I. Current State

a. Overview

The State of Illinois has made progress in planning a statewide Health Information Exchange (HIE) that began in August 2005 when an Electronic Health Records Taskforce (Taskforce) was convened to plan for the development and utilization of electronic health records. The Taskforce, comprised of a broad range of health care stakeholders from around the state, issued a final report in December 2006, which recommended legislation to create a state-level HIE and included provisions for the governance of that exchange. Legislation to enact the Taskforce recommendations was amendatorily vetoed in 2007 and did not become law.

To continue necessary stakeholder support and progress toward a state-level exchange, and consistent with the intent of legislation, the State reconvened members of the Taskforce in January 2008 as the Illinois HIE Advisory Committee. Membership and participation in the Advisory Committee continues to expand to reflect the increased breadth and depth of interest in HIE in Illinois and the need for representation among all stakeholders including providers, patients, payers, the behavioral and mental health community and others. The Advisory Committee formed several Work Groups – Governance, Privacy and Security, Sustainability, Consumer Education, and Technology and Interoperability – that will be participating in the development of the Strategic and Operational Plan.

Some ONC expectations for a Strategic Plan are already in motion. By the end of 2009, Governor Quinn will create an Office of Health Information Technology (OHIT) by executive order. The State Health IT Coordinator has been named and will be transitioning to the full time position by year's end. The attached budget includes the staffing of the OHIT.

With the assistance of the National Opinion Research Center at the University of Chicago, the State of Illinois has conducted an environmental scan to assess the adoption of health information technology and participation in HIE efforts in support of the Illinois HIE plan. The environmental scan documented interviews with numerous state and national informants who identified both opportunities and obstacles in Illinois' health IT and HIE efforts. The findings included an assessment of EHR adoption

and implementation in a variety of hospital settings and physician practices. The information gained from the environmental scan indicates that the current environment in Illinois is favorable to EHR and HIE, which bodes well for the State's continued planning efforts, as laws in Illinois tend to be friendlier towards health IT and HIE, especially with regard to patient consent and privacy.

A number of initiatives are underway in Illinois to increase the adoption and utilization of health IT. The Illinois HIE Planning Grants Program administered through the Department of Healthcare and Family Services (HFS) is a $3 million program to fund local HIE planning. For this initiative, the state was divided into 16 Medical Trading Areas (MTAs), based on medical transactions in a geographic region, and each of these received grants to develop a governance structure; build social capital; forge data-sharing agreements; engage clinicians; and identify barriers to adoption and begin work to overcome them. In addition, these planning entities hope to leverage federal incentives for EHR adoption and HIE outlined in ARRA and assist the State in developing a financially sustainable state-level HIE that can help improve health care outcomes, reduce medical errors, coordinate care and control costs.

Currently, the MTA grantees are in the process of engaging the commitment of a majority and diverse set of provider and community stakeholders, based on each MTA's geographic and demographic population. These stakeholders include: practicing clinicians and medical groups, nurse practitioners, hospitals and hospital associations, corporate and independent laboratories, chain and independent pharmacies, health plans and insurers, employers and business coalitions, representatives from local government, local public health departments, patients and family members, consumers and consumer advocacy groups, quality improvement organizations, behavioral health providers, and long term care facilities.

In order to estimate the number of Illinois medical professionals potentially eligible for Medicaid incentives for meaningful use, HFS commissioned an analysis of Illinois physician providers. The analysis was conducted by Navigant Consulting, Inc. The Navigant analysis indicated that approximately 50% of the professionals eligible for Medicaid HIT incentives have practices in Cook County. The

analysis also indicated that the majority of remaining eligible professionals have practices in Cook's collar counties and in the more populated counties outside of the Chicago metropolitan area.

In addition, the planning grantees, along with members of the HIE Advisory Committee, assisted HFS in conducting a baseline EHR survey, which covered a series of questions about the current state of EHR adoption, barriers to adoption, and awareness of rate incentives for meaningful use. Although HFS is still analyzing the survey data, initial analysis indicates that 82% of survey respondents are aware of federal incentives for EHR adoption and meaningful use. The survey respondents were representative of many different types of physician offices ranging from 1-3 physician practices to multi-specialty offices with more than 100 professionals on staff. This information will be helpful to the Regional Extension Centers and other technical assistance efforts. When asked to rate the factors driving information exchange, respondents cited the ability to improve health care and quality outcomes; improve patient safety; reduce medical errors and duplicative services; and enhance patient care coordination. The survey responses will be further analyzed and shared with the MTAs so that appropriate follow-up and technical assistance can be deployed.

With the exception of the Illinois HIE Planning Grants Program mentioned above, activity with regard to information exchange initiatives among multiple stakeholders in Illinois has been low. Recently, however, some health care organizations have partnered to promote certain HIE capabilities. For example, BlueCross BlueShield of Illinois has teamed with Rush University and the University of Illinois-Chicago Medical Centers and the Medicaid program to utilize a continuity of care record (CCR) to send administrative and clinical data to their EHRs. An HIE effort is also being developed in the safety net provider arena to exchange perinatal care data between the Alliance of Chicago's community health centers and Northwestern Memorial Hospital. The Illinois Hospital Association's Health eGateway is another information sharing effort in which hospitals and providers form individual agreements in order to exchange health information. An additional HIE effort in Illinois is the Department of Public Health's immunization registry named I-CARE (Illinois Comprehensive Automated Immunization Registry

Exchange), which will soon implement an electronic data interchange in addition to its web-based program.

Overall, the EHR adoption rate in Illinois is close to the national average in the ambulatory setting[1] and just slightly higher than the national average in the inpatient setting,[2] 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. Among the approximately 200 Illinois hospitals and health systems, notable implementers and users of EHRs in Illinois include North Shore University System in suburban Evanston and Skokie, Carle Foundation in downstate Urbana, Mercy Hospital in Chicago, Swedish Covenant Hospital in Chicago, and the Sarah Bush Lincoln Health System in Mattoon.[3] While the last hospital listed is in a rural area, EHR adoption is concentrated more heavily in urban areas and in academic settings. There are 50 critical access hospitals (CAHs) in Illinois. According to a 2009 survey of Illinois CAHs, 45.2% have adopted EHRs.[4] Additionally, 51% of rural clinics owned by rural hospitals or CAHs had adopted EHRs.[5]

Based on ambulatory EHR adoption rates from 2005, the number of providers with implemented EHRs is slightly higher in Illinois compared to the national average. Data on ambulatory adoption rates in 2005 in Illinois show that 11.2% of providers had fully implemented EHRs and 15.9% had partially implemented EHRs. An additional 42.1% of Illinois providers surveyed stated that they were planning to implement EHRs within the next 24 months.[6] Nationwide in 2005, 11.5% of providers surveyed had fully implemented EHRs, 12.7% had partially implemented, and 34% planned to implement within the

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[1] Medical Group Management Association. Assessing Health Information Technologies in Medical Groups Information for the State of Illinois. (2005).
[2] 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. HIMSS scores for EMR implementation range from 0 (lowest level of implementation) to 7 (highest level of implementation).
[3] HIMSS Analytics™ Database. HIMSS Analytics. (2009).
[4] ICAHN Survey. (2009).
[5] ICAHN Survey. (2009).
[6] Medical Group Management Association. Assessing Health Information Technologies in Medical Groups Information for the State of Illinois. (2005).

next 24 months after the survey.[7] More recent data from a 2008 survey of providers in northwestern Illinois showed higher EHR adoption rates with 28% fully implemented, 9.3% partially implemented, and 29.7% planning to implement within the next 24 months.[8] Illinois' goal is to maximize the ability of providers to qualify for the meaningful use rate incentives by advancing robust interoperable health information infrastructure throughout the state.

Through the development of the HIE Planning Grants Program and the monitoring of existing HIE activities throughout the state, Illinois has initiated planning for each of the five domains supporting the ONC program. The ONC key expectations and Illinois' progress on each are documented in the following table.

[7] Medical Group Management Association. Assessing Health Information Technologies in Medical Groups. (2005).
[8] Carlson, M. Adoption Rates and Barriers to Implementation of Electronic Health Records In Physician Office Practices in Northwestern Illinois. (Doctoral dissertation, Warren National University). (2008).

