WIRED for Health

Wisconsin Health Information Technology Strategic & Operational Plan

2012 SOP Update Submission
5/4/2012
Final

CONTENTS

Revision History

Revision History		
Version	**Date of Release**	**Summary of Changes**
V1	8/25/2010	Initial submission
V2	1/12/2011	Revised version incorporating selection of SDE-like governance entity, updated Finance section, and addition of Near-Term Implementation Plan
V3	5/4/2012	Revised version for 2011 submission (due to ONC 5/8/2012). Includes status on progress in 2011 as well as specific additions to address the requirements contained in Program Information Notices ONC-HIE-PIN-002 and ONC-HIE-PIN-003.

Wisconsin Statewide Health Information Network (WISHIN) Board

Name	Role	Organization
Chris Queram	Chair	Wisconsin Collaborative for Healthcare Quality
Linda Syth	Vice Chair	Wisconsin Medical Society
Lisa Ellinger	Secretary	Wisconsin Health Information Organization
Steve Brenton	Treasurer	Wisconsin Hospital Association
Henry Anderson, MD	Board Member	Acting State Public Health Officer
Patti Brennan	Board Member	UW School of Nursing/College of Engineering
Jane Cooper	Board Member	Patient Care
Brett Davis	Board Member	State Medicaid Director
John Foley	Board Member	Anthem Blue Cross Blue Shield
Sheila Jenkins	Board Member	Network Health Plan
Dianne Kiehl	Board Member	Business Health Care Group
Ken Lentkeman	Board Member	Marshfield Clinic
Chuck Nason	Board Member	Worzalla Publishing
Craig Samitt, MD	Board Member	Dean Health System
Denise Webb	Board Member	State Health IT Coordinator

Acknowledgements

Annual updates to the Wisconsin Relay of Electronic Data (WIRED) for Health Project's Strategic and Operational Plan (SOP) are made possible through the generous contributions of several private and public organizations across Wisconsin. The State of Wisconsin and the Wisconsin Statewide Health Information Network (WISHIN) greatly appreciate and thank the WISHIN Board of Directors, members of the Communications, Policy, and Technical Advisory Committees and workgroups, and WISHIN staff for their time, effort, and dedication.

Foreword

Wisconsin benefits from strong intellectual resources and a commitment to succeed in achieving statewide adoption and use of health information technology (HIT) and health information exchange (HIE) to enable improvements in the quality, safety, and efficiency of health care delivered in the state. The WIRED for Health SOP represents the collaborative efforts of multiple stakeholders and is an excellent example of the collaboration that exists between Wisconsin's public- and private-sector stakeholders.

This plan provides the Office of the National Coordinator for Health Information Technology (ONC) with an annual update of WISHIN's accomplishments in implementing the WIRED for Health SOP approved on December 21, 2010, and provides a response to the requirements contained in ONC-HIE-PIN-002 and ONC-HIE-PIN-003. In compliance with the PIN requirements, the following table provides an overview of where requirements are addressed in this update.

PIN Section (Requirement)	SOP Section Reference
1. Changes in HIE Strategy	Foreword
2. Sustainability Plan	Section 7
3. Program Evaluation	Section 12
4. Privacy & Security Framework	Section 10
5. Project Management Plan	Section 11, Appendix 18
6. Tracking Program Progress	Foreword
7. HIE Architectural Model: Point-to-Point Directed Exchange	Foreword
8. HIE Architectural Model: Data Aggregation	Foreword

Wisconsin acknowledges that the HIT and HIE landscapes at the federal and state levels continue to evolve and that this plan is a living document requiring ongoing review, changes, and refinement. The State, as the recipient of the state HIE Cooperative Agreement Program (CAP) grant award, along with WISHIN, the State-Designated Entity (SDE) for HIE in Wisconsin and a sub-recipient of the CAP grant award, will coordinate with and obtain approval from the ONC on any future changes to the plan and timelines in accordance with the program's terms and conditions.

Changes in HIE Strategy

At this time, there are no substantive changes to the WIRED for Health HIT SOP. As the HIT landscape evolves, WISHIN continues to refine the original Strategic and Operational Plan; however, these refinements do not impact the overall HIE strategy or grant budget.

Domain/Sections	Short Description of Approved Portion of SOP that Grantee is Proposing to Change (include page numbers)	Proposed Changes	Reason for the Proposed Changes	Budget Implications of Proposed Changes
Include in First and Subsequent SOP Updates				
Overall HIE Strategy including Phasing	Overall HIE strategy, including phasing, information can be found in Section 5: HIE Development, on pages 81-94.	There are no changes to the overall HIE strategy, including phasing.	Not Applicable	Not Applicable
Governance	Governance information can be found in Section 6: Governance, on pages 85-90.	There are no changes to governance.	Not Applicable	Not Applicable

Domain/Sections	Short Description of Approved Portion of SOP that Grantee is Proposing to Change (include page numbers)	Proposed Changes	Reason for the Proposed Changes	Budget Implications of Proposed Changes
Technology	Technology information can be found in Section 8: Technical Infrastructure and Services, on pages 107-142.	In addition to the previously prioritized use cases, the following scenarios have been added to the SOP: • Coordination of Care Scenario • EKG Image Sharing Scenario • NwHIN Gateway Scenario • Public Health Reporting Scenario	Given changes in the HIE landscape, WISHIN formed a Value Proposition workgroup to receive stakeholder input regarding value-added services. The stakeholders strongly recommended four additional scenarios. These scenarios are also factors for WISHIN's long-term sustainability plan.	The proposed changes have no impact on the budget.
Financial	Financial information can be found in Section 7: Sustainability Plan, on pages 91-106.	A Sustainability Plan was added to the SOP.	The Sustainability Plan was added to comply with ONC requirements.	The proposed changes have no impact on the budget.
Business Operations	Business Operations information can be found in Section 9: Implementation and Operations, on pages 143-156 and in Section 11: Implementation Plan, on pages 168-171.	A revised staffing plan is included in the Implementation and Operations Section.	The staffing plan revisions are a result of lessons learned during the first year of implementation and required to increase operational efficiency.	The proposed changes have no impact on the budget.

Domain/Sections	Short Description of Approved Portion of SOP that Grantee is Proposing to Change (include page numbers)	Proposed Changes	Reason for the Proposed Changes	Budget Implications of Proposed Changes
Legal/Policy	Legal/Policy information can be found in Section 10: Legal and Policy, on pages 157-167.	There are no significant changes to the Legal/Policy section. The Legal and Policy framework was refined.	Minor section refinements are the result of the changing HIE landscape.	The proposed changes have no impact on the budget.
Strategies for e-Prescribing	Strategies for e-Prescribing information can be found in Section 3: Implementation Progress, on pages 47-68.	There are no changes to strategies for e-prescribing.	Not Applicable	Not Applicable
Strategies for Structured Lab Results Exchange	Strategies for structured lab results exchange information can be found in Section 3: Implementation Progress, on pages 47-68.	There are no significant changes from the approved January 2012 quarterly briefing report.	Changes were made to comply with ONC requirements. These changes were approved in the quarterly briefing report submitted in January 2012.	The approved changes have no impact on the budget.
Strategies for Care Summary Exchange	Strategies for care summary exchange information can be found in Section 3: Implementation Progress, on pages 47-68.	There are no changes to the strategies for care summary exchange.	Not Applicable	Not Applicable

Domain/Sections	Short Description of Approved Portion of SOP that Grantee is Proposing to Change (include page numbers)	Proposed Changes	Reason for the Proposed Changes	Budget Implications of Proposed Changes
The Core Documents Are Required As Part Of First SOP Update. Changes Should be indicated in Subsequent SOP Update				
Sustainability	Sustainability information can be found in Section 7: Sustainability Plan, on pages 91-106.	A Sustainability Plan was added to the SOP.	Changes were made to comply with ONC requirements.	The proposed changes have no impact on the budget.
Privacy and Security Framework	Privacy and security framework information can be found in Section 10: Legal and Policy, on pages 157-167. The WISHIN privacy and security framework for point-to-point directed exchange can be found in Section 10: Legal and Policy, on pages 157-167 and in Appendix 11. The WISHIN privacy and security framework for data aggregation model can be found in Section 10: Legal and Policy, on pages 157-167.	There are no significant changes to the Legal/Policy section. The Legal and Policy framework was refined. In compliance with ONC-HIE-PIN-003, WISHIN has provided information regarding point-to-point directed exchange and the data aggregation model.	Minor section refinements are the result of the changing HIE landscape.	The proposed changes have no impact on the budget.

Domain/Sections	Short Description of Approved Portion of SOP that Grantee is Proposing to Change (include page numbers)	Proposed Changes	Reason for the Proposed Changes	Budget Implications of Proposed Changes
Evaluation Plan	Evaluation Plan information can be found in Section 12: WISHIN Evaluation Plan, on pages 172-181.	An Evaluation Plan was added to the SOP.	Changes were made to comply with ONC requirements.	The proposed changes have no impact on the budget.

Tracking Program Progress

WISHIN is committed to demonstrating tangible results of implementation efforts to encourage participation in HIE. The following table provides progress metrics consistent with ONC requirements.

	Report in first SOP update		Report January, 2013		Report January, 2014	
Program Priority	Status as of December, 2011	Target for December, 2012	Status as of December, 2012	Target for December, 2013	Status as of December, 2013	Target for end of grant period
1. % of pharmacies participating in e-prescribing	90.50%[1]	92%				
2. % of labs sending electronic lab results to providers in a structured format	No Data[2]	10%				
3. % of labs sending electronic lab results to providers using LOINC	No Data[2]	5%				
4. % of hospitals sharing electronic care summaries with unaffiliated hospitals and providers	44.01%	50%				

[1] This number was provided by ONC; Wisconsin's e-Prescribing research indicates this number to be 98.6%.

[2] In 2011, WISHIN's laboratory assessment activities measured that 92.1% of Wisconsin laboratories are capable of sending lab results electronically to providers; however, the assessment did not focus on whether or not those results were sent in a structured format. In 2012, WISHIN's laboratory assessment will measure the capability of Wisconsin laboratories to send lab results in a structured format.

Program Priority	Report in first SOP update		Report January, 2013		Report January, 2014	
	Status as of December, 2011	Target for December, 2012	Status as of December, 2012	Target for December, 2013	Status as of December, 2013	Target for end of grant period
5. % of ambulatory providers electronically sharing care summaries with other providers	61.21%	65%				
6. Public Health agencies receiving ELR data produced by EHRs or other electronic sources. Data are received using HL7 2.5.1 LOINC and SNOMED. Yes/no or %	No	No				
7. Immunization registries receiving electronic immunization data produced by EHRs. Data are received in HL7 2.3.1 or 2.5.1 formats using CVX code. Yes/no or %	Yes	Yes				
8. Public Health agencies receiving electronic syndromic surveillance hospital data produced by EHRs in HL7 2.3.1 or 2.5.1 formation (using CDC reference guide). Yes/no or %	Yes	Yes				

Program Priority	Report in first SOP update		Report January, 2013		Report January, 2014	
	Status as of December, 2011	Target for December, 2012	Status as of December, 2012	Target for December, 2013	Status as of December, 2013	Target for end of grant period
9. Public Health agencies receiving electronic syndromic surveillance ambulatory data produced by EHRs in HL7 2.3.1 or 2.5.1. Yes/no or %	No	No				

WISHIN Privacy and Security Framework for Point-to-Point Directed Exchange

The following table describes the WISHIN Privacy and Security Framework for Point-to-Point Directed Exchange in compliance with the requirements contained in ONC-HIE-PIN-003.

	Description of approach and where the domain is addressed in policies and practices	**Description of how stakeholders and the public are made aware of the approach, policies, and practices**	**Description of gap areas, and processes and timeline for addressing**
Required Domains			
Openness and Transparency	This domain does not apply to point-to-point directed exchange. As the Health Information Service Provider (HISP) for point-to-point directed exchange, WISHIN does not access individually identifiable health information (IIHI) or use IIHI beyond what is required to encrypt and route the information. WISHIN does not know what information exists about a patient, how it was collected, how it is used or disclosed. WISHIN uses the Direct standards established by the National Direct Project, therefore, the content of the messages sent via WISHIN Direct cannot be accessed by WISHIN. Without knowledge of the content of the message(s), WISHIN has no information on what was exchanged related to an individual's health information.	Not applicable; however, the WISHIN website provides a significant amount of information on WISHIN Direct that is publicly available.	There are no gap areas for this domain; however, WISHIN is currently working with a marketing and market research firm on consumer engagement. We anticipate that our website will be enhanced significantly in this area and we expect that, at least at a high level, point-to-point directed exchange will be one of the covered topics.

Collection, Use and Disclosure Limitation	These domains are addressed at a high level in section 10.4.2 of the SOP and in detail in the WISHIN Direct Participation Agreement found in Appendix 11 of the SOP.
	
	Some of the relevant sections of the WISHIN Direct Participation Agreement include:
	
	• Part 1: Identity Verification
	• Part 6 (Terms & Conditions):
	  o 6a: Compliance
	  o 6b: Confidentiality
	  o 7a: Safeguards
	  o 8: Breach Notification
	  o 11: Business Associate Provisions
	• Part 7 (Business Associate Provisions):
	  o 2: Compliance with HIPAA
	  o 3d: Minimum Necessary
		The WISHIN Direct Participation Agreement was developed by a workgroup of the WISHIN Policy Advisory Committee (see section 10.4.2 of the SOP).
		
		A "sample" WISHIN Direct Participation Agreement is available on the WISHIN website for any potential participant to view prior to enrolling in WISHIN Direct. This allows potential participants to review the requirements for participation before they even begin the enrollment process.
		
		In addition, once the enrollment process is complete, the applicant must print WISHIN Direct Participation Agreement, complete Part 1 and sign it in front of a notary, and sign the Agreement itself. Once the applicant mails the paperwork to WISHIN, WISHIN has a documented process for validating the applicant's identity before sending it to the Certificate Authority to set up and activate the account.
			No gaps.

Safeguards			
Accountability			
Optional Domains			
Individual Access	Not applicable.		
Correction	Not applicable.		
Individual Choice	Not applicable.		

Data Quality and Integrity	This domain is addressed in the WISHIN Direct Participation Agreement found in Appendix 11 of the SOP. Some of the relevant sections of the WISHIN Direct Participation Agreement include: • Part 6 (Terms & Conditions): o 9a: Accuracy of Patient Record Matching o 9b: Accuracy of Health Data o 9c: Reliance on a System o 9d: Incomplete Medical Record o 9e: Carrier Lines		

WISHIN Privacy and Security Framework for Data Aggregation Model

The Data Aggregation technical architecture model is not currently in production in Wisconsin; however, WISHIN has established several advisory committees and cross-advisory committee workgroups, with broad stakeholder representation, to establish the policies and practices identified by ONC and represented by the required domains noted above.

As a basis for our stakeholder discussions, WISHIN will leverage the policies developed by the Nebraska Health Information Initiative (NeHII). The NeHII policies have already been reviewed and approved by both the ONC Privacy Officer and the Office of Civil Rights. The policies have also been reviewed and/or adopted by more than 20 other statewide HIEs. WISHIN believes that by starting our stakeholder discussions using already approved and established policies, we will have a solid foundation for policy discussions in Wisconsin.

A detailed description of the policy work done by WISHIN to date, and in preparation for our bi-directional, query-based exchange, can be found in Section 10 of this SOP (Legal and Policy).

1 Executive Summary

1.1 Background

On October 16, 2009, Wisconsin submitted its application for the State HIE CAP funding opportunity. Wisconsin's project for statewide HIE was titled, "Wisconsin Relay of Electronic Data for Health" or "WIRED for Health." The goal of the WIRED for Health project was to build substantial HIE capacity statewide to support providers' Meaningful Use of electronic health records (EHRs) and enable efficient, appropriate, and secure flow of information to optimize decisions for health. The approach was to plan, develop, and implement standards-based, secure electronic exchange of patient and health data.

As a part of the American Recovery and Reinvestment Act (ARRA) of 2009, Wisconsin received a total of $9.441 million for planning and implementing a statewide electronic HIE network and services to enable health care providers to be meaningful users of EHR technology and promote better coordination of patient care. The statewide network would also help improve the quality and efficiency of health care delivery in Wisconsin.

The WIRED for Health Board and DHS completed development of Wisconsin's SOP, and ONC approved the plan on December 21, 2010.

1.2 Wisconsin Statewide Health Information Network (WISHIN)

In 2010, Wisconsin Governor Jim Doyle signed Wisconsin Act 274, authorizing the State to select a qualified non-profit corporation to serve as the SDE to govern statewide HIE. Following a competitive application process, the WIRED for Health Board recommended to the Secretary of the Department of Health Services (DHS) that the Wisconsin Statewide Health Information Network (WISHIN) be appointed the SDE to oversee implementation of the WIRED Board's SOP. On October 25, 2010, the State officially announced its intention to designate WISHIN as the SDE. WISHIN is a non-profit organization formed by the Wisconsin Hospital Association, Wisconsin Medical Society, Wisconsin Collaborative for Healthcare Quality, and Wisconsin Health Information Organization.

WISHIN assumed the responsibilities of the former WIRED for Health Board, as well as the program responsibilities of the State Health Information Exchange CAP under the direction of the Wisconsin Department for Health Services (DHS).

1.3 Summary of Changes found in this version of the Strategic and Operational Plan

Each year, Wisconsin is required to update the SOP and submit the updated plan to ONC for approval. This document serves as the first update to the original plan.

There are no substantive changes in strategy represented in this updated SOP; however, there are several additions made to the document, including:

1) Updates on WISHIN's accomplishments:

a. Section 3 of this plan provides details on implementation progress to date, especially as related to the priority areas identified by ONC in Program Information Notice (PIN) ONC-HIE-PIN-001(e-Prescribing, laboratory results delivery, and care summary exchange).

b. Lessons learned over the past year and work completed by WISHIN's Advisory Committees are included throughout the document.

2) A new Sustainability Plan (Section 7) that replaces the Finance section that was included in the original plan and is required by ONC.

3) A new section for Program Evaluation (Section 12) that is required by ONC.

4) A response to the requirements contained in two new PINs received the first quarter of 2012 from ONC: (ONC-HIE-PIN-002 and ONC-HIE-PIN-003). In compliance with the requirements outlined in these PINs, the following table provides an overview of where requirements are addressed in this updated version of the plan.

PIN Section (Requirement)	SOP Section Reference
1. Changes in HIE Strategy	Foreword
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2 Introduction

HIT and HIE can facilitate secure electronic sharing of the right health information at the right place and at the right time. Technology is an enabler and the means to a desired end state -- improvement in the health of individuals and communities in Wisconsin.

The *WIRED for Health: HIT Strategic and Operational Plan* will move our state forward toward achieving this vision and developing the health information infrastructure and interconnectivity we need for improved health care and population health. The success of the statewide health information network (SHIN) will be measured by its ability to enable:

- Lives to be saved and improvements in the health status of Wisconsin's population through appropriate prevention, early intervention, and treatment
- A transformation of the health care sector that creates healthy cooperation and healthy competition among providers, with patients, payers, and other partners contributing to better outcomes
- Improvement in the state's economy and competitive position as the health care sector is transformed and health care investments result in higher quality, safer, and cost-effective care

Wisconsin has a deserved reputation as a national leader in improving health care quality. Our state is uniquely positioned to transform the health care sector because of its technical resources; strong industry partners in the technology and health care sectors; the widespread commitment, investment, and intellectual capacity brought to this work by the health community; and a remarkable history of collaboration across private sector competitors and across the public and private sectors. The WIRED for Health planning and implementation efforts are more examples of this collaborative spirit in Wisconsin.

Throughout its eHealth journey, Wisconsin has adopted a collaborative and transparent approach that has included numerous stakeholders and volunteers with the intent that the result is a shared vision among Wisconsin's health community.

The Health Information Technology for Economic and Clinical Health Act or HITECH Act,[3] provides an unprecedented opportunity to build upon a foundation created through the pioneering vision and leadership of a number of leading health care organizations in the state. Led by hospitals, medical groups, integrated delivery systems, and public health, Wisconsin enjoys a high level of information technology adoption in health care and public health.

Unlike most states, **Wisconsin has a large proportion—about 74%—of its physicians practicing in large independent group practices or integrated delivery networks (IDNs).** Most of these physicians and many of our hospitals have moved ahead with adopting

[3] The HITECH Act is part of the 2009 American Recovery and Reinvestment Act (ARRA).

and using EHRs and have made other significant HIT investments, including investments in HIE within their organizations and local communities.

There is also a strong commitment to quality measurement, reporting, and improvement through the Wisconsin Collaborative for Healthcare Quality (WCHQ), the Wisconsin Health Information Organization (WHIO), the Wisconsin Hospital Association (WHA), the Wisconsin Medical Society (WMS), and MetaStar. The human and financial capital investments made to build this HIT infrastructure are significant and so too are the results. **Wisconsin has been a best performing state (in the top five) for four of the last five years in overall health care quality performance and has led the nation in three of the last five years reported (2006 – 2010) as reflected in the *National Healthcare Quality Report* issued by the federal Agency for Healthcare Research and Quality (AHRQ)**.

Action in the private healthcare sector has been complemented by considerable investment in public health informatics. Local health departments track maternal child care management and disease surveillance using systems that electronically import vital records and laboratory reports. **Ninety-two percent of immunization registry transactions now occur electronically among more than 1,400 provider organizations.**

Wisconsin is also home to two of the world's leading HIT companies, Epic and GE Healthcare, as well as many other innovative companies and organizations working on health IT products and services, such as Marshfield Clinic. In the public sector, Wisconsin is developing a sophisticated public health information network and other systems that can connect to or support a SHIN.

Extensive work on privacy and security issues has already been conducted under the leadership of the Health Insurance Portability and Accountability Act (HIPAA) Collaborative of Wisconsin and the former eHealth Care Quality and Patient Safety Board, providing a venue for diverse stakeholders to uniformly address these critical issues. There is also a history of strong public-private collaboration to address health care issues.

Wisconsin is well positioned to advance the development of a SHIN and exchange infrastructure and services. The timing is excellent to complete this plan due to 1) the Medicare and Medicaid EHR Incentive payment program; 2) the alignment of the leadership, technical assets, and expertise that already exists in the state; and 3) the significant progress on HIT plans and initiatives at the national level to build upon, such as the Nationwide Health Information Network (NwHIN).

2.1 Wisconsin's Approach to Developing and Updating Its Health Information Technology Strategic and Operational Plan

This section summarizes the approach used to create and annually update Wisconsin's HIT Strategic and Operational plan. The original plan, referred to as the 2010 SOP, was approved by the federal Office of the National Coordinator (ONC) for Health IT on December 21, 2010 and serves as the basis for this first annual update submitted by Wisconsin. Subsequent annual updates will build on the prior year's version.

It is important to note that the first annual update to the SOP would have been due in December of 2011; however, ONC released two PINs that detail requirements for the update. As such, the first annual update of Wisconsin's SOP is due May 8, 2012 and is referred to as the 2012 SOP. The 2012 SOP includes progress through March 2012.

Each annual update of the plan provides ONC with important information on WISHIN's accomplishments, as well as any refinements in strategies that are needed as a result of the evolving HIT and HIE landscapes at the federal and state levels.

This plan is a living document requiring ongoing review, changes, and refinement. The state, as the recipient of the State HIE CAP grant award, along with WISHIN, the SDE for HIE in Wisconsin and a sub-recipient of the CAP grant award, will coordinate with and obtain approval from ONC on any future changes to the plan and timelines in accordance with the program's terms and conditions.

2.1.1 Summary of Foundational Work for the Development of the 2010 SOP

Below is a high-level summary of Wisconsin's work leading up to the development of Wisconsin's 2010 SOP:

November 2005: Governor Jim Doyle created the eHealth Care Quality and Patient Safety Board ("the eHealth Board"), through Executive Order #129.

Early 2006: Governor Doyle appointed the Board members and charged the Board with creating an Action Plan for Health Care Quality and Patient Safety ("eHealth Action Plan").

During 2006: The eHealth Board developed and published the eHealth Action Plan outlining high-level goals and strategies for statewide HIT adoption and HIE and served as a guide for the HIT and HIE planning and implementation activities. Wisconsin was able to initiate and complete important foundational work in two areas: (1) removing some health information privacy law barriers to electronic HIE and (2) initiating regional HIE development in the Milwaukee area. This work was enabled by two federally funded grant programs: the Health Information Security and Privacy Collaboration (HISPC) and the Medicaid Transformation Grant.

May 2009: Wisconsin initiated the State-Level HIE (SLHIE) Planning and Design Project. The project started with state-level HIE governance planning activities that were consistent with the requirements promulgated by ONC in the State HIE CAP[4] Funding Opportunity Announcement (FOA) for the governance domain of a state HIE plan.

Summer of 2009: The SLHIE Planning and Design Project team conducted a stakeholder assessment, environmental scan, and a comprehensive inventory of public and private HIT assets that either need to be connected to an HIE or could be leveraged in a

[4] The State HIE CAP is an ONC funding opportunity for planning and implementing statewide HIE authorized by the HITECH Act. The ONC awarded Wisconsin $9.441 million under this cooperative agreement.

statewide HIE architecture. The deliverables produced from this effort are available at http://dhs.wisconsin.gov/eHealth/SLHIE.

2.1.2 Development of Wisconsin's 2010 SOP

To facilitate the development of its 2010 SOP, Wisconsin took a number of steps to establish a transparent, multi-disciplinary framework to engage stakeholders:

December 1, 2009: Governor Doyle signed Executive Order 303, included in Appendix 2, to rescind Executive Order 129 and establish the Wisconsin Relay of Electronic Data (WIRED) for Health Board to develop and implement the state's HIE plans in accordance with the State HIE CAP requirements. The Board was attached to DHS and had broad, multidisciplinary stakeholder representation across the public and private sectors.

February 23, 2010: Governor Doyle made his appointments to the WIRED for Health Board.

March 8, 2010: The WIRED for Health Board met for the first time and approved establishment of five committees to accomplish the planning:

- Governance
- Finance and Audit
- Standards and Architecture
- Communications, Education, and Marketing
- Legal and Policy

Over a period of five months and several hundred hours of meetings, research, and writing, the WIRED for Health Board and its committees completed this HIT SOP for Wisconsin.

October 25, 2010: The state officially announced its intention to designate WISHIN as the SDE to govern statewide HIE in Wisconsin. The selection and appointment of WISHIN as the SDE was made possible by Governor Doyle's signing of Wisconsin Act 274. WISHIN was selected as the SDE following a competitive application process conducted by the WIRED for Health Board and its recommendation to the Secretary of the DHS.

December 21, 2010: The ONC approved Wisconsin's 2010 SOP and WISHIN assumed the responsibilities of the former WIRED for Health Board, as well as the program responsibilities of the State HIE CAP under the direction of DHS.

2.1.3 The 2012 Annual Update of Wisconsin's Health Information Technology (HIT) Strategic and Operational Plan

WISHIN, along with many stakeholders and partners, has spent the past year implementing the 2010 SOP and identifying strategies needed for success in the coming years. We have made significant progress.

This updated plan, referred to as the 2012 SOP, provides the ONC with important information on WISHIN's accomplishments as well as any refinements in strategies that are needed as a result of the evolving HIT and HIE landscapes at the federal and state levels.

Wisconsin acknowledges that the HIT and HIE landscapes at the federal and state levels continue to evolve and that the SOP is a living document requiring ongoing review, changes, and refinement. The State, as the recipient of the State HIE CAP grant award, along with WISHIN, the SDE for HIE in Wisconsin and a sub-recipient of the CAP grant award, will coordinate with and obtain approval from ONC on any future changes to the plan and timelines in accordance with the program's terms and conditions.

2.2 HIT Program Coordination

Successfully implementing interoperable intra- and interstate HIE has interdependencies with other relevant ARRA, federal, and state programs and requires specific points of coordination with the organizations responsible for these programs as well as with other states bordering Wisconsin. This section describes the role of Wisconsin's State Health IT Coordinator and how these points of coordination are being addressed.

2.2.1 Role of the State Health IT Coordinator

The State Health IT Coordinator serves as a leader in developing and advocating for policies that support the goals of statewide HIE. The Coordinator is responsible for coordinating and working in close collaboration with the ONC, Wisconsin's State-Designated Entity, the State's Medicaid Director, the State's Health Officer, other health leaders and stakeholders in the government and private health care sectors, and other states' Health IT Coordinators.

The State Health IT Coordinator is ensuring state agencies and their partners in the statewide HIE initiative work cooperatively with their federal partners and other stakeholders to facilitate statewide HIE and to help move providers to Meaningful Use of EHR systems.

The position of the State Health IT Coordinator resides in DHS and is designated by the Governor's Office as the key liaison among government and private stakeholders in the statewide HIE efforts. Governor Doyle designated the state's eHealth Program Manager as the State Health IT Coordinator on October 16, 2009. The Governor's letter informing the ONC about the designation of the State Health IT Coordinator is included in Appendix 1. In fulfilling the role as the State Health IT Coordinator, this person is driving the coordination and integration of HIT/HIE-related projects funded under ARRA.

The State Health IT Coordinator:

1) Works with state health policy makers on strategies to achieve statewide HIE goals, including addressing legal and policy issues on privacy and security.

2) Serves as a leader in fostering effective and efficient exchange of health information that leverages existing state and regional efforts based on U.S. DHHS-adopted standards and certification criteria.

3) Represents the state at HIT-related functions.

4) Maintains a library of HIT literature and directs analysis and written communications about the health IT landscape and briefs the Governor, Legislature, and other health entities.

5) Supports planning of HIE services within Wisconsin and across the state's borders, including the development and maintenance of the Wisconsin HIT strategic plan and an effective model for HIE governance and accountability.

6) Coordinates with Medicaid, state public health programs, other federally funded health programs, and other HIE activities in the state to enable and ensure an integrated, unified approach to HIE, the avoidance of duplication of efforts, and the monitoring of provider participation in HIE as required by the federal and state Meaningful Use requirements.

7) Works to leverage and maximize applicable state program resources and assets, such as the Wisconsin Immunization Registry and other public health registries and systems, the Wisconsin Master Client Index application, and authorized Medicaid federal financial participation to support HIE activities.

8) Coordinates with the Medicaid program and the Wisconsin Department of Employee Trust Funds (DETF) on leveraging the state's purchasing power and policy levers to promote statewide HIE, such as establishing requirements for entities reimbursed, licensed, and/or regulated by the state to participate in e-prescribing, electronic labs results delivery, or electronic sharing of care summaries across transitions of care (i.e., licensed pharmacies, CLIA-certified labs, and licensed health care providers).

9) Identifies and fosters cross-program coordination with other ARRA-funded programs (i.e., the Regional Extension Center, broadband, workforce development, the Strategic Health IT Advanced Research Projects (SHARP) Program, Beacon Communities), as well as other relevant federal initiatives (e.g., federal health care reform) applicable to Wisconsin.

10) Develops and maintains processes and methods to inform state government agencies such as DHS, the Department of Corrections, DETF, and the Department of Veterans Affairs and local government about HIT/HIE development in Wisconsin and obtain input on the public sector's HIE requirements and needs.

11) Serves as a resource to WISHIN in the implementation of the SHIN and services as an appointed Board member and through a close working relationship with the WISHIN CEO.

12) Verifies WISHIN complies with the terms of any contract with the Department pertaining to statewide HIE.

13) Ensures the annual report to the ONC addresses statewide HIE alignment with other federal programs is completed in a timely fashion.

14) Assists in increasing statewide consumer involvement in HIT/HIE development.

15) Identifies and facilitates potential interstate partnerships pertaining to HIT/HIE.

2.2.2 Coordination with Medicaid

The state Medicaid program has been and continues to be a principal participant in the state's eHealth program and initiatives. The Medicaid program continues to demonstrate its commitment to advancing HIT and HIE through the WIRED for Health Project.

Past commitments to advancing HIT within Wisconsin included a Medicaid Transformation Grant in 2007 to implement a community-level HIE between hospital emergency rooms in the Milwaukee County hospitals. The Wisconsin Medicaid program completed this grant project in March 2011.

Multiple coordination activities are occurring with the Wisconsin Medicaid program to develop a coordinated HIT/HIE strategy that promotes the use of EHR technology and exchange of health information to help improve the health of individuals and communities in Wisconsin. This coordinated strategy is reflected in both the SOP and the State Medicaid HIT Plan. Specific coordination activities with the Medicaid program include:

- Medicaid Director participation on the WISHIN Board
- Medicaid staff participation on the WISHIN Board's committees
- Project management coordination
- HITECH program alignment, collaboration, and coordination between the Medicaid HIT project team, the Wisconsin HIT Extension Center, and WISHIN, facilitated by the State Health IT Coordinator

2.2.2.1 Medicaid Participation in the WIRED for Health Project

The Medicaid Director is serving on the WISHIN Board. As a member of the Board, the Medicaid Director, along with other public- and private-sector representatives are responsible for governing the implementation of a statewide HIE network and services that will:

- Help health care providers use and exchange electronic records
- Provide a technical infrastructure
- Identify, secure, and provide funding to build capacity and ensure long-term sustainability
- Create a common set of rules for exchanging health information while protecting patient interests

- Provide for the operation and flow of information
- Outline provisions for oversight and accountability

The WIRED for Health Project is a statewide initiative that is implementing a flexible SHIN architecture and core services that will address the HIE needs of health care providers and hospitals eligible for the Medicare and/or Medicaid EHR incentive program in the near term and all health care providers and patients regardless of health care payer, as well as other stakeholders, in the long term. Therefore, the Medicaid program did not set up a separate governing/advisory council or board and committees/workgroups within the Medicaid program to plan how it will promote the adoption of EHR technology and exchanging of health information among Medicaid providers. Instead, the Medicaid Director and Medicaid program staff actively participate on the WISHIN Board's committees and workgroups and represent the Medicaid program's interests and needs in WISHIN's planning and implementation activities for statewide HIE.

2.2.2.2 Project Management Coordination

WISHIN and Wisconsin Medicaid HIT project managers meet regularly to share project information and to validate each team is receiving the information and support they need to implement their respective plans. The coordination between the projects allows resources to be effectively assigned across projects and helps ensure alignment between the SOP and the Medicaid HIT Plan. The two respective project teams meet at least monthly with the Wisconsin Health Information Technology Extension Center (WHITEC) team and bi-weekly with the State Health IT Coordinator to report on project status and resolve any issues.

2.2.3 Coordination with Medicare and Federally Funded, State-Based Programs

The State Health IT Coordinator reached out to the Centers for Medicare and Medicaid (CMS) to discuss integration of Medicare and its data into the state's quality initiatives, particularly the WHIO Health Analytics Exchange. The State and WISHIN will proactively pursue Medicare's involvement in the WIRED for Health Project and pursue establishment of a data sharing agreement with Medicare.

Coordination across the federally funded state-based health programs has fewer complexities in Wisconsin because these programs are all housed in a single state department and are under the leadership of a single cabinet secretary. DHS programs include Medicaid/Children's Health Insurance Program (BadgerCare Plus), Disability Determination, Public Health, Long-Term Care and Aging, Mental Health and Substance Abuse Services, Tribal Affairs, and Quality Assurance (the health care regulatory arm in the state) and already has well-established working relationships with CMS, the Centers for Disease Control (CDC), Health Resources and Services Administration (HRSA), Substance Abuse and Mental Health Services (SAMSHA), and Indian Health Service (IHS). DHS managers and staff are participating in and representing their respective programs in the implementation of the SHIN and services. The Department is ensuring WISHIN's activities account for the needs of all the health programs managed by the Department as well as those outside the Department. The State Health Officer is on the WISHIN Board. He also participates on the Governance Committee. The DHS Director of the Office of Health Informatics (OHI) is a member of

the Technical Advisory Committee. The State Health Officer and the OHI Director are working to ensure the Meaningful Use HIE requirements related to public health will be satisfied and that the state's public health systems will be ready to connect to the SHIN.

The state's programs for children and families, including child welfare, child care, foster care, kinship care, and domestic abuse and violence were previously under DHS, but were reorganized under a separate department, the Department of Children and Families in 2008. DHS has a strong working relationship with DCF, and together they are uniquely positioned to ensure targeted populations will continue to be meaningfully involved in the implementation of a statewide HIE network and services. One or both departments either provide services or assist organizations that provide services to the medically underserved, newborns, children, youth (including those in foster care), the elderly, persons with disabilities, persons with mental and substance abuse disorders, and persons in long-term care and aging. The departments already have policies and procedures in place to ensure the needs of Limited English Proficiency (LEP) persons are met with regard to the populations they serve.

A variety of additional strategies aimed at communicating information to and obtaining input from specific target populations will be developed to meaningfully involve them in the implementation and ensure their special HIE needs are met. The State Health IT Coordinator is establishing vehicles and methods for obtaining input from relevant state and local government agencies, and the community-based organizations that interact with these agencies. The State Health IT Coordinator will help ensure community-based organizations administering federally funded state-based programs and the populations they serve are involved in the implementation of the strategic and operational plan for statewide HIE and that the project ultimately fulfills their special needs.

2.2.4 Coordinator with Federal Care Delivery Organizations

Wisconsin has one active military base, Fort McCoy, with a military treatment facility—a troop medical clinic. There are about 1,250 active-duty military personnel permanently assigned to the base and the base trains more than 105,000 personnel annually. The Veterans Administration (VA) has three major medical centers in Wisconsin located in Madison, Milwaukee, and Tomah, 13 outpatient clinics, and four community-based outpatient clinics across the state. WISHIN will engage Fort McCoy's clinic and the VA's medical centers and clinics to discuss, coordinate, and facilitate connecting these providers to other providers in the state and across state borders either through the nationwide or SHIN.

Biannually, DHS and the federally recognized Indian tribes in Wisconsin hold a consultation meeting, and DHS develops a consultation implementation plan. The plan is a set of mutually agreeable short- and long-term strategies to address health and human services issues. The Department and the tribes agree to collaborate and provide staff as required to successfully achieve these outcomes. One of the implementation plan outcome areas relates to the adoption and Meaningful Use of EHRs in the tribal health clinics and participation in HIE. The State Health IT Coordinator, the Medicaid HIT team, and WHITEC have reached out to the tribal health directors to

offer assistance and provide education and orientation on the Wisconsin Medicaid HIT Plan and this SOP. Some of the clinics have signed up for technical assistance from either WHITEC or the National Indian Health Board (NIHB), which also received a grant award to serve as a HIT extension center for tribes.

2.2.5 Coordination with Other States

Wisconsin is participating in the ONC, CMS, and National Governors Association multi-state collaboration forums and technical assistance calls and meetings. The State Health IT Coordinator is a member of the State HIE Leadership Forum and is coordinating and collaborating with her counterparts in neighboring states and will continue to do so throughout the implementation of Wisconsin's health information network and services so the interstate and nationwide HIE interoperability and connectivity goals are achieved. WISHIN is reviewing and staying informed on neighboring states' strategic and operational plans and is identifying interdependencies, common points of interests, and priority areas for the development of strategies to achieve interstate exchange. WISHIN is sharing all its work with other states through the Communities of Practice, its Web site and listserv, and the Health Information Technology Resource Center's (HITRC's) collaborative workspace/portal.

As Wisconsin begins developing the detailed specifications for the directory services and the data sharing and use agreements, Wisconsin will coordinate with the states on its borders (i.e., Minnesota, Iowa, Illinois, and Michigan). The Midwest State Health IT Coordinators and SDE Directors/CEOs meet by phone monthly to share information and work through interstate issues and are leveraging existing regional and national meeting events to meet in person. The state is currently collaborating with Minnesota on legal and policy issues related to sharing health information electronically across state borders. This collaboration is further described by the Policy Advisory Committee in Section 10.

The Medicaid program is also coordinating its plans with other states that use the same fiscal agent/Medicaid Management Information System (MMIS) vendor (i.e., HP Enterprise Services). Presently, the Medicaid program is using a shared solution with other states to support the administration of the Medicaid EHR Incentive program.

2.3 Strategic Framework

The WIRED for Health Board developed a strategic framework that included two interdependent components. The first component consisted of the vision, mission, and guiding principles for statewide health information exchange. The second component included the goals, objectives, and performance measures.

The shared vision represents the WIRED for Health Board's collective aspirations for HIE and its impact on stakeholders. The mission translated the vision into a "purpose statement" which captured the importance of statewide HIE to Wisconsin and the health community. The guiding principles developed by the WIRED Board articulated the philosophies and core beliefs about health information exchange, which guided goal-setting activities.

Once the WIRED Board established the foundation for the strategic framework, the committees of the WIRED Board identified detailed near and long-term goals and objectives, as well as performance measures. Combined, the goals and objectives provided the WIRED committees with the strategic direction required to develop the proposed performance measures designed to gauge success. As the SDE, WISHIN leverages this strategic framework for implementing the overall Strategic and Operational Plan. The following section describes the various components of the strategic framework.

2.3.1 Vision and Mission

The WIRED for Health **vision** is to promote and improve the health of individuals and communities in Wisconsin through the development of health information exchange that facilitates electronic sharing of the right health information at the right place and at the right time.

This vision recognizes the important role electronic health information exchange plays in enabling transformation in the health care delivery system and health care reform in Wisconsin. Adopting and using health information technology and sharing health information electronically is a necessary component—although not the only component—needed for this transformation to occur. Better information will help clinical care providers improve their practice of medicine and help improve the health of individuals and communities in Wisconsin.

The WIRED for Health **mission** is to develop and sustain a trusted, secure statewide health information network and HIE services that provide value to participants.

Both the WIRED for Health Board and the WISHIN Board understand that stakeholder trust, privacy and data security, and services that provide value are the keys to sustainability.

The WISHIN Board reviewed and revised the WIRED for Health vision and mission and adopted some minor revisions. The WISHIN vision and mission can be found in section 6.1

2.3.2 Guiding Principles

Wisconsin adopted the following overarching principles that will serve as guideposts for the development of the statewide health information network and services.

Rome wasn't built in a day. We will use an incremental, voluntary, and collaborative approach to develop and maintain the statewide health information network and HIE services that considers the relative benefit to and readiness of participants, beginning with meaningful use, and building on existing health IT successes, standards, and investments.

Enabling and empowering. We will provide information and tools to the individuals responsible for making health decisions in a way that is easy to use and understand. The

HIE solution will connect community resources to enable informed decision-making and care coordination at the community level.

Strike the right balance. We will establish the right mix of services and functionality that benefits participants, encourages commitment to using the statewide health information network, and fosters cooperation among participants.

Enhancing delivery of care for improved quality. The statewide health information network will provide tools and information to improve the efficiency and effectiveness of care delivery, health promotion, and disease prevention, while informing future policy and planning decisions and expenditures.

Stakeholders must see the value. We will align qualitative and quantitative benefits to provide value to the individual, health community, and population as a whole. We will present a value proposition that encourages stakeholders to voluntarily participate in and pay for the statewide health information network and HIE services.

Transparency is critical for the advancement of HIE. We will establish trust among stakeholders by providing an environment where decisions about HIE are made openly and in full public view.

Balancing protection of health information with appropriate access. We will ensure the statewide health information network protects patient privacy by sharing electronic information on a "need-to-know" basis and in a way that is secure. We will foster trust among participants by establishing effective security safeguards and controls.

2.3.3 Goals and Objectives

A fundamental goal of the 2006 eHealth Action Plan was to establish an eHealth technology platform in Wisconsin. This goal had two components: 1) statewide adoption and use of electronic health record systems by all health care providers and 2) fostering the creation of regional health information exchanges while simultaneously developing statewide HIE services. Building on the strategic foundation established by the eHealth Action Plan, the WIRED for Health Board developed overarching HIT and HIE strategic goals; and high-level strategic goals, long-term and near-term goals, and objectives for each of its committees. These goals have since been adopted by WISHIN.

While the WIRED for Health Board developed the HIT Strategic and Operational Plan for Wisconsin, including the vision, mission, and goals, WISHIN will oversee the implementation of the Plan. Since the Plan was approved by the ONC, the goals and objectives under the Plan serve as the starting point for the implementation period. However, with an eye toward continuous improvement in realizing effective and secure HIE across health care providers, WISHIN continuously reviews and updates the entire Plan, including the goals and objectives. During the term of the State HIE CAP, reassessments and updates to the Plan are required annually in collaboration with ONC.

WISHIN is not directly responsible for achieving the parts of the overarching goals related to EHR adoption. However, it is WISHIN's role to support and foster attainment of

these goals for Wisconsin. WISHIN is also not responsible for setting standards for providers' EHR systems.

2.3.3.1 Overarching Goals

- By 2016, all ambulatory care providers and hospitals will have and use nationally certified EHR systems and HIE.
- By 2020, all health care consumers, providers, and public health agencies will have access to nationally certified EHR systems and HIE.
- By 2020, most patients, health care providers, and public health agencies will use electronic health records and information exchange to improve outcomes related to the effectiveness, quality, efficiency, and safety of health care and population health services.

2.3.3.2 Governance

High-Level Goals:

- Wisconsin will establish a permanent, state-level, public-private, non-profit governing entity for statewide HIE that effectively executes the State HIT Strategic and Operational Plans and fairly represents the needs of all consumers of health information *(completed)*.
- Wisconsin will establish a governance framework that is flexible and enduring, able to continuously improve and re-invent itself to meet changing environmental conditions *(completed)*.

Near-Term Goals and Objectives:

1) By June 30, 2010, the Board will establish an open and transparent process to identify qualified applicants and select the SDE *(completed)*.
   a) The Request for Application (RFA) will include the following selection criteria:
      i) All requirements specified by law.
      ii) Commitment of the SDE Board of Directors (BoD) to embrace and execute the mission and goals of the WIRED for Health Project.
      iii) Commitment of the SDE BoD to the principles of collaboration, transparency, buy-in, and trust as a manner of conducting business and making business decisions.
      iv) Demonstrated ability to perform, or commitment to build performance capabilities to successfully execute, stated requirements.
   b) The selection process will:
      i) Be well documented and easily understood by applicants and other participants.
      ii) Be transparent and attract a broad group of applicants.
      iii) Invite broad stakeholder involvement.

2) By September 30, 2010, the State will select the SDE *(completed)*.
   a) By September 24, 2010, an Evaluation Team selected by the WIRED for Health Board will make a recommendation to the Board on the organization to serve as the SDE. The recommendation will include:
      i) The organization that successfully met the evaluation criteria and was rated as the best applicant by the Evaluation Team. The successful applicant must:
         (1) Meet all/almost all of the requirements. If not all requirements are met, the applicant must agree to submit a plan of action to satisfy any outstanding requirements within a reasonable and acceptable time frame.
         (2) Have generated broad public support during the selection process.
      ii) A summary of the applicant's profile with emphasis on what is already in place and what must be built/created/changed before transition of Governance authority can occur.

Long-Term Goals and Objectives:

1) By February 1, 2011, WISHIN will assume responsibility for implementation of the Strategic and Operational Plan *(completed)*.
   a) By December 30, 2010, the State will execute a contract with WISHIN *(completed)*. The contract:
      i) Transfers responsibility and authority to WISHIN for execution of the Strategic and Operational Plan of the WIRED for Health Project.
      ii) Documents the transition process, including specific details about changes in structure or process identified through the selection and recommendation process and timing requirements.
      iii) Establishes the terms of the partnership between WISHIN and the State of Wisconsin including the deliverables that must be met for transfer of funds.
         (1) Identify State Health IT Coordinator role and authority in relation to business process and ongoing responsibilities of WISHIN.
         (2) Establish a tie between the State Medicaid HIT Plan and WISHIN.
   b) By February 1, 2011, WISHIN will *(completed)*:
      i) Integrate the vision, mission, guiding principles, and goals in the Strategic and Operational Plan into WISHIN's vision, mission, guiding principles, and goals.
      ii) Fully understand and be committed to successful implementation of the Strategic and Operational Plan.
      iii) Establish a focus on continuous improvement in realizing effective and secure HIE across health care providers by implementing a process for continuous review and alignment of its vision, mission, guiding principles, and high-level goals as necessary to comply with the evolving requirements of the State HIE CAP.

2) By February 1, 2012, WISHIN will satisfy the structural and functional transition requirements of the contract with the Department *(completed)*.
   a) WISHIN will establish a process for continuous review and alignment of its implementation plans with the State Medicaid HIT Plan.

2.3.3.3 Finance

High-Level Goal:

Develop a path to financial sustainability including a business plan with feasible public and private financing mechanisms for ongoing statewide health information exchange.

Near-Term Goals and Objectives:

1) Determine the short-term capital and operating fiscal needs for the statewide health information network and its core services.
   a. Identify services.
   b. Identify cost drivers.
   c. Achieve consensus with the Standards and Architecture domain on capital and operating financing.

2) Prepare a short-term capital acquisition plan for statewide health information network and HIE services.
   a. Identify sources of capital.
   b. Develop a strategy to acquire capital based on an implementation timeline.

3) Develop budget for ARRA State HIE CAP funding.
   a. Identify short-term costs.
   b. Develop plan to expedite spending of ARRA funds in the first 2 years of the State HIE CAP.

4) Based on recommended HIE services developed in the Standards and Architecture domain, estimate the cost of implementation as well as ongoing operations for the statewide health information network and HIE services.
   a. Develop individualized financing requirements for top-priority use cases and related services using financial model.

Long-Term Goals and Objectives:

1) Develop a comprehensive business plan to achieve long-term sustainability with public and private funding, once ARRA State HIE CAP funding is exhausted.
   a. Analyze the value propositions for each stakeholder group.

b. Develop a balance for costs and benefits for each stakeholder group.

2) Identify key barriers to long term financial sustainability and recommend resolutions.

a. Communicate with stakeholders to identify barriers to participation in the statewide health information network and HIE services.

b. Develop recommendations to overcome or mitigate the identified barriers.

3) Provide contingency plans if revenue sources do not materialize as originally predicted.

a. Identify and prioritize sources of capital funding and operational revenues. Develop three financing scenarios based on differing amounts of capital.

b. Determine which HIE services are non-essential.

c. Work with Standards and Architecture domain to prioritize HIE services. Prioritization will include current and future costs and revenues.

d. Recommend adequate level of cash reserves to allow for growth as well as to withstand operational deficits and potential litigation risks.

4) Develop a consensus on stakeholder benefits and stakeholder investments required to both capitalize initial efforts and achieve long-term financial sustainability.

a. Develop a benefits matrix to identify value add to each stakeholder.

b. Communicate with stakeholder communities to acquire buy-in and commitment.

5) Develop and implement appropriate audits and controls focused on assuring equity and compliance among all stakeholders.

2.3.3.4 Standards and Architecture

High-Level Goal:

Develop a scalable, standards-based technical architecture for statewide HIE that supports interoperability and leverages existing investments in health IT to the extent possible.

Near-Term Goals and Objectives:

The timelines and goals presented below may be met at an earlier date, but the goals are intended to serve as a starting point.

1) Deploy a standards-based architecture and core HIE services to be available to meet meaningful use requirements for eligible professionals and hospitals.

a. Conduct a readiness assessment of providers and hospitals to determine status and ability to connect to the statewide health information network and HIE services. Reference the data collected through other similar surveys to reduce response burden on providers and hospitals.

b. By July 1, 2011, the near-term technical infrastructure will be available to support eligible health professionals and hospitals in meeting the Stage 1 Meaningful Use criteria for HIE through the Direct gateway.

c. By October 1, 2012, the statewide health information network and HIE services will be available for bi-directional exchange to help support eligible health professionals and hospitals in meeting the Stage 2 Meaningful Use criteria for HIE.

d. By January 1, 2015, the statewide health information network and HIE services will be available to help support eligible health professionals and hospitals in meeting the Stage 3 Meaningful Use criteria for HIE.

2) Develop and implement a state-level business process for selecting and adopting standards.

Review evolving national standards and initiatives (e.g., NHIN Exchange, NHIN Direct) and ensure planning incorporates standards that will enable interstate and national connectivity for Wisconsin's statewide health information network and HIE services.

3) By 2016, data accepted by the statewide health information network from EHR systems statewide will be anonymized and made available to authorized entities through HIE for measurement of health care quality, determinants of health, and trends and magnitude of health disparities in Wisconsin.

a. Collaborate with the Wisconsin HIT Extension Center (WHITEC) to encourage providers to include standards-based connectivity to the statewide health information network in their EHR roll-out plans.

b. Encourage all health care providers with EHR implementations to connect to the statewide health information network and provide data.

c. Work with experts in the field of anonymization.

Long-Term Goals and Objectives:

1) By 2020, the statewide health information network and HIE services will reach all geographies and providers across the state and be able to continuously receive, access, and transmit health information among health systems.

a. Determine HIE use cases to be implemented in priority order.

b. Determine geographies and timeline to advance these implementations statewide.

c. Define standards of timeliness for use cases and data elements.

d. Align with and leverage the state broadband plan.

2) By 2016, the statewide health information network will facilitate unified electronic access to personal health information by patients and their appointed guardians via personal health record system(s). The statewide health information network will remain agnostic to personal health record (PHR) solutions and facilitate a standard feed for PHR implementations.

a. Identify where this capability currently exists, differentiating from IDN-specific portal and HIE-served PHR.

b. Assess and identify standards for content and communication and adopt these standards in the statewide architecture.

2.3.3.5 Legal and Policy

Near-Term Goals and Objectives:

1) Establish a policy framework that optimizes the electronic exchange of health information while protecting patient privacy.

a. Establish uniform privacy and security strategies, policies, and procedures for the statewide health information network and HIE services that ensure health information is protected in accordance with Wisconsin law, HIPAA, and other federal laws and requirements (i.e., consent, authorization, authentication, access, audit, breach, etc.).

b. Establish uniform business, technical, and operational policies and procedures for the statewide health information network and HIE services that ensure health information is protected in accordance with Wisconsin law, HIPAA, and other federal laws and requirements.

c. Develop a process for establishing strategies, policies, and procedures identified in Objectives (a) and (b) above incrementally over time.

d. Consistent with the established legal and policy framework, establish a contractual model for governing participation in the statewide health information network and HIE services in Wisconsin and in exchange with federal agencies.

e. Establish oversight and accountability mechanisms that ensure compliance with the established legal and policy framework by the statewide health information network and participants.

f. Develop a process to evaluate and update the legal and policy framework as part of an annual program evaluation and more often if necessary consistent with Objectives (a) and (b) above.

g. Collaborate with neighboring states beginning with Minnesota to harmonize laws, regulations, policies, and practices in support of interstate HIE.

2) Establish a legal framework that enables the electronic exchange of health information while protecting patient privacy.

a. Recommend changes to Wisconsin health privacy laws and regulations where warranted.

b. Advocate for the harmonization of existing federal and State laws to enable HIE services.

c. Consistent with the established legal and policy framework, establish a contractual model for governing participation in the statewide health information network and HIE services in Wisconsin and in exchange with federal agencies.

d. Establish oversight and accountability mechanisms that ensure compliance with the established legal and policy framework by the statewide health information network and participants.

e. Develop a process to evaluate and update the legal and policy framework as part of an annual program evaluation, and more often if necessary, consistent with Objectives (a) and (b) above.

f. Collaborate with neighboring states, beginning with Minnesota, to harmonize laws, regulations, policies, and practices in support of interstate HIE.

Long-Term Goals and Objectives:

1) Evaluate and update the policy framework as part of an annual program evaluation, and more often if necessary, to optimize the electronic exchange of health information while protecting patient privacy.

Position the statewide health information network for participation in the nationwide health information network.

2) Evaluate and update the legal framework as part of an annual program evaluation, and more often if necessary, to enable the electronic exchange of health information while protecting patient privacy.

Position the statewide health information network for participation in the nationwide health information network.

2.3.3.6 Communications, Education, and Marketing

High-Level Goal:

Inform and raise the awareness of consumers and the health community about the benefits of health information technology and health information exchange.

Near-Term Goals and Objectives:

1) Design and implement a comprehensive HIE communication and educational program.

    a. Begin gathering information that will be critical to message development through various methods, such as stakeholder meetings, town halls, surveys, and focus groups, within 90 days of WISHIN assuming responsibilities.

    b. Develop and deploy messages to a broad spectrum of prioritized stakeholders through community partners within 6 months of receiving the results of the stakeholder input.

    c. Develop and deploy targeted messaging to enhance public transparency regarding uses of protected health information (PHI) maintained by HIEs in Wisconsin and individuals' rights related to uses of PHI.

    d. Develop measures to evaluate the success of the initial communications and education campaign within 6 months of receiving the results of the stakeholder input.

    e. Develop and implement a continuous quality improvement plan after 6 months into the campaign.

2) Develop and implement an ongoing marketing program to solicit financial support and engage consumers and the health community in the adoption and use of HIE services.

    a. Once the Strategic and Operational Plan is approved by the ONC, immediately develop marketing strategies and tools to begin communicating the benefits to target stakeholders that are most likely to help capitalize the statewide health information network and services.

    b. Develop a marketing strategy and tools that target stakeholders who are most likely to contribute to the sustainability of the statewide health information network and HIE services within 60 days of WISHIN assuming responsibilities.

    c. Survey the consumer market to identify HIE services they are most likely to use and purchase.

2.3.4 Performance Measures

The WIRED for Health Board intends that, over time, the state-level governance entity for statewide HIE will identify measures and analyze the impact HIE has on the health care process and its intermediate and longer-term impacts on health care quality and efficiency. Designing effective ways to capture and report on these measures will be an ongoing governance responsibility.

The WIRED for Health Board identified a number of preliminary, high-level performance measures that will evolve over time as additional guidance becomes available from the ONC and others, such as the State-Level HIE Leadership Forum and the National Opinion Research Center, and as WISHIN implements the Strategic and Operational Plan. The State Health IT Coordinator will assist WISHIN in the continuing evaluation of effective performance measures for statewide HIE.

The preliminary measures identified by the WIRED for Health Board are:

Overarching HIT and HIE Measurement Areas:

- The percentage of health care providers participating in HIE services enabled by the statewide HIE technical infrastructure and core services.
  - The percentage of health care providers in the state that are able to send electronic health information using components of the statewide HIE technical infrastructure and core services (e.g., Patient Index, Directory Services, Patient Information Locator Service, and Consent).
  - The percentage of health care providers in the state that are able to receive electronic health information using components of the statewide HIE technical infrastructure and core services (e.g., Patient Index, Directory Services, Patient Information Locator Service, and Consent).
- The percentage of pharmacies serving people within the state that are able to connect to the statewide health information network to actively support electronic prescribing and refill requests.
- The percentage of clinical laboratories (including, for example, reference laboratories and the State Laboratory of Hygiene (SLOH)) serving people within the state that are able to connect to the statewide health information network to actively support electronic ordering and results reporting. This includes the ability to respond to queries for results outside of the order/result reporting flow such as the case for newborn screening where access to such data may be useful outside of the "standard" pediatric provider.

Governance

- The state-level governing entity's board composition has broad and balanced public and private stakeholder representation, i.e., Medicaid, public health, hospitals, providers, commercial payers, employers, and consumers.
- There is evidence the state-level governing entity is conducting transparent business operations. For example, the governance entity:
  - Publicly posts its meetings and meetings are open to the public;
  - Has processes to regularly inform the public on progress and performance of the statewide HIE initiative (listservs, media presence, etc.);
  - Makes its policies and procedures available on a public Web site or SharePoint site; and
  - Has a working methodology for regular self-monitoring, evaluation and reporting.

Finance

- A working business plan exists, including a plan to acquire capital funding for implementation and a financial sustainability plan that will support business operations throughout the State HIE CAP performance period and beyond.
- The implementation of financial policies and procedures is consistent with state and federal requirements, including Single Audit requirements of the Office of Management and Budget.

Standards and Architecture

- The ratio of number of encounters in the state and percentage reported to public health for disease surveillance meets or exceeds a yet to be specified percentage.
- The ratio of eligible providers sharing information through electronic HIE and "known" to the Directory Services and those with an EHR meets or exceeds a yet to be specified percentage.
- The ratio of lab results reported directly to EHRs to total number of lab results in comparison to the ratio prior to HIE, recognizing that there is a high uptake of electronic lab reporting in Wisconsin already.

Legal and Policy

- The percentage of patients who opt in/opt out of the HIE (depending on consent model adopted).
- The percentage of participants who are in compliance with their data sharing agreements.

Communications, Education, and Marketing

- The percentage of stakeholders, by stakeholder type, that know the state-level, state-coordinated HIE effort exists, what it is, and how this effort will help eligible professionals and hospitals achieve the meaningful use criteria related to HIE.
- The percentage of stakeholders, by stakeholder type, that have raised awareness on how HIT and HIE improve access to more timely health Information and provide opportunities to improve health decisions, safety, and outcomes.
- The percentage of consumers that have raised awareness on how their electronic personal health information is used, secured, and safeguarded by the statewide health information network.

WISHIN is accountable for reporting to the broader stakeholder community on performance. WISHIN has continued the WIRED for Health Board's strategy of accomplishing broader reporting on performance measures through a focused communications, education, and marketing plan.

WISHIN has taken the preliminary measures into consideration and defines performance measures, along with refined strategies and tactics, on a quarterly basis as part of

WISHIN's reporting to ONC. The State Health IT Coordinator will continue to assist WISHIN in the evaluation and selection of effective performance measures for statewide HIE.

In addition, Section 12 of this SOP includes detailed program evaluation measures as part of an Evaluation Plan required by ONC.

2.4 Stakeholder Endorsement of the Plan

WISHIN has sought to ensure the WIRED for Health implementation effort involves the right mix of people at the right level to represent their respective communities broadly statewide. These people are influential, respected and resourceful, would commit the necessary time to the Board and the Committee work, and are visionaries who would promote solutions for building and funding statewide HIE capacity. The WISHIN Board's standing committees include a geographically and functionally diverse blend of government and private sector members, and the committees have a significant role in influencing and guiding the development and implementation of the SHIN infrastructure, services, and policies. Letters of support endorsing this updated plan from Board members, including the Medicaid Director and State Health Officer are included in Appendix 3.

3 Implementation Progress

In the 2010 SOP, Chapter 11 describes the near-term statewide HIE implementation plan. Chapter 11 provides a goal and objective for Wisconsin to support Stage 1 Meaningful Use requirements, strategies for supporting Direct, along with strategies and tactics for reducing Wisconsin's "white space" (as related to ONC PIN requirements).

This chapter provides an update on Wisconsin's progress toward implementation of all Chapter 11 goals, objectives, strategies and tactics and includes next steps needed in 2012 to continue progress on all of these fronts.

3.1 Implementing Direct to Support Stage 1 Meaningful Use

The following goal and objective was defined in Chapter 11 of the 2010 SOP:

Goal – Deploy a standards-based architecture and initial set of core HIE services (Direct-supporting provider directory and certificate authority) that achieves the following objective:

> Near-Term Objective – By July 1, 2011, the near-term technical infrastructure will be available to support eligible health professionals and hospitals in meeting the Stage 1 Meaningful Use criteria for HIE through the Direct gateway.

3.1.1 Progress through March 2012

1) Representatives from WISHIN, the Wisconsin Health Information Exchange (WHIE)/National Institute for Medical Informatics (NIMI), the Wisconsin Medical Society (WMS), and the state Medicaid program attended ONC's Direct Boot Camp April 12 – 14, 2011, to learn more about the National Direct Project and how it could be leveraged in Wisconsin. The result of this activity was the decision for WISHIN to stand up a HISP and offer Direct secure messaging services in Wisconsin.

2) WISHIN and WHIE/NIMI developed a Request for Proposals (RFP) to contract with a vendor to provide WISHIN-branded HISP services. The RFP was published on June 1, 2011.

3) On July 27, 2011, WHIE/NIMI contracted with Ability Network™ to provide HISP services for Wisconsin. Work to launch HISP services began immediately.

Near-Term Objective Met

WISHIN went live with WISHIN Direct on August 26, 2011, providing the technical infrastructure to support Wisconsin's EPs and hospitals in meeting the Stage 1 Meaningful Use criteria for HIE through Direct, thereby achieving the near-term objective identified in the 2010 SOP.

WISHIN Direct was launched two months later than our original target in order to leverage the learning provided by ONC at the April 2011 Direct Boot Camp. Once the Boot Camp completed, it took less than 4 ½ months to procure, contract, and implement WISHIN Direct.

4) WISHIN, WHITEC, and the WMS collaborated to develop marketing materials, as well as outreach strategies and tactics that would help educate physicians and hospitals about WISHIN Direct and to support providers interested in enrolling, testing their exchange of Continuity of Care Documents (CCDs), and in developing long-term workflows to support the ongoing use of WISHIN Direct in their organizations. Some key deliverables from this work include:

- An HIE matrix that explains the options (including WISHIN Direct) available to providers in meeting Stage 1 Meaningful Use requirements for exchange, and includes key points to help providers make a decision on which option to choose.
- A brochure ("3 Steps to Meaningful Use") that outlines how providers can partner with WHITEC and WISHIN to help meet Stage 1 Meaningful Use requirements.
- A survey, conducted by WMS, that gathers information on physicians throughout the state in order to help WISHIN more accurately target potential Direct users.
- A post-card mailing to all hospitals advertising WISHIN Direct as a way to help them meet their Stage 1 Meaningful Use requirements before the federal deadline, along with other benefits for long-term use of WISHIN Direct in their organization.

5) WISHIN, WHITEC, and the Rural Wisconsin Health Cooperative (RWHC) supported Tomah Memorial Hospital and Memorial Hospital of Lafayette County , Darlington, in their first WISHIN Direct health information exchange. With the exchange of CCDs, these organizations were able to meet the Stage 1 Meaningful Use requirement for HIE for 2011 – and were the first organizations to use WISHIN Direct to do so.

6) WISHIN has trained all WHITEC HIT Specialists on the following:

- How to help providers choose an HIE solution,
- How to help providers enroll in WISHIN Direct,
- How to use WISHIN Direct, and
- How to help providers conduct their test of the CCD exchange.

7) WISHIN and WHITEC have worked to identify eight WISHIN Direct demonstration projects that will be used to demonstrate the use of WISHIN Direct for a variety of use cases and crossing a variety of stakeholders. The timelines for each project are included in the detailed project plan. We have identified participants for all of the demonstrations; however, some participants are still working through their internal organizational processes to get approval to participate. It is possible that some of these demonstrations may not develop as we expect.

Project managers and WHITEC HIT Specialists, as appropriate, are included as part of the Demonstration Project Team.

8) WISHIN has deployed specific strategies for WISHIN Direct related to ONC's 2010 PIN requirements. See sections 3.3.2 and 3.3.3 for how WISHIN Direct will be used to address Laboratory Reporting and Clinical Summary Exchange for Wisconsin's "white space."

3.1.2 Key Successes

Since the launch of WISHIN Direct on August 26, 2011, and through March 2012:

- WISHIN has sold more than 1,100 WISHIN Direct addresses, to more than 20 different organizations.
- WISHIN has identified eight WISHIN Direct demonstration projects; each in various stages of progression.
- WISHIN and WHITEC have successfully facilitated the exchange of CCDs for both hospitals and physicians using WISHIN Direct.

During the first quarter of 2012, WISHIN sold 787 WISHIN Direct addresses to the Wisconsin Medical Society Insurance and Financial Services as a benefit of membership. WISHIN and WMS began rolling out these addresses in March 2012 and will continue roll-out by region until June.

3.1.3 Lessons Learned

WISHIN recognized that multiple options are available to eligible professionals (EPs) and hospitals for meeting Stage 1 Meaningful Use requirements. This is especially true in Wisconsin, where a majority of physicians practice in IDNs and many EPs are able to achieve Meaningful Use through existing exchange infrastructure. With such a high number of IDNs, and with the extension of the Stage 1 Meaningful Use deadline, the demand for WISHIN Direct has been low. That said, WISHIN does not plan to let up on outreach and efforts to further the use of WISHIN Direct. The following section discusses next steps for continuing, and increasing, our momentum with Direct and how that momentum furthers our overall long-term HIE strategy.

3.1.4 Next Steps for WISHIN Direct

The strategies and tactics below are in-work or planned for 2012 with regard to WISHIN Direct.

1) Integration of WISHIN Direct into WISHIN's robust, bi-directional query exchange services offering.

2) Continued work with WHITEC on recruitment for WISHIN Direct and co-branding of materials for outreach.

3) Continued emphasis on closing Wisconsin's "white space".

4) Continued work with WMS's Insurance and Financial Services arm to roll out WISHIN Direct to their members.

5) Continued work on WISHIN Direct demonstration projects, including extensions of the projects to include:

   a) Continued work on identification of "fax" end-points to conduct outreach, recruit for demonstration projects, and build the WISHIN Direct "network".

   b) Incorporating additional community partners (local public health departments, hospitals, long-term care, FQHCs, or other community providers depending on the use cases).

   c) Further integration with existing systems (e.g. integration of WISHIN Direct into EHR systems as those systems become Direct-enabled).

   d) Adding use cases to the project.

3.2 Supporting Direct

Chapter 11 of the 2010 SOP includes the following near-term activities for supporting Direct:

1) Provide technical assistance to EPs who are solo and small-practice providers and need support in achieving Meaningful Use HIE requirements.

2) Work collaboratively with Wisconsin's provider, hospital, and pharmacy associations to reach out to providers, reference labs, and pharmacies not presently exchanging health information electronically as part of one of the existing HIE networks in the state.

3) Leverage any existing relationships with EHR vendors providing service in the state, such as those on WHITEC's Value Vendor list, to encourage the configuration of their products to align and work with the Direct messaging standards and specifications.

4) Provide subsidized technical assistance to providers and reference laboratories to leverage Direct, focusing on rural and underserved areas of the state.

5) Regular monitoring and reviewing the needs of EPs by tracking their HIT/EHR and HIE adoption rate.

Significant progress has been made toward each of these activities. The sections below outline the progress made to date, and the continued work on these activities.

3.2.1 Technical Assistance to EPs in Solo and Small Practice

WHITEC, WISHIN, and WHIE continue to provide technical assistance to EPs in solo or small practices that require support to achieve Meaningful Use HIE requirements. WISHIN and WHITEC collaborate extensively to provide a seamless experience for EPs in solo and small practices. In everything from marketing materials and training, through

collaborated testing of an exchange, we ensure that the customers receive the support and assistance they need to achieve Meaningful Use HIE requirements.

WISHIN, WHITEC and WHIE will continue to provide technical assistance as we move into 2012. Our collaboration will expand with the WISHIN Direct demonstration projects and will include assistance on workflows and the inclusion of other health care providers in the community. We will continue to work together to identify where we can leverage each other's expertise as we learn more about Stage 2 Meaningful Use requirements and as we roll out demonstration projects for our robust HIE services.

3.2.2 Collaborate with Professional Associations and Outreach for White Space

The State Health IT Coordinator, WISHIN, WHIE, and WHITEC work collaboratively, along with Wisconsin's provider, hospital, and pharmacy associations, to reach out to providers, reference labs, and pharmacies not presently exchanging health information electronically as part of one of the existing HIE networks (i.e., those in the "white space").

Below are some of the specific outreach activities conducted to-date:

1) Telephone outreach to more than 700 laboratories included in Wisconsin's baseline "white space" for laboratