus its research on the laboratories performing moderate and/or high complexity testing or those laboratories with a Certificate of Compliance and/or a Certificate of Accreditation laboratories. These two certifications are issued to laboratories conducting more full scale diagnostic laboratory tests that go beyond the simple in-house testing that may occur only within a physician's office. OHIT is recently completed a survey of the 1,103 CLIA accredited and compliant laboratories within the state to determine a baseline estimate of the number of laboratories sending results electronically, the degree of standards-based terminology utilization, and the identification of barriers to the electronic exchange of laboratory results (see Appendix E for laboratory survey). Following a one-day test calling period, OHIT determined that based on an average successful response rate of 50% and an average of 10 minutes to complete each call, it would take approximately 366 hours (or approximately 5 weeks for 2 FTEs) to achieve a 100% response rate. OHIT decided that a more prudent use of resources would be to target a large sample size of 30% of the 1,103 CLIA accredited and compliant laboratories. This approach also ensured that respondents were distributed geographically throughout the state. The resulting gap analysis and strategies to address these gaps will be based on the results of this sample.

OHIT achieved the desired 30% sample size, surveying 349 CLIA accredited and compliant laboratories throughout the state. **Based on this representative sample, approximately 61% of the laboratories surveyed have the capability to deliver laboratory results electronically** (See Map 2). By extrapolating this finding to the all CLIA accredited and compliant laboratories, OHIT estimates 672 of the 1,103 CLIA accredited and compliant laboratories in Illinois are capable of electronic laboratory results delivery. Of those laboratories, the majority of respondents were able to provide the State additional information on their capabilities to send laboratory results as structured data; 73% of those respondents reported having this capability. Because the survey respondents tended to be lab managers rather than IT professionals, there was a noticeable decline in respondents' ability to provide detailed information on the particular standards terminology in use at their facility. It should be noted that those who were knowledgeable of their laboratory IT systems, the majority respondents reporting using LOINC.

¹⁶ <http://www.cms.gov/clia/>

Illinois HIE Strategic & Operational Plan



Illinois HIE Strategic & Operational Plan

Public health laboratories sending results electronically

Data gathered independently from the State public health laboratories reflects the State's capacity for electronic laboratory reporting and an opportunity to leverage current reporting specification for broader laboratory interoperability. The State laboratories conduct approximately 2,000,000 tests per year and communicate electronically among locations (Chicago, Springfield, and Carbondale).¹⁷ The Illinois Department of Public Health's (IDPH) laboratories use the web-based Laboratory Information Management System, STARLIMS. STARLIMS provides patient and environmental test results for specimens tested in the State Public Health laboratories. **Through STARLIMS, one hundred percent (100%) of the State Public Health Laboratories use HL7 messaging and send their laboratory results using LOINC and SNOMED codes to communicate notifiable disease conditions to the I-NEDSS system.**

Health plans supporting electronic eligibility and claims transactions

Illinois' Medicaid program supports electronic eligibility checking and claims submission through two different modules. The Medical Electronic Data Interchange (MEDI) system web portal allows registered providers with proper security credentials to check eligibility and the status of claims. There are more than 5,000 Illinois providers using the MEDI system. **In addition, Illinois' MMIS system supports electronic claims transactions, annually processing more than 82,000,000 electronic claims from providers, representing nearly 96% of all Medicaid claims submitted.**

At the request of OHIT, the Illinois Department of Insurance issued a data call to the over 600 insurers authorized to write health insurance policies in Illinois and inquired about their ability to support eligibility and claims information electronically. To date, 419 companies responded to the data call representing a 70% response rate. Of those responding to the data call, 195 (or 47%) responded that they are currently marketing health or medical coverage in Illinois. In addition, **47%, representing 92 companies indicated that they support electronic eligibility transactions.** Of the 103 companies that did not support electronic eligibility, only 7 indicated that they were planning to implement the option within the next year.

123 companies (or 63% of respondents) indicated that they currently support electronic claims submissions. The annual volume of electronic claims received varies dramatically, from a low of 5 claims to a high in excess of 70,000,000. The rate of electronic claims submission for the 10 largest health insurance companies in Illinois is 86%. **In addition, 85 companies (or 44%) responding to the data call indicated that they currently support both electronic eligibility and claims transactions.**

Health departments electronically receiving immunization data

The Illinois Comprehensive Automated Immunization Registry Exchange (I-CARE) is an immunization registry application developed by the Illinois Department of Public Health (IDPH), allowing health care providers to share immunization records of Illinois residents. I-CARE is designed to help providers collect, store, analyze and report their patients' immunization data as well as access patient records for information about immunizations administered outside their practice. I-CARE currently stores immunization information on approximately 4 million patients and contains nearly 40 million records¹⁸.

Among the functionality available to I-CARE users is the capability to: forecast immunization due dates; produce a child health record and pre-printed school physical forms; record patient contraindications, adverse reactions, and immunities; track vaccine inventory; collect patient demographic data and

¹⁷ Illinois Department of Public Health Division of Laboratories, Interview, July 28th, 2009.

¹⁸ Illinois Department of Public Health, 2010.

Illinois HIE Strategic & Operational Plan

insurance eligibility; maintain running progress notes; and schedule appointments as well as track and notify patients of upcoming due dates. The I-CARE program has also incorporated additional data fields to track and record BMI, height and weight, blood pressure, and blood lead screenings.

Currently, one hundred percent (100%) of local health departments in Illinois are able to electronically receive immunizations through I-CARE (see Map 3). I-CARE can accept data from Cornerstone (the statewide data management information system developed to effectively measure health outcomes and facilitate the integration of community maternal and child health services provide to Illinois residents by the Illinois Department of Human Services) through daily batch flat file transfers. Data entered directly into the I-CARE web-portal is available in real-time. IDPH is currently working with providers to enable secure messaging directly between a provider's EHR and I-CARE. I-CARE is able to accept HL7 data, in versions 2.31 and 2.51, from outside sources and is prepared to accept batch data through a secure STP site, which it will use to populate the registry. **IDPH anticipates implementing 2-way real time patient data exchange in early 2011.**

Illinois HIE Strategic & Operational Plan

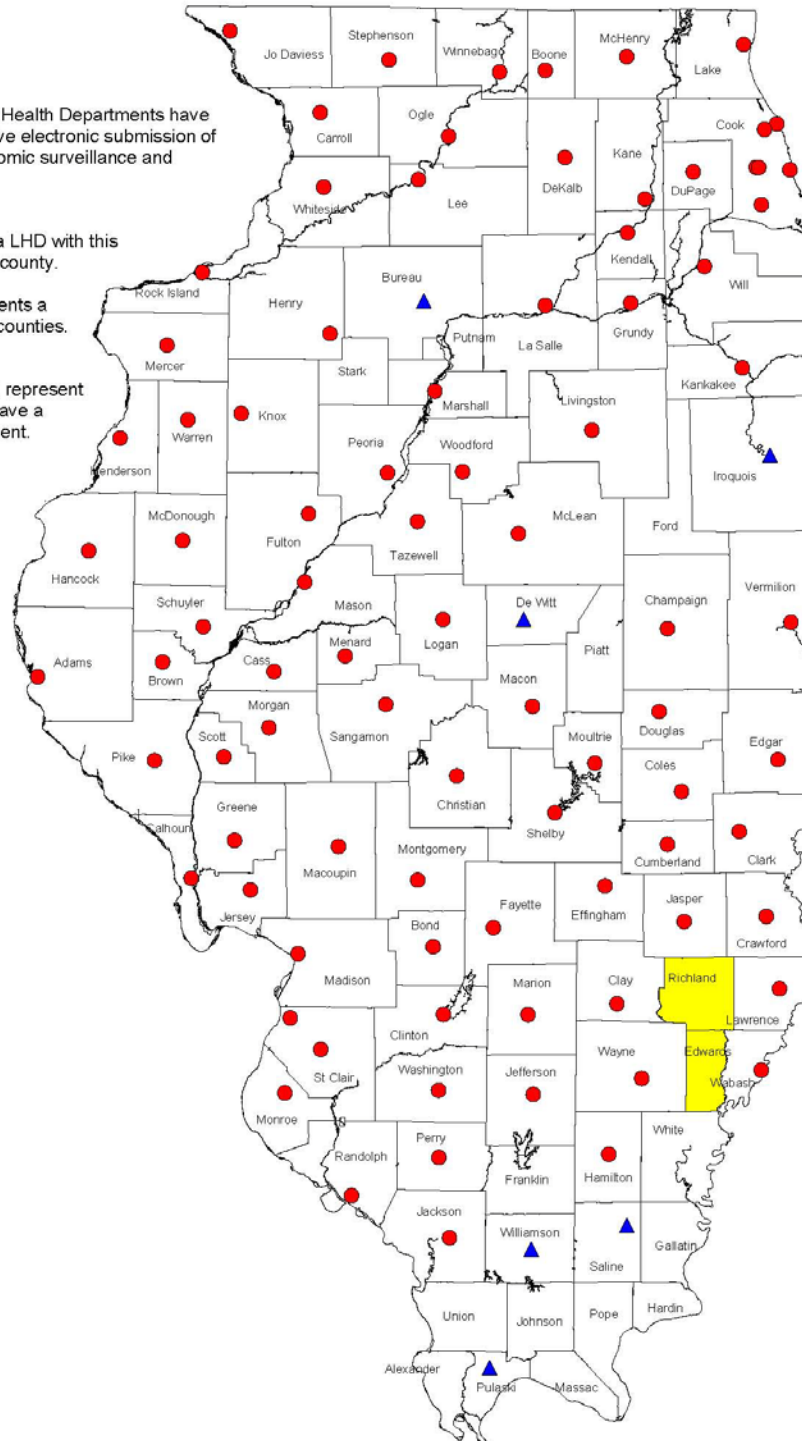
Local Health Departments with capability for electronic immunization reporting, syndromic surveillance and notifiable lab result reporting

100% of Illinois Local Health Departments have the capability to receive electronic submission of immunizations, syndromic surveillance and notifiable lab results.

A red dot represents a LHD with this capability for a single county.

A blue triangle represents a LHD for one or more counties.

The shaded counties (Richland & Edwards) represent counties that do not have a Local Health Department.



Illinois HIE Strategic & Operational Plan

Health departments electronically receiving syndromic surveillance

The Illinois-National Electronic Disease Surveillance System (I-NEDSS) is a web-based system that provides a secure, real-time communication link between hospitals, laboratories, other health care providers, and local health departments for the purpose of disease reporting and surveillance. The I-NEDSS application has been operational for seven years with electronic laboratory reporting (ELR) functional for six of those years. Both I-NEDSS and the State's Laboratory Information Management System, STARLIMS, are compliant with the CDC's Public Health Information Network certification standards and use standardized coding and vocabulary management, integration engines, and public health messaging architecture.

Currently, one hundred percent (100%) of local health departments in Illinois are able to electronically receive disease reports and conduct surveillance and epidemiological investigations through I-NEDSS (see Map 3). Today I-NEDSS allows for the entry of 77 reportable diseases with the ability to add more as regulations and requirements dictate.¹⁹

In addition to the I-NEDSS systems, one hundred percent (100%) of local health departments can access syndromic surveillance via the CDC's BioSense. BioSense receives, analyzes, and evaluates health data from numerous data sources such as emergency rooms, ambulatory care clinics, and clinical laboratories.

Local health departments in northern Illinois and in the Metro-St. Louis area utilize ESSENCE, the Electronic Surveillance System for the Early Notification of Community-Based Epidemics. ESSENCE software is a system that inputs electronic emergency department data for the purpose of syndromic surveillance. In the Chicago metropolitan area, the Cook County Department of Public Health has implemented ESSENCE with hospitals in its jurisdiction since 2005. The Cook County ESSENCE project includes hospitals in the highly populated suburban communities of Skokie, Evanston and Oak Park as well as hospitals in suburban DuPage and Kane counties and shares resulting data with these entities. Downstate rural St. Clair and Madison Counties utilize ESSENCE through the Gateway Essence project (Metro St. Louis partnership). Other Illinois local health departments have implemented their own home-grown or small scale surveillance projects, including several school absentee surveillance system projects.

Health departments electronically receiving notifiable laboratory results

Local health departments electronically receive notifiable laboratory results through I-NEDSS. I-NEDSS facilitates the electronic transfer of lab results from state and private laboratories, and case reports from health care providers to the corresponding local health department for investigations. Because health care provider reports and laboratory reports are stored in the same repository as I-NEDSS surveillance data, the routing of provider and laboratory reports is instantaneous to the investigating health department. **Currently, one hundred percent (100%) of local health departments in Illinois are able to electronically receive notifiable laboratory results through I-NEDSS** (see Map 3).

Sharing of patient care summaries across unaffiliated organizations

Based on the environmental scan activities of the HIE Planning Grant recipients throughout the state, the feedback of the State HIE Advisory Committee and Illinois two Regional Extension Centers, the exchange of full patient care summaries across unaffiliated organizations is not currently occurring in

¹⁹ Illinois Department of Public Health. Illinois – National Electronic Disease Surveillance System (I-NEDSS) NASCIO Recognition Award Submission, 2009.

Illinois HIE Strategic & Operational Plan

any known volume in Illinois. The ability to exchange summary of care records currently exists at the health care systems level, among hospitals' enterprise systems.

HIE Capacity Developed and Assessed through the HIE Planning Grant Program

In February 2009 the Illinois General Assembly appropriated \$3 million to the Illinois Department of Healthcare and Family Services (HFS) for statewide HIE planning. As a result of this initial State investment in HIE, the HFS Office of Planning developed a methodology based on Medicaid claims data to create Medical Trading Areas that represented a patient-centric model of health care transactions within a geographic region.

One of the most significant accomplishments of the year-long HIE Planning Grant process was the degree of statewide stakeholder engagement. The HIE Planning Grantees (Grantees) were asked to develop strategies for stakeholder engagement that were regionally relevant and likely to engage a diverse group of stakeholders. Various methods and strategies were employed during the planning year to engage stakeholders, resulting in nearly 10,000 individual and institutional contacts made by local planning efforts. All of the Grantees who achieved broad stakeholder engagement held regular meetings to keep their stakeholders informed and motivated. Among the elements of successful engagement were one-to-one meetings for key decision makers (hospital executives, physician leaders and practice managers) and identifying HIE "champions" among clinicians who have adopted EHR to encourage their peers to do the same.

In addition, the Grantees initiated extensive educational and research activities about HIE planning and implementation from experts across the country, engaging in multiple webinars, teleconferences, site-visits and educational sessions. The Grantees spoke to HIE subject matter experts in other Midwestern states, including Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio and Wisconsin to capitalize on lessons learned and best practices. As a result of these educational sessions, the Grantees employed multiple research methods to inform their planning efforts, including: the development of use specific cases to address the needs of local stakeholders; extensive documentation of medical transaction and business flows in a multi-county area; documentation of EHR adoption rates of 700 physicians in the Southern Illinois Medical Trading Area; and a series of physician focus groups about EHR adoption and quality outcomes in the Central Illinois Medical Trading Area. These results will inform implementation of HIE in Illinois, and represent a number of best practices for stakeholder engagement.

As a result of the HIE Planning Grant program, five entities have developed plans to implement local HIEs. These local HIE planning efforts have the following characteristics in common: high levels of health care community involvement and stakeholder buy-in, the beginning of governance models, and a desire to be included in Illinois' statewide HIE. These local efforts are developing business and sustainability plans and looking to OHIT for funding. Another common element is that the local HIEs are looking to the Authority to establish statewide standards, particularly for privacy and security and public health reporting.

Much of OHIT's work underway is focused on integrating these local planning efforts into a cohesive plan to encourage the adoption of EHRs, facilitating providers' ability to achieve the Meaningful Use requirements, and establishing the infrastructure to enable statewide HIE.

Illinois HIE Strategic & Operational Plan

Inventory of HIT Capacity

The following details the comprehensive inventory of HIT capacity in Illinois that will serve as the foundation for the Meaningful Use of EHR and statewide HIE.

Regional Extension Centers (RECs)

Illinois received \$15.2M in funding from the ONC to establish two RECs: the Illinois Health Information Technology Regional Extension Center (IL-HITREC) and the Chicago Health Information Technology Regional Extension Center (CHITREC). The RECs will provide general assistance in the form of outreach, education, needs assessment, workflow analysis and redesign, identifying of resources and providing direct technical assistance to priority primary care providers to adopt and achieve Meaningful Use of EHR systems. Together, the RECs plan to provide services to more than 3,000 of Illinois' priority primary care providers.

IL-HITREC is a statewide consortium led by Northern Illinois University (NIU), serving all areas of Illinois outside metropolitan Chicago. IL-HITREC has established four satellite locations throughout Illinois to more effectively communicate and coordinate efforts with local providers. The Northwest Satellite Office will be administered by NIU; the other three satellites are administered by three partner organizations: Metropolitan Chicago Healthcare Council is responsible for suburban Chicago providers; Quality Quest for Health of Illinois is responsible for central Illinois providers; and the Southern Illinois Healthcare Foundation is responsible for the southern Illinois providers. IL-HITREC is also supported by six collaborating organizations, including the Illinois Hospital Association, the Illinois Critical Access Hospital Network, the Illinois Public Health Institute, Illinois State University, the University of Illinois at Chicago and Northern Illinois Physicians for Connectivity.

CHITREC is a public-private partnership led by Northwestern University and the Alliance of Chicago Community Health Services, serving the densely populated Chicago metropolitan area. CHITREC's efforts are supported by more than 40 local and national collaborating organizations, including the University of Chicago Medical Center, the City Colleges of Chicago and the University of Illinois at Chicago Medical Center.

IL-HITREC and CHITREC plan to offer the following services to primary care providers: assistance with EHR selection and implementation, HIT-related workflow design and management, technical infrastructure and interoperability consulting, and guidance with privacy and security practices. Both RECs have representation from or are contracting with organizations that participated in the Illinois HIE Planning Grants program, leveraging existing locally-based HIE organizational capacity in multiple regions throughout the state.

Public Health

IDPH is a leader in data analysis for health care quality improvement and patient safety, for prevention issues with immunization registries, and in preparedness with mandated reporting of communicable diseases. The benefits resulting from the significant increase in the adoption of HIT and the implementation of HIE will support the public health system in performing the core functions and essential public health services. The improvements in data quality and available information will enhance clinical and population health data analysis, evaluation, and research.

IDPH currently coordinates with other State agency databases, performs several registry functions, and administers web-enabled reporting applications that allow for electronic messaging and receipt of data. Specifically, the functionality of I-CARE and I-NEDSS systems was discussed in detail in the Environmental

Illinois HIE Strategic & Operational Plan

Scan section of this Plan. Past and current opportunities for EHR implementation and the electronic sharing of health information has targeted improved patient care through medication management, clinical decision support, reduced health care associated infections, and triggered intervention alerts.

Public health electronic laboratory reporting interoperability project

The software development group within the Infectious Disease Department at the John H. Stroger Jr. Hospital of Cook County, the largest public hospital in the state has partnered with the Chicago Department of Public Health (CDPH) to establish an electronic laboratory reporting data feed, sending reportable laboratory results to CDPH's Chicago Health Event Surveillance System. Based on the success of this partnership, CDPH has contracted with the Stroger group to establish electronic laboratory report sending capacity at other Chicago area hospitals. Currently, six Chicago hospitals are utilizing the Stroger-designed ELR interface to automate the sending of reportable laboratory results to CDPH via IDPH's I-NEDSS. The best practices and lessons learned from this pilot will help drive future electronic lab reporting initiatives.

Interoperability of EHRs and the State immunization registry, I-CARE

Illinois submitted a proposal to the CDC in response to the funding announcement for Enhancing the Interoperability of Electronic Health Records and Immunization Information Systems, to securely exchange data between EHR systems of large health care providers and the Illinois Comprehensive Automated Immunization Registry Exchange (I-CARE) registry application. The secure exchange of this data will allow Illinois to increase the number of children and adults participating in the immunization registry, reduce health care costs associated with giving unnecessary immunizations, reduce the risk of care interruption and establish greater accuracy on Illinois and national immunization levels. Participating health care providers are already able to utilize the I-CARE registry to search all documented vaccinations, produce day care and school entry health forms and measure immunization coverage levels for specific providers and practices, but under this initiative also will be able to reduce the double entry of data into I-CARE and EHR systems and receive data on additional vaccinations from I-CARE to the EHR systems.

Although IDPH did not receive federal funding, IDPH will continue to collaborate with Illinois-based health care providers systems to assess EHR systems for interoperability with I-CARE, with the goal of enhancing functionality and data exchange between EHRs systems and public health. Data exchanges will be available in both batch and real-time transmissions initially utilizing HL7 version 2.3.1 and upgrading to version 2.5.1 by early 2011. IDPH will provide assistance to staff of provider EHR systems to effectively implement and sustain routine data exchanges. However, the ability of IDPH to financially support the complete technical assistance needs of providers, especially for those providers whose health systems are not currently able to transmit information in a format compatible with the I-CARE system, has been impacted.

Telehealth and Telemedicine

For the past decade there has been a consistent attempt to explore the integration of telemedicine into health care delivery in Illinois. While many of the earlier pilot projects demonstrated improvements in quality and reduction in costs, there were significant obstacles identified that prevented programs being adopted into the overall health care delivery model. Aside from niche or department specific programs, wide adoption of telehealth has yet to be integrated into the health care delivery system in Illinois.

Illinois HIE Strategic & Operational Plan

With the change in the Medicare reimbursement regulations and the passing of revised Medicaid regulations in Illinois that provide reimbursement for a more broad range of telemedicine services, Illinois is poised to develop as a leading state in the integration of telemedicine services into HIE.

Included below is a brief summary of some of the work by institution and collaborative groups over the past decade:

- Southern Illinois University has been an early adopter of telemedicine and continues to be a bellwether organization for Illinois in this area. Southern Illinois University has led the State's initiative for establishing primarily educational programs in association with the Illinois Critical Access Hospital Network. The majority of Critical Access Hospitals obtained video conferencing connections to the medical campus at Southern Illinois University in Springfield. This telehealth network is also used for clinical services and consultations but numerous obstacles prevented clinical services from becoming the primary service line. The telehealth network achieved success in providing medical educational services, grand rounds, and other telehealth related services.
- The University of Illinois at Chicago (UIC), an early adopter of electronic medical records and wireless technology, has explored telemedicine primarily through grant funded efforts and has explored both domestic and international telemedicine opportunities. On the domestic front, UIC has explored efforts that include home monitoring for CHF patients, delivery of psychiatry to children in remote locations, and use of mobile devices for achieving weight loss. More recent programs include a telemedicine program with the Illinois Department of Corrections to provide remote management support to the prison system, development strategies for telehealth simulation training centers, and creation of a testing and training laboratory for telehealth research.
- The University of Illinois continues to build its telehealth programs across the healthcare disciplines exploring the use of telehealth and remote monitoring in nursing, pharmacy, dental and medical applications as well as social service support, medical informatics, allied health and public health.
- The Illinois Critical Access Hospital Network (ICAHN), in collaboration with several State universities, has created an internal committee to examine telehealth opportunities that would benefit ICAHN. The ICAHN was recently identified as the preferred partner for pilot projects for the State telestroke network.
- In response to State mandate, the State Stroke Committee established a subcommittee to focus on the development of a model to provide telestroke services to rural areas. The telestroke network will provide telestroke services to geographic regions without adequate access to stroke services.
- The Metropolitan Chicago Healthcare Council (MCHC) is supporting program development to allow access to Illinois Poison Center and through a novel collaboration of interpreters through video conferencing.