KEY EXPECTATIONS	PROGRESS on Key Expectations & STATUS of Domain Planning
GOVERNANCE DOMAIN: Develops and maintains a multi-stakeholder process to ensure HIE among providers is in compliance with applicable policies and laws. **Functions:** Convening health care stakeholders to create trust and consensus on an approach for statewide HIE; Provide oversight and accountability of HIE to protect the public interest.	
Establish a governance structure that achieves broad-based stakeholder collaboration with transparency, buy-in and trust.	Membership and participation in the Illinois HIE Advisory Committee continues to expand to reflect the increased breadth and depth of interest in HIE in Illinois and the need for representation among all stakeholders including providers, patients, payers and others. The Advisory Committee has formed a Governance Work Group to develop more specific recommendations regarding a governance model for a state-level HIE that reflects the consensus of this wide group of health care interests. All HIE Advisory Committee meetings adhere to the Illinois Open Meetings Act and all HIE meeting notices are posted publically. In addition, HIE Advisory Committee meeting minutes are posted on the hie.illinois.gov website. Governance structure of the state-level HIE will be included in the legislation to create the public-private entity that will operate the HIE. Specific governance issues to be addressed are included in Appendix A.
Set goals, objectives and performance measures for HIE reflecting consensus among stakeholder groups, accomplish statewide coverage of all providers for HIE meaningful use criteria (to be established).	The Strategic Plan will devise strategies for achieving consensus of all major stakeholders, including but not limited to focus groups, webinars, community outreach, public hearings, and awareness campaigns. HFS provided all planning grantees with detailed information about the Medicaid providers in their respective MTAs. This data set included information about Medicaid providers, including physicians, nurse practitioners, hospitals, local health departments, FQHCs, and rural health centers, by volume. By sharing this data and targeting high volume Medicaid providers, the MTAs will be able to assist in achieving EHR adoption and meaningful use for all providers. The State needs to develop additional strategies to engage commercial payers in the HIE planning process through the strategic planning process in order to assess and address the technical needs of commercial providers in order to meet the criteria for meaningful use. The State will also need to identify a source for identifying Medicare providers and their needs in regard to achieving meaningful use.

KEY EXPECTATIONS	PROGRESS on Key Expectations & STATUS of Domain Planning
Ensure coordination, integration, alignment of efforts with Medicaid and public health programs via efforts with HIT Coordinators.	As the largest provider of health care coverage and through the operation of HFS' Medicaid Management Information System (MMIS) and Medical Data Warehouse, the State will provide a significant foundation for the success of the state-level HIE. HFS will actively participate in its governance. Prior to the creation of the public-private entity, all necessary planning activities related to the state-level HIE will be administered through a newly designated Office of Health Information Technology (OHIT) within the Office of the Governor. The OHIT will ensure that the State's Strategic and Operational Plans are developed in a manner consistent with the State Medicaid Health IT Plan, which HFS will submit to CMS to outline its administration of the EHR meaningful use rate incentives. OHIT will engage the State Planning Group that includes leaders of other state agencies to ensure that state-level HIE planning is aligned with Public Health and other agency health IT programs and initiatives.
Establish mechanisms to provide oversight and accountability of HIE to protect the public interest.	The EHR Taskforce and subsequent legislation also recommended the creation of a public-private partnership to operate the state-level HIE. Based on the continued consensus of the HIE Advisory Committee, the State plans to move forward with this recommendation and seek statutory authority for the creation of the exchange. The broad oversight and accountability for the exchange will be outlined in statute.
Account for the flexibility needed to align with emerging nationwide HIE governance (as specified).	The strategic plan will identify the process through which the Illinois HIE will evolve to in order to allow participation in a multi-state and nationwide HIE.
FINANCE DOMAIN: Public and private financing for building HIE capacity and sustainability. Pricing strategies, market research, public and private financing strategies, financial reporting, business planning, audits, and controls. **Functions:** Identification and management of financial resources to fund health information exchange.	
Develop capacity to effectively manage funding necessary to implement state Strategic Plan.	Through the work of the HIE Advisory Committee and its Sustainability Work Group, the State has begun to identify potential sources of long-term funding outside of public expenditures that will be necessary to sustain a state-level HIE. The continued development of this capacity will be a key component of the State Strategic Plan.
Establish financial policies and implement procedures to monitor spending and provide appropriate financial controls.	The State currently operates under policies and procedures that are consistent with federal and state financial reporting and audit requirements, including compliance with sound financial controls and audit procedures. Specific HIE financial policies and procedures have not been developed but will follow established protocols and modify them accordingly.
Develop a path to sustainability including a business plan with feasible public/private financing mechanisms for ongoing information exchange including	One of the most challenging aspects of planning for a successful state-level HIE is developing a financial model that will be sustainable. In order for Illinois to succeed in this effort, the HIE Advisory Sustainability Work Group will research financial models that have been successful in other states and local communities. Because the proposed governance structure for Illinois is a

KEY EXPECTATIONS	PROGRESS on Key Expectations & STATUS of Domain Planning
among health care providers and with those offering services for patient engagement and information access.	public-private entity, input from government officials, employers, health plans, EHR users, patients and consumers will be critical in developing a sustainability model that is acceptable to all stakeholders. Financial decisions will be informed by conducting market research studies to determine the best practices and revenue generating mechanisms, developing pricing strategies based on anticipated supply and demand for HIE, and assessing the potential impact of federal funds to assist Medicare and Medicaid providers in adopting EHR. The State anticipates that it will need to foster relationships with philanthropic organizations whose missions are aligned with meeting the health needs of the uninsured, underinsured and medically under-served populations in order to supplement the sustainability plan.
TECHNICAL INFRASTRUCTURE DOMAIN: Functions: Physically enabling the technical services for HIE in a secure and appropriate manner. Includes: Architecture, hardware, software applications, network configurations and other technological aspects	
Develop or facilitate the creation of a statewide technical infrastructure that supports statewide HIE. States may prioritize among these HIE services according to its needs.	Several of the MTA level stakeholders have begun implementing HIE technology, albeit on a small scale. The State will build upon these efforts and integrate them into a larger-scale initiative.
HIE services to be developed include: • Electronic eligibility and claims transactions	The largest private payer in Illinois, BlueCross BlueShield of Illinois (BCBS), is currently using electronic methods to transmit administrative and financial information. BCBS held 47% of the private health insurance market share in Illinois in 2007, and is accepted by approximately 90% of the physicians in the State.[9] An estimated 80- 90% of physicians participating with BCBS are using electronic information sharing systems provided by BCBS to transmit administrative data, including claims and eligibility information, electronically. Specifically, the main system provided is Availity, which participating providers can use to: *securely access patient eligibility and benefits information, request authorizations, and submit and monitor claim submissions and status via Availity's secure web portal, the Availity® Health Information Network.*[10]

[9] Health Care for America Now!. Illinois Consumers Pay the Price For Health-Insurance Market Failure. (2007). Retrieved from: http://hcfan.3cdn.net/792178994437e39425_15m6bxkxg.pdf

[10] Blue Cross and Blue Shield of Illinois. Blue Cross and Blue Shield of Illinois Brings Versatile Availity Platform to Illinois Providers. (2009). Retrieved from: http://www.reuters.com/article/pressRelease/idUS188506+27-May-2009+PRN20090527

KEY EXPECTATIONS	PROGRESS on Key Expectations & STATUS of Domain Planning
	Public payers in Illinois have also been active in this area. Currently, Illinois' Medicaid program accepts electronic claims submittals. As of April 2009, the electronic medical claims rate for Medicare Part B carriers was 96.7%.[11]
• Electronic prescribing and refill requests	In 2008, Illinois had the distinction of being named the most improved state in terms of e-prescribing adoption by SureScripts. As of 2008, the e-Rx adoption rate is close to the national average. In Illinois, there are 4,931 active physician e-prescribers, and 70% are using full EHR systems to conduct e-prescribing.[12] The recent gain may be related to changes in Medicaid prescribing rules requiring use of tamper resistant prescriptions starting in the summer of 2008. Among providers, incentives from payer organizations (BlueCross BlueShield of Illinois and United Healthcare) have also helped promote the adoption of electronic prescribing. Illinois has a higher percentage of pharmacies activated for e-prescribing compared to other states. This is primarily because Illinois has more large, chain pharmacies as opposed to small and independent pharmacies than the national average. In Illinois, small pharmacies account for only about 500 of the approximately 2600 pharmacies across the State. Unlike larger chain pharmacies, small and independent pharmacies often lack the financial resources to implement e-prescribing, since they must pay fees on a per electronic prescription basis. As of June 2009, 1,877 pharmacies in Illinois were equipped to receive prescriptions electronically.[13]
• Electronic clinical laboratory ordering and results delivery	Public health labs that conduct approximately 2 million tests per year communicate electronically among their locations (Chicago, Springfield, and Carbondale) using HL7 data exchange standards and SNOMED and LOINC terminologies. Efforts are underway to expand electronic lab exchange capabilities. Public health labs send data related to lab results of reportable diseases electronically. A specific and recent example is the electronic exchange of H1N1 lab results to I-NEDSS (Illinois National Electronic Disease Surveillance System).[14] Currently, electronic exchange of lab data or reporting is not required by law

[11] Centers for Medicare & Medicaid Services. Electronic Data Interchange (EDI) Performance Statistics. (2009). Retrieved from: http://www.cms.hhs.gov/EDIPerformanceStatistics/
[12] (Kate Berry, Senior VP Business Development, SureScripts, personal communication, July 28, 2009).
[13] (Kate Berry, Senior VP Business Development, SureScripts, personal communication, July 28, 2009).
[14] (Brian Nicholson, Manager of Laboratory Information Management Systems, Illinois Department of Public Health Division of Laboratories, interview, July 28, 2009).

KEY EXPECTATIONS	PROGRESS on Key Expectations & STATUS of Domain Planning
	of private (hospital and national) labs. However, some private labs exchange information with the public health labs in Illinois using HL7, including Quest and LabCorp. At present, the public health labs communicate internally between labs and local health departments via the Illinois Century Network (administered by the Illinois Department of Central Management Services). The public health labs are currently on 25 year-old legacy laboratory information systems (LIS), but a centralized LIS will be fully implemented in the next 12 months. When the new LIS system is fully implemented, the public labs will have the ability to provide lab results online.[15] The interaction between the public and private labs and providers with regard to lab ordering and resulting continues to be predominantly a paper process. Nonetheless, Quest and LabCorp have established portals to order and access results.
• Electronic public health reporting (i.e. immunizations, notifiable laboratory results)	The public health reporting systems will be involved in the planning and design of the Illinois HIE. The current systems include: The Illinois Department of Public Health has developed an immunization record sharing system called Tracking Our Toddlers' Shots (TOTS). This system allows public and private health care providers to share the immunization records of Illinois residents. Currently, the system contains more than 12 million immunization records. In addition to keeping track of the shots a child has already received, TOTS forecasts immunization due dates based on the nationally recognized "Recommended Childhood Immunization Schedule." TOTS is designed to help health care providers record, track and report their patients' immunizations. The registry allows physicians to access patient records for information about immunizations administered outside their practices. APORS is a registry of Illinois infants born with adverse pregnancy outcomes, including birth defects, which was developed by the Illinois Department of Public Health. HFS is importing the data from APORS in order to develop quality improvement programs and care management strategies for Medicaid beneficiaries. Similar to the national labs, the public health labs have a web portal for providers available for public health reporting through I-NEDSS (biosurveillance).

[15] (Brian Nicholson, Manager of Laboratory Information Management Systems, Illinois Department of Public Health Division of Laboratories, interview, July 28, 2009).

KEY EXPECTATIONS	PROGRESS on Key Expectations & STATUS of Domain Planning
	Another HIE effort in Illinois is the Department of Public Health's immunization registry named I-CARE (Illinois Comprehensive Automated Immunization Registry Exchange), which will soon implement an electronic data interchange in addition to its web-based program.
• Quality reporting	As an example, one Illinois stakeholder, Walgreens, is already utilizing quality reporting to inform quality improvement activities. Walgreens' ambulatory health care clinics are currently using EHRs equipped with clinical decision support to generate quality reports. Based on these first quarter 2009 reports, Walgreens was able to demonstrate that the clinics' use of antibiotics was appropriate 97% of the time versus the national average of 70%.[16] Other quality measuring and reporting capabilities are being developed. Another example is the Alliance of Chicago Health Centers, which is using dashboard reports from its GE Centricity EHR to answer quality-related questions in order to drive quality improvement. With the Alliance's establishment of a clinical data repository, its providers have been able to create reports that detail quality and can track utilization and health outcomes. It is important to note that these are only a few examples of the health IT capabilities in the state. While there may be other similar examples across Illinois, these health IT programs are independent initiatives. Currently, these instances of health IT adoption in Illinois are not part of a broad-based or coordinated HIE effort.
• Prescription fill status and/or medication fill history	Prescription fill status and medication fill history are components of the e-prescribing system currently envisioned in Illinois. These functionalities alert the provider as to whether or not the patient has filled a medication that was prescribed electronically, as well as provides a list of other medications that are currently active or have been prescribed to the patient in the past. In Illinois as of 2008, SureScripts could provide medication history and prescription benefit information for over 60% of patients.[17] The data for these functionalities is compiled from either claims information from pharmacy benefit managers or the dispense history from retail pharmacies. Enrolled providers can access the information from SureScripts' Master Patient Index (MPI).[18]
• Clinical summary exchange for care coordination and patient engagement.	A number of small-scale clinical exchange efforts have been initiated to varying degrees of success among specific groups of providers. For example, Cornerstone is a system designed to integrate community maternal and child health services including standardized risk assessment, automated

[16] (Don Huonker, Senior VP of Healthcare Innovations, Walgreens, interview, August 18, 2009).
[17] SureScripts. Percent of Patients for whom SureScripts can Provide Prescription Benefit and History Information. (2008). Retrieved from: http://www.surescripts.net/images/EPrescriptionStatisticsImages/3_Percent%20Patient%20Prescription%20Benefit%20Map_5.jpg.
[18] (Kate Berry, Senior VP Business Development, SureScripts, interview, July 20, 2009).

KEY EXPECTATIONS	PROGRESS on Key Expectations & STATUS of Domain Planning
	care plan development, and consolidated referral and scheduling. It is sponsored by the Illinois Department of Human Services. This will need to be addressed in the strategic planning process and will draw on the lessons learned in these initial clinical exchange and care coordination projects.
Leverage existing regional/state level efforts and resources that can advance HIE such as master patient indexes, health information organizations (HIOs) and the Medicaid Management Information System (MMIS).	In February 2009, Illinois implemented a $3 million planning grant program to promote the development of HIE in Illinois. HFS subsequently awarded planning grants in 16 MTAs throughout the state. The primary purpose of the program, which will continue through June 2010, is to further develop the stakeholder participation, provider collaboration and governance necessary to facilitate HIE in the areas and practice settings where patients receive their care. The State will leverage the efforts of the grantees to gain critical information and support for the planning and implementation of the state-level HIE. The State is in the process of its MITA Self-Assessment for the upgrade of its MMIS. The functional requirements of the upgraded system will include interfaces to the state-level HIE. In addition, the State is preparing a Medicaid Health IT Plan to CMS to detail how it plans to administer the Medicaid meaningful use rate incentives in close coordination with the State's overall HIE planning efforts.
Develop or facilitate the creation and use of shared directories and technical services, as applicable for the state's approach for statewide HIE. Directories may include but are not limited to: • Providers (e.g. w/practice location(s), specialties, health plan participation, disciplinary actions, etc) Laboratory Service Providers, Radiology Service Providers, Health Plans (e.g. with contact and claim submission information, required laboratory or diagnostic imaging service providers).	Given that the State systems will be interoperable with the state-level HIE, the State expects these HIT and related efforts will share information and coordinate their activities. The State will also investigate the technical infrastructure requirements with all HIE planning grantees and stakeholders in the 16 MTAs. This will involve available network capacity and include estimates of bandwidth requirements as a state-level HIE is created and evolves. As such, the State is coordinating HIE planning efforts with those of the Illinois Broadband Deployment Council, which is responsible for coordinating ARRA-related broadband initiatives. The State will develop a model for EHR storage that can evolve over time and for value-added services that will encourage and incent participation in the HIE and dramatically improve the quality of health care. Such activities will require significant business requirements gathering and as-is, to-be technology assessments with all planned participants in the HIE.
Shared services may include but are not limited to: • Patient matching, provider	The development of shared services will be addressed in the strategic planning process.

KEY EXPECTATIONS	PROGRESS on Key Expectations & STATUS of Domain Planning
authentication, consent management, secure routing, advance directives, and messaging.	
BUSINESS AND TECHNICAL OPERATIONS DOMAIN: Includes: Procurement, Identifying Requirements, Process Design, Functionality Development, Project Management, Help Desk, Systems Maintenance, Change Control, Program Evaluation, Reporting, Operational Responsibilities. Some may fall to the entity or entities implementing the technical services needed for HIE; May be different models for distributing operational responsibilities.	
Provide technical assistance as needed to HIOs and others developing HIE capacity within the state.	Most of the State's efforts in this area to date have been directed to the HIE Planning Grants Program recipients in the MTAs throughout the state. Several surveys have been conducted to identify the needs of providers throughout the state in order to deploy the necessary tools and resources for HIE capacity development.
Coordinate and align efforts to meet Medicaid and public health requirements for HIE and evolving meaningful use criteria.	For the past two years, the State has convened an interagency workgroup comprised of leaders within State agencies that have program and policy needs related to health IT. This body will continue to share information and coordinate activities among the agencies and respective private sector stakeholders to ensure that as the State's plans for HIE implementation are developed and move forward, related projects are consistent with those efforts to the greatest degree possible. The OHIT, in coordination with the State Medicaid Agency, the Department of Public Health and local health departments will align efforts to ensure a consistent approach to encouraging and monitoring meaningful use criteria as those criteria evolve. Because rate incentives for adoption of electronic health records are a key factor in achieving widespread adoption, it is critical that plans to implement rate incentives are coordinated across different payers and consistent with the meaningful use criteria.
Monitor and plan for remediation of the actual performance of HIE.	The plans to monitor and plan for the performance of HIE throughout the State will be the responsibility of the OHIT and an external program evaluator designated to perform these functions.
Document how the HIE efforts within the state are enabling meaningful use.	The State's efforts to enable HIE will be tracked and monitored by the OHIT, the Medicaid Agency and the HIE Advisory Committee. The efforts will be defined in greater detail in the Strategic Plan.
Legal /Policy Domain: Create a common set of rules to enable inter-organizational and eventually interstate HIE while protecting consumer interests. Mechanisms and Structures: Address legal and policy barriers and enablers related to electronic use and exchange of health information Includes: Policy frameworks, privacy and security requirements for system development and use, Data sharing agreements, Laws and regulations and multi-state policy harmonization activities.	

KEY EXPECTATIONS	PROGRESS on Key Expectations & STATUS of Domain Planning
Identify and harmonize the federal and state legal and policy requirements that enable appropriate health information exchange services to be developed in the first two years.	Since June 2006, Illinois has been an active participant in the Health Information Security and Privacy Collaboration (HISPC). As part of these multi-state collaborative efforts, Illinois has identified best practices and challenges in addressing privacy and security issues related to HIE. Along with other state partners, Illinois has developed consensus-based solutions that protect the privacy and security of health information and assisted in the development of plans to implement these solutions. In the successive phases of HISPC, Illinois joined a multi-state collaborative to create HIE specific forms including, a notice of privacy practices, consent forms for use and disclosure of protected health information and an authorization for research. Illinois has further evaluated the consent options for HIE at both the intra-state and inter-state level. The depth of knowledge gained from these important initiatives adds to the overall readiness of the State to enter into more advanced HIE planning and implementation phases.
• Establish a statewide policy framework that allows incremental development of HIE policies, enables inter-organizational HIE, and meets other important state policy requirements such as those related to public health and vulnerable populations. • Implement enforcement mechanisms. • Minimize obstacles to data sharing. • Ensure policies and legal agreements needed to guide technical services prioritized by the state or SDE are implemented and evaluated as a part of annual program evaluation.	The State anticipates legislation to create a public-private entity to oversee the operations of the state-level HIE. The State will research and develop necessary legal documents and procedures including data-use agreements between and among public and private stakeholders, business-use agreements, vendor contracts and employee policies and procedures. The State expects to undertake an additional legal review of existing federal and state privacy, security and data use law and policies, conduct a thorough assessment of the legal requirements for the public-private entity, and obtain all necessary legal opinions to ensure that the state-level HIE operates at a high standard of accountability and oversight.

b. Challenges to be Addressed

Despite implementation successes in Illinois, barriers to EHR adoption persist. Commonly cited and persistent barriers include high costs, little evidence surrounding return on investment (ROI), behavioral and workflow considerations, competitiveness and trust issues among larger institutions, and privacy concerns. There are other numerous barriers focused primarily on technical issues that affect stakeholders.

Difficulties in obtaining technical assistance. Providers and other entities interested in adopting EHR often find challenges in obtaining technical assistance. This includes difficulties in locating as well as paying for services related to implementation and maintenance resources for the technology and training/education resources for providers/staff.

Workflow issues. Workflow issues can pose a significant barrier for utilization of a health IT solution. Unless the health IT functionality is built as seamlessly as possible into clinician offices, a great potential exists for it not to be utilized.

Slow adoption of standards for EHRs. Adoption of accepted standards that are endorsed by HL7 has been slow among vendors. Many ambulatory practices do not want to purchase a system to find later that system selected by lab/hospital will not connect and because of the widespread use of proprietary codes in the system. In addition, the use of different versions of standards for the exchange of information, such as HL 7 version 2.x versus HL7 version 3.0 for lab data exchange, can pose a problem.

Prior investment in legacy information technology systems can actually be a significant barrier in terms of cost and effort. Early adopters often face the challenge of deciding between the advantages of an interoperable system versus the costs of upgrading or implementation of a new system. In Illinois, as an example, there are about 20 health systems still using the Shared Medical System (SMS).

Uncertainties surrounding meaningful use and limitations in currently existing technologies in areas such as quality reporting and clinical decision support, for example. Until a better understanding of meaningful use and appropriate certification criteria has been established, some entities may be unwilling

to make an investment in an EHR system for fear that it will not be sufficient to allow the provider to qualify for rates incentives.

Connectivity issues, especially in rural areas remains a strong barrier to adoption. Many rural providers still transmit information on T1 lines with low bandwidths (1.5 Mgbps), which results in very slow transmission of data.

Legal requirements and stakeholder concerns with regard to sharing health information. Many barriers to HIE implementation focus on concerns around trust, competition, security, and the ability to share health information. For example, the Illinois Hospital Association had indicated resistance to the concept of creating a central data repository for HIE.[19] In addition, states have different laws and regulations related to patient consent and the sharing of health information, and there are multiple federal and state laws and regulations that may impede HIE, especially across state lines. For example, multiple federal and state legal requirements for lab certification (e.g., out-of-state lab testing) and sending of lab information can hinder electronic lab exchange efforts, including the Health Insurance Portability and Accountability Act (HIPAA) and the Clinical Laboratory Improvement Amendments (CLIA).

Despite the barriers and challenges, there are opportunities for promoting health IT adoption and HIE participation in Illinois. With respect to different types of health IT and health care settings, there are steps that Illinois can take to reduce the reluctance or inability to adopt. Through the environmental scan, particular opportunities and keys to success have been identified including: funding and sponsorship, clarification of requirements, and connectivity improvements.

Funding and Sponsorship. Funding and sponsorship opportunities exist in Illinois through private players. Through partnerships with hospitals, smaller providers have been able to acquire a health IT solution that is subsidized or at a much reduced cost. Furthermore, certain entities have created strategic alliances with vendors to implement a health IT solution, such as Swedish Covenant Hospital and Meditech. In addition, efforts by payers, such as the e-Rx Collaborative sponsored by Blue Cross

[19] (Pat Merryweather, Senior Vice President, Illinois Hospital Association, interview, August 5, 2009).

Blue Shield of Illinois and United Healthcare, can provide additional resources to promote health IT adoption.

Clarification of Requirements and Development of Implementation Models. With the clarification of meaningful use requirements, standard approaches to implementation can be developed. Organizations, such as the Alliance of Chicago Community Health Services, have already deployed a consistent implementation approach to other community health centers based on the lessons learned and best practices identified. Similarly, the experience of public health labs exchanging data electronically with OSF (Misys LIS) can serve as a model for other organizations.

Building HIE Capacity. The Illinois HIE Planning Grants program can assist in developing the support structures necessary to promote data sharing capabilities through the MTAs.

Improved Connectivity. Broadband expansion activities through the Illinois Rural Health Net and other organizations can help provide clinicians in rural areas with the capacity to connect to the internet and to access and exchange health information electronically. There is also an opportunity for increased wireless connectivity through the initiative to create a wireless network through the City of Chicago's Digital Excellence Initiative.[20,21]

With strong stakeholder support and vision, the challenges and barriers to HIE and health IT can eventually be overcome. ONC opportunities through the State Health Information Exchange Cooperative Agreement and HIT Regional Extension Center Program can further health IT and HIE in Illinois.

II. Proposed Project Summary

A. STRATEGIC & OPERATIONAL PLANS

The ONC State HIE Planning and Implementation Cooperative Agreement provides a tremendous opportunity to rapidly accelerate implementation of a statewide HIE. The development of a

[20] City of Chicago. Digital Excellence Initiative. Retrieved from: http://egov.cityofchicago.org/city/webportal/portalEntityHomeAction.do?entityName=Wireless&entityNameEnumValue=153&Failed_Reason=Invalid+timestamp,+engine+has+been+restarted&com.broadvision.session.new=Yes&Failed_Page=%2fwebportal%2fportalEntityHomeAction.do

[21] Chicago 2016. Retrieved from: http://documents.chicago2016.org/pdf/bidbook/VOLUME_3.pdf

plan will require a focused, complex, and thorough planning process, to be initiated upon completion of the Cooperative Agreement and will be submitted to ONC for approval within six months.

The Strategic and Operational Planning process will be managed by the State Health IT Coordinator, Laura Zaremba (currently Deputy Director, HFS) along with a State Planning Group that will oversee the process comprised of Michael Gelder, Senior Health Policy Advisor to the Governor; Greg Wass, State Chief Information Officer; Theresa Eagleson, State Medicaid Director; Michael McRaith, Director, Department of Insurance; David Carvalho, Deputy Director, Department of Public Health; Mary McGinnis, Strategic Sourcing Manager, HFS; and Ivan Handler, Chief Information Officer, HFS. The State plan will respond to the ONC requirements and will outline a comprehensive set of activities to achieve statewide HIE and enable Illinois providers to demonstrate meaningful use to improve the delivery of health care and assist providers to receive the maximum rate incentives available. The OHIT will select a planning vendor(s) to assess provider and stakeholder readiness across all five domains and identify the specific set of activities required to develop an operational HIE by 2011. One competitively procured planning vendor will focus on the technical requirements. The selection process will include the participation of the existing HIE Advisory Committee and Work Groups, as well as focus groups of primary care and other providers, hospitals, universities, FQHCs, consumers, MTAs, payers, businesses, community based organizations, local governments, IT vendors and state agency representatives. In addition, the State anticipates securing a vendor to conduct a detailed assessment of HIE capacity and readiness in all 16 MTAs. An environmental scan and several surveys of key stakeholders have been recently conducted that will be incorporated into the planning process.

The underlying principles of the Illinois HIE effort will be to ensure that patients have safe, secure access to their personal health information and the ability to share the information with others involved in their care; providers have timely and accurate clinical information available at the point of care; an open collaborative, public-private process exists to support widespread EHR adoption and a sustainable statewide HIE; health care outcomes are improved and costs are reduced; State HIE efforts are

integrated and synchronized with federal and other state planning efforts; accountability and transparency is assured; and public and population health is improved.

The State of Illinois is submitting this application solely on behalf of Illinois, but does intend to pursue opportunities for cooperation with neighboring states as our respective plans for state-level HIE progress. Illinois conducted a site visit to the Indiana Health Information Exchange to examine its technology and business model and has had discussions with staff from the Indiana Medicaid program to discuss its approach to promoting HIE. Illinois also has been in frequent contact with Michigan regarding its planning grants program, and in fact, modeled the Illinois planning grants on the Michigan program.

The framework for the Illinois HIE assumes full interoperability of all data. The State will specify a complete set of syntactic and semantic standards, meaning all data in the HIE will be exchanged among different participating entities without need for any reformatting or remapping; all services the HIE provides will act on data in a uniform and predictable way. Any service or software that is an external source of HIE data will ensure the data provided to the HIE conforms to all semantic and syntactic standards before it is released to the HIE. The HIE will conform to all NHIN technical standards or recommendations including Connect, HL7 CDA and others as they are announced. Additionally, the HIE will be composed of high availability services that will be available 24 hours a day, seven days a week with the highest uptime that is realistic during the time they are functioning. The HIE services will provide for disaster recovery and utilize full geographic redundancy for both disaster recovery and business continuity. HIE services will be accessible to all of its members via high bandwidth connections to ensure critical data is always available instantly. HIE services will guarantee privacy and security to the level demanded by both state and federal law including complete audit trails of all information accessed.

A key principle in driving the implementation of Illinois' technical infrastructure is "design globally, implement locally," a federated approach. This means that the infrastructure is being built upon common statewide information policies, standards, and protocols – and utilizing the MTAs, there is a regional "bottom up" implementation approach and care coordination to allow local communities and

regions to structure their own efforts based on clinical and patient priorities. This framework promotes innovation and accountability across the full range of Illinois' diverse health care delivery settings – from solo physician offices and community health centers to large academic medical centers and nursing homes, and from the City of Chicago to rural communities – with vastly different market conditions and health care needs. Implementation will be divided into "core" and "peripheral" services and will roll out geographically by MTAs (and in consolidating MTAs with similar priorities). The planning process will take place in overlapping phases of both planning and implementation. That is, a planning phase will lead to an implementation phase and the next planning phase will occur concurrently. At the end of each phase of planning and implementation the ongoing evaluation will identify "lessons learned" and will be applied to the subsequent planning and implementation phases.

See Appendix A for a partial list of issues that each domain will address during the Strategic and Operational planning process.

B. Compliance with Privacy & Security requirements for Health IT (Section I.F.2.)

Illinois, through the Health Information Security and Privacy Collaboration (HISPC) project has made progress in developing some of the requirements for an effective HIE. The public-private partnership that came together during the work of the Taskforce[22] was intent on facilitating the creation of a state-level HIE by providing recommendations on privacy and security policies for its governance structure. The HISPC – Illinois II project was developed to accomplish this task.

HISPC – Illinois II determined that three overarching principles would form the basis for the privacy and security policies of a state-level HIE. These principles are (1) a state-level HIE shall meet all applicable federal and state privacy and security laws; (2) privacy and security policies of a state-level HIE shall be understandable and clearly explained to the public how health information is to be protected; and (3) the governance structure of a state-level HIE shall adopt privacy and security policies consistent with standards promulgated by the NHIN.

[22] Created by Public Act 94-646, effective Aug. 22, 2005. Report issued December 27, 2006.

The HISPC – Illinois II Legal Work Group developed several forms and analyzed state legal barriers to HIE. The Legal Work Group developed: an outline of the issues to be addressed in the "Model Uniform Patient EHR/HIE Consent Form;" a draft "Model Uniform Patient EHR/HIE Consent Form" for review by stakeholders; a "Model Uniform Patient EHR/HIE Consent Form;" and a plan to address the dissemination of the "Model Uniform Patient EHR/HIE Consent Form" to health care providers and to encourage its use by these providers.

The development of the forms serves as a foundation for the HIE. Additional legal documents will need to be created. These will include all procurements, contracts, confidentiality agreements and policies, and trust agreements necessary for the HIE to perform operations.

C. Communications Strategy with Key Stakeholders

Illinois has included a wide net of stakeholders in the HIE and other IT planning efforts. It is recognized that throughout the planning and implementation process, that OHIT must have a communications strategy that is effective in reaching the impacted stakeholders. Currently, there is a HIE website (www.hie.illinois.gov) that posts all HIE Advisory Committee and Work Group minutes and agendas in addition to information about the MTAs. The website will continue to be a key communication tool and will be enhanced to include a listserv. The MTAs have become an essential source of communication at the grassroots level and will continue to be a source of crucial information to spur engagement and participation in local and regional efforts. OHIT will develop provider and consumer-centric materials geared towards educating, engaging and ensuring an understanding of how interoperability can fundamentally change the way health care information is accessed including the potential benefits and risks. The materials, templates or tools will be customized for use by clinicians, consumer groups and other organizations within the state. In addition, HFS will disseminate Medicaid provider notices to apprise them of key developments at various milestones along the way. The Strategic and Operational Plan will provide greater detail on the Illinois HIE communications strategy.

D. Community Based Organizations and Medically Underserved

To date, the HIE effort has been coordinated by HFS, the state agency that oversees the Medicaid program, and has included consultation with the major safety net providers in the State of Illinois, such as the Cook County Health and Hospital Systems (largest provider of uncompensated care in the state), local health departments throughout the state, community hospitals in both urban and rural areas, FQHCs and physician and provider representatives. Direct participation and leadership from the major safety net providers, as well as continued coordination with the State's Medicaid program, will ensure that the HIE is designed to target the medically underserved, special populations (disabled, elderly, foster care, newborns, etc.), persons with mental and substance use disorders, long term care, and the limited English proficient consumer. These populations have also been represented on the HIE Advisory Committee and supporting Work Groups by non-profit and advocacy organizations, such as the AARP and the Illinois Maternal and Child Health Coalition. Moving forward, the State recognizes the importance of consumer involvement in the process, the planning for which has already begun. A Consumer Education Work Group has been formed to provide recommendations to the HIE Advisory Committee regarding statewide strategies to inform patients about the use of electronic health records, with particular focus on message delivery to medically underserved populations. In addition, consumer advocacy and community-based organizations will have designated representatives on the governance body of the public-private entity that operates the state-level HIE to ensure continued representation of special populations served by these groups.

E. Incorporation of Stakeholders into Planning and Implementation Activities

The State of Illinois has worked in close cooperation with a broad-based group of health care and other stakeholders throughout the state in our HIE efforts. There are two main mechanisms through which stakeholder participation has been formally structured. First, through the HIE Advisory Committee whose membership includes representation from hospitals and universities, businesses, FQHCs, physicians, nursing homes, insurers, advocates, pharmacies, rural health providers, legislators, the City of

Chicago public health department, state agencies and the Governor's Office. The second grassroots mechanism is through the planning grants to the 16 MTAs throughout the state. These stakeholders recognize that the facilitation of HIE is strongly in the public interest as a powerful tool to transform the delivery of health care. (See Letters of Support from key stakeholders.)

During the Strategic & Operational planning process, the HIE Advisory Committee, and its work groups, as well all key stakeholders, will be involved in the process. The planning vendor will conduct face-to-face interviews, focus groups, surveys and employ other feedback mechanisms to ensure the broadest participation and buy-in for the vision and technological infrastructure for the Illinois HIE. Other groups that will be included are the Governor's Broadband Council, the Rural HealthNet, the Department of Commerce and Economic Opportunity, the State's ARRA Work Group on workforce development, and grantees from the MTAs that also have workforce development grants, such as the Metropolitan Health Care Council and ConnectSI. The State has been in contact with each of the applicants from Illinois for the Regional Extension Center grants and plans to actively engage the Centers in stakeholder planning. The State recognizes the need to play a continued leadership role in determining the path and optimizing the model for exchange of information but not without the collaboration of all impacted stakeholders, including consumers.

III. Required Performance Measures and Reporting

Illinois recognizes the importance of identifying and defining the set of performance measures to be tracked during the Strategic & Operational planning process to assure the highest level of performance, starting with the implementation phase. The set of performance measures to be monitored will satisfy the requirements of the Government Performance Reporting Act of 2003, ARRA requirements, additional ONC guidance as well as locally defined indicators. Specific ARRA reporting requirements will be the responsibility of OHIT staff, in particular the Chief Financial Officer, working closely with the Office of the Governor and impacted agencies to ensure a complete and accurate accounting of the funding. The OHIT Program Director will have primary responsibility for developing the performance measures and

impact assessment of this ARRA program and will work closely with an expert evaluator to be retained by OHIT. Performance reporting will be made publicly available. The measures will be grouped by domain and allow the OHIT to monitor on-going progress. The specific indicators will be included in the Strategic and Operational Plan.

IV. Project Management

Responsibility for advancing the State's HIE planning efforts, including the participation in the Cooperative Agreement with the federal government pursuant to this ONC program will be assumed by the OHIT and directed by the State Health IT Coordinator. Day-to-day responsibility for monitoring the State's HIE efforts, including direction of the HIE Strategic and Operational Plan development and implementation, monitoring progress toward goals and meeting required milestones, production of regular reports, maintenance of the State's HIE web site, adherence to all reporting requirements, and communication with all HIE stakeholders, the ONC and other federal agencies and other states will be carried out by OHIT staff. The OHIT will engage the planning vendors to develop the State Strategic and Operational Plan and to assist the State in developing a process to monitor progress on project tasks and ensure timely achievement of milestones. OHIT staff will be responsible for regular, public reporting of progress toward the State's HIE goals.

The State is preparing to introduce legislation in early 2010 to create a public-private entity (i.e. State Designated Entity-SDE) to assume responsibility for the long-term operation of the state-level HIE. Following the creation of the SDE, as each implementation phase is completed, the OHIT will transition the day-to-day operations to the SDE. The SDE will incrementally assume operational responsibility and support functions for all functions identified in the State's Strategic and Operational Plan. The OHIT will continue to direct the State's participation in the state-level HIE, and continue coordination of State government related HIE activities. OHIT staff will continue to provide strategic and operational support to the SDE and be responsible for fulfilling the obligations of the Cooperative Agreement for the duration of the four-year project period.

V. Evaluation

Achieving statewide HIE goals is a systems-focused effort, involving multiple stakeholders, and a series of incremental processes. In addition to ONC guidance, additional work needs to be done to define the measures and mechanisms that will be used to assess short term effects and the systemic impact of HIE development efforts. During the Strategic & Operational planning process the State of Illinois will define a robust evaluation program. The goal of the evaluation program will be to measure the economic value and impact on health care quality of the HIE investment. The OHIT will continuously assess the initiative's influence on providers and consumers to determine what is working and what needs improvement. The budget allocates a portion of the funding to an independent evaluation process, including the retention of a dedicated program evaluator. The long-term funding model will include a mechanism to pay for ongoing evaluation and analysis. The Illinois program evaluation will coordinate with national program evaluation to ensure continuity in data gathering and reporting.

VI. Organizational Capability Statement

This application is submitted on behalf of the State of Illinois by HFS. Upon creation of the OHIT by the end of 2009, all duties, responsibilities and resources associated with this grant program and the Cooperative Agreement will be transferred to the OHIT. An organizational chart and detailed position descriptions of OHIT staff are attached to this application. The current State Health IT Coordinator has served in a leadership role in the State's health IT initiatives since mid-2007. The State Planning Group comprised of Governor's Office and agency staff leaders will work closely with the OHIT to ensure coordination with other relevant State health care initiatives. Key staff of OHIT will include the State Health IT Coordinator, a Medical/Clinical Quality Director, Legal Counsel, Chief Technology Officer, Program Director, Procument Officer/Contract Manager, and Chief Financial Officer. The OHIT will be staffed by highly qualified individuals with strong leadership skills and significant experience in health care delivery, clinical quality, health IT, and complex public and private health care transformation initiatives. The vendor(s) engaged by the OHIT to assist in the development of the State's Strategic and

Operational plans will have extensive experience in health care planning, health care market research and rate development, health IT and broad, diverse stakeholder engagement. Vendors will be required to demonstrate the ability to deliver timely, measurable results in highly dynamic and resource- challenged environments.

The SDE to be created to operate the state-level HIE will be charged with the responsibility, in cooperation with the State OHIT, for implementing a financially sustainable model to ensure the active participation of all public and private-sector health care stakeholders and the successful operation of the HIE after the phase out of initial public funding support.

APPENDIX A – STRATEGIC/OPERATIONAL PLANNING APPROACH

GOVERNANCE DOMAIN

During the Strategic & Operational Planning process the following issues/questions will be addressed:

- What will be the specific makeup of the governing body of the statewide public-private entity that will run the state-level HIE?
- What constituencies and stakeholders must be represented and in what proportions? Will the governing body of the public-private entity include representatives of the MTAs?
- What will be state government's representation on the governing body?
- Who will manage the public-private entity on a day-to-day basis?
- How will the public-private entity be regulated?
- How will the public-private entity monitor and enforce privacy and security laws and requirements?
- How will information about the operation and oversight of the public-private entity be made available to the public?
- How will the OHIT ensure that the operation of the state-level HIE is coordinated with the State's administration of Medicaid rate incentives and other state government HIE activities?
- Will the public-private entity provide financial support to the Regional Extension Centers? How will the public-private entity interact and coordinate its activities with the Centers?
- How will the governing bodies of any local or regional HIEs interact with the public-private entity?
- Who will be responsible for ensuring that the public-private entity operates in accordance with federal initiatives and requirements?
- How will the public-private entity interact with other states and a national health information exchange?

FINANCE DOMAIN

During the Strategic & Operational Planning process the following issues/questions will be addressed:

- **Can the service generate revenue?** Certain services have the potential to generate revenue from fees collected directly from stakeholders, which they are willing to pay, if the services either create

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efficiencies that improve productivity or provide a more cost-effective option than an existing service. From a financial perspective, if these services have sufficient stakeholder interest and commitment, they should be prioritized to achieve sustainability.

- **Is there a rationale for public financing of the service?** While a service may not generate sufficient revenue, if it increases the safety, efficiency and/or efficacy in health care delivery that will be received by the general public, a case can be made for need. In such cases and when a particular service is for the public good in a particular region of the state, especially if under-resourced or if the area has unique challenges, the state government will be pursued as a possible source of funding. City and county governments may also be approached for support where a service is requested and serves the needs of a specific region. Additional federal funding may also be available for specific types of providers, including those practicing in rural and underserved settings, or for particular services, such as telemedicine and HIV/AIDS disease management.
- **Is there a rationale for private financing of the service?** For services seen as a public good, private financing options may be pursued. In addition to outright financing of the service, private entities may consider opportunities to match state or federal government allocations of funding. Organizations that see a benefit of the service to their stakeholders or to their mission will be actively pursued as a potential financial source. Foundations and philanthropic organizations that support the HIE effort in Illinois can provide funding. Stakeholders, including payers and health systems, can also be a source of funding (depending on the perceived value of the service) by providing cash or in-kind support. Strategic relationships with vendors could reduce costs or assist with financing of new technological capabilities. The State of Illinois has had preliminary discussions with vendors, such as Allscripts and Cerner, to assess the opportunities for their involvement in promoting health IT adoption efforts. Debt financing options may also provide funding for HIE efforts through issuance of bonds or financing from lenders.
- **For each service, what is its cost or value?** Consideration of the cost and the value of a particular

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service need are important when discussing financial implications. Based on input from the Financial Advisory Subcommittee and experts, conducting modeling based on market research will help determine a pricing strategy that will best serve the long-term sustainability of the HIE.

- **What is the cost-based price of each service?** For each service, a model should be developed to assess the costs of each service and to set a price accordingly. In determining service cost, consideration is given to the initial implementation costs and ongoing costs. Initial costs include the purchase or development of technology, infrastructure creation to support the technology and resources, including staff and time for the implementation process. Ongoing costs include technology maintenance, hardware and software upgrades, and additional resources necessary to support the service expansion of capacity.
- **What is the value-based price of each service?** The value-based price of a service is determined by the amount that stakeholders are willing to pay. The first consideration is whether the service is replacing an existing service or providing a new function, thus the cost of the activity for stakeholders with and without the service needs to be determined. To generate revenue, the service must be cheaper than the current service or provide a new service that creates efficiencies for the stakeholder. Even if monetary savings seem apparent, this process should address issues that affect productivity, such as workflow.
In determining the price, the service demand should also be considered. Initiatives that promote use of a particular functionality or service can affect the value-based price. Providers are likely to be more willing to pay for services that will assist them in demonstrating meaningful use and obtaining the financial incentives available.
- **For each proposed service, what are the possible models for generating revenue?** The appropriate model will depend on the determination of who receives the most value from a particular service or services. Various models exist and a service-by-service determination should be made regarding which one is appropriate, thus ensuring that no particular stakeholders are being overburdened. Some possible models for each proposed service include: ***Transactions-based fee:*** Depending on the

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service offered, a fee can be assessed on each transaction that utilizes the HIE service.

Service-based fee: A fee for a service or bundled services may be considered. Often, in this model, participating entities pay based on size and/or projected volume of use of the service. ***Assessment on a stakeholder group:*** If the service is seen to benefit a particular stakeholder group, a fee may be imposed on them to support the cost of the HIE. Such action would require legislative intervention. ***Taxes:*** If a service has the potential to improve the safety and efficiency of health care overall, can be seen as for the public good, and will primarily benefit the general public of Illinois, taxing may be considered. Another possibility is the creation of a tax deduction for service or transactions fees assessed or other tax advantages to entities participating in the HIE, which also would require legislation.

TECHNICAL INFRASTRUCTURE DOMAIN

During the Strategic & Operational Planning process the following issues/questions will be addressed:

For Strategic Plan:

What are current practices nation-wide? A planning vendor will research different approaches and their strengths and weaknesses. The planning vendor will gather requirements from the 16 MTAs for the services that they consider to be a priority. The output of this step will be a draft set of services that should include the following:

- Master Patient Index or equivalent functionality.
- Master Provider Index or equivalent functionality and record locator service.
- Clinical summary data (HL7 CDA) repository or repositories.
- Eligibility and claims transactions and potential services that generate claims from clinical data.
- Electronic prescribing and refill services and prescription fill status and/or medication history.
- Lab ordering and results.
- Consent management (needed for HIPAA compliance).
- Public health reporting including immunizations and laboratory results.
- Decision support meaning a framework where preselected data can be submitted with specific conditions and responses indicating action alternatives with potential weightings or priorities received.
- Quality reporting.

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- Population health monitoring meaning that health measures will be applied across different populations, the measures tracked and the results made available to the decision support framework.
- Patient decision support and education where patients can have access to their medical record over the web and get health education on a variety of topics, especially wellness.
- Interface services for the State's MMIS will be defined. Because the State of Illinois is currently creating its MITA State Self-Assessment, the MMIS planning will be coordinated with the creation of the HIE Strategic Plan via the OHIT and HFS.
- Services to other state agencies such as Public Health will also be defined. The OHIT, in cooperation with internal and external stakeholders, will determine which services are needed by other state agencies and their priority.
- The OHIT and the multi-stakeholder planning process will determine requirements for exchange services with federal programs and agencies such as Medicare, the VA and CDC.

How will the state-level HIE standards be defined? The HIE will adopt the interfaces (in particular the WSDL files and their associated XML schemas) from the ONC's Connect project. In this step, the planning vendor will define any additional exchange standards that are needed to implement and maintain the HIE services. The plan will identify any areas with potential conflicts (such as EDI claims standards – they are not based on XML) with the proposed standards and offer resolution alternatives. Any proposed standards outside of Connect will need to conform to existing federal standards where possible and with other nationally recognized standards bodies such as HL7 and NIEM. The HIE will adopt all and remain current with all relevant federal and state privacy and security standards. This will include provider and patient authentication and the secure routing of HIE messages. Finally, the HIE will join the NIEM. In particular, the HIE will work cooperatively with other interested NIEM members to define Information Exchange Planning Documents to cover areas of health care that are currently outside the NIEM boundaries. The deliverable for this step will be an initial set of standards with a proposed timeline for adoption of other standards as they become relevant or defined.

How will the MTAs be configured? The 16 MTAs may be combined into fewer groups to make the

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implementation of the HIE less complex. The configuration should allow the groups to easily cooperate in the implementation of the different phases based on criteria such as populations served, existing relationships between MTAs, environmental (urban, suburban, rural, population density, etc.), existing and proposed bandwidth, existing technology, relationships with payers and technology vendors as well as other considerations that will come from discussions with the MTAs themselves. The goal is to ensure implementation success.

What will be the HIE infrastructure? The state-level HIE will be a shared resource for all of the individuals and institutions involved in health care in Illinois. Infrastructure refers to data centers, software and wide area networks (optical and wireless). Arrangements may be made with individual members to have ownership of specific elements of the HIE in order to guarantee that member data remains under the member's control. In order to guarantee sustainability, the infrastructure will need to be affordable both in its implementation and maintenance over the long term. It will also have to be scalable so that as the volume of data exchange increases, the HIE infrastructure will be able to keep up without the need to define a new architecture or move to a new platform. A strategy for the creation of business continuity plans for all member organizations will be part of the Strategic Plan. This is to ensure that any interruptions of the operation of the HIE will not adversely affect the functioning of any of the members. Newer infrastructure solutions such as cloud data centers and cloud based applications need to be seriously considered by the planning vendor since they may dramatically lower cost and increase efficiency. Bandwidth utilization modeling will be needed to ensure that the bandwidth available to HIE members will be adequate over time. This step will involve coordination with other state agencies that are responsible for the deployment and maintenance of wide area networks. The deliverable for this task will be an HIE infrastructure architecture recommendation with a plan for the creation and validation all of the business continuity and disaster recovery planning that will need to accompany the architecture.

How will commercial-off-the-shelf and open source software be used? The planning vendor will

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research software that is available to construct the HIE that conforms to the HIE standards. Software that is aimed at specific functionality as well as more general software such as rules engines, workflow engines and data translation and mapping software will be considered. Software as a Service (SaaS) will also be considered. Software components will be considered on the basis of performance and reliability, their implementation costs, licensing costs, support costs and other ongoing costs, maintenance and upgrade costs, ease of configuration and ease of integration with other components. A component of this task will be to specify the types of software or services that will be owned or leased by members, not by the HIE itself. This may include software adapters that transform data from a specific EMR into the standard HIE format and vocabulary or software that encrypts privately owned data stored within the HIE. These decisions will be made in cooperation with the MTAs. The planning vendor will develop RFIs and visit sites where solutions are deployed and to reach out to other states that deploy specific software. The deliverable for this task will be a requirements document or documents that describe the requirements for software and/or services for the HIE including how the software fits into the HIE architecture as well as the business continuity and disaster recovering planning processes.

How will IV & V be addressed? The planning vendor will create an Independent Verification and Validation plan that conforms to the IEEE 1012-1998 standard for all of the software components.

For Operational Plan:

Task 1 – Select infrastructure and IV&V vendors

The planning vendor will assist in the development of projects scope for infrastructure and IV&V. This should be initiated quickly after the HIE standards and infrastructure have been approved by the OHIT. The evaluation teams will be selected by the OHIT in cooperation with the stakeholders and the State Procurement Office.

Task 2 – Create the implementation plan

The implementation plan will be introduced in two sections, core phases and peripheral phases. The planning vendor will determine the number of phases as well as the tasks for each phase and the overall schedule. The OHIT will approve the plan. At the end of each phase, subsequent phases (separately for core and periphery) will be re-estimated and re-scheduled. This will allow the plans to change as the

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implementation team gathers experience and new circumstances arise. The overall plan as well as each phase will include a risk assessment and risk mitigation plan. The risk assessments and mitigation plans will be re-assessed at the completion of each phase at a minimum. Based on changing situations, they may be re-assessed during phases. The OHIT will approve all risk assessments and mitigation plans. Each project plan for each plan will have a traceback document that shows the requirements (directly or indirectly) that each task is addressing. All implementation plans will include both user acceptance tests (UAT) as well as standards compliance tests (SCT). The UATs will be created in conjunction with the OHIT, stakeholders and selected members of the HIE to ensure the HIE meets requirements state-wide. The SCTs will be carried out in conjunction with the OHIT, stakeholders, selected members of the HIE and selected representatives of the standards bodies or their designees. A phase will not be accepted as complete until it has passed both the UAT and SCT testing and has been accepted through the release of formal acceptance documents. Any change in plans, for whatever reason, will trigger a change order which must be approved by the OHIT before the change can become part of the plan. The structure and content of the change orders will be determined at the time of contract negotiation with the implementation vendor. The core phases will be identical for each MTA group. The planning vendor will determine the sequence of the phases with regard to the MTA groups. It is possible that more than one MTA group will implement a phase at the same time. This will depend upon resource availability as well as the circumstance of each MTA group.

BUSINESS – TECHNICAL OPERATIONS DOMAIN

*During the Strategic/Operational Planning process the following issues/questions will be addressed***:**

- Will the State's procurement process allow for the expediency required to accomplish the necessary procurements for this initiative in a timely manner? For example, procuring a strategic planning vendor.
- Will the State have adequate technical resources to begin the process of identifying key requirements through planning and assessment immediately?
- Will the plans that are being formulated accommodate plans that need to be adjusted or amended?
- How will the State develop and present an effective and compelling strategy to engage highly-resourced providers that have the capability to participate in local and state exchanges.
- What are the steps the State needs to take to develop the framework for these shared services and

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repositories? What are the legal ramifications for doing so? How will the State accommodate the fact that needs for shared services will vary according to the needs of the various regions of the State, at different times according to the stage of HIE development in a particular geographic area/MTA? How will the State accommodate the regulations and policies from other states regarding shared services and repositories? (Some of these questions may be addressed in the legal domain.)

- How will the State insure that the data transactions are secure, especially considering the wide diversity of stakeholders that will be transmitting data? Stakeholders include solo practitioners and small physician practices, FQHCs, Critical Access Hospitals and other historically poorly resourced entities that may have inherent challenges in meeting the resource requirements to insure secure transactions.
- How will the State address the need to develop standard operating procedures for the HIE that is anticipated to change and develop over time?

LEGAL - POLICY DOMAIN

During the Strategic & Operational Planning process the following issues/questions will be addressed:

- Assess and establish the legal authority for OHIT including the source of authority or power.
- Assess and establish the legal authority for the HIE, and the choice of the legal entity. Options include but are not limited to, a governor-appointed body, state legislative mandate, using some current entity/structure or permitting providers to establish a working model of a provider supported HIE.
- Will the enforcement entity be housed within the HIE or in a separate office, including what role would the Attorney General have in HIE enforcement?
- Legal and policy staff needed to establish governance structure, (e.g., Board, decision-making group).
- Potential legislative drafting for the OHIT and HIE structures. It should contain purpose, governance structure, and source of budget. Including what legal agreements need to be drafted to support the HIE.
- Mechanisms for an approach for transparency in HIE operations, including HIE meetings and decision-making, and access to documents.

LEGAL - POLICY DOMAIN

- Ongoing legal questions include examining the state law barriers to the HIE, to expand upon the research performed by HISPC - Illinois, the issues of noncompliance with federal and state law requirements of the HIE, and how enforcement, (by state action) will occur over the federal organization.
- Planning groups should examine the requirements for an inter-organizational agreement and other memorandum of understanding.
- Staff will need to review and modify DURSA agreement to support a national health information network; analyze whether state law requirements for Illinois HIE and any necessary changes to other state laws that may serve to be a barrier to the HIE.
- Staff should review and issue recommendations on addressing patient consent alternatives on how information will be shared in an HIE, including no consent, opt out, opt out with exceptions, opt in, opt in with restrictions.
- Planning groups should discuss and develop policy and legal requirements of “breaking the glass” (emergency mechanisms) for accessing medical records via HIE when consent is not possible.
- Discuss the feasibility of a universal consent form in Illinois.
- Discuss legal enforcement and concept of violations, monitoring and penalties/sanctions.
- Discuss the legal remedies associated with violations, including appeal, and judicial remedies.
- What are possible venues for potential dispute resolutions (among providers, between the HIE and providers, among HIEs in other states)? What is the federal role in dispute resolution on HIE issues?
- What is the liability structure for the HIE, and the associated liability to the State of Illinois, if any?
- What is the legal recourse/remedy to a patient whose data is exchanged within the HIE and is compromised? What is the distinction between state actions versus federal law?
- Address the potential issues related to research requests involving records from the HIE, assess confidentiality, patient consent, emergency disclosure, and release issues, impact of FOIA, and private litigation discovery requests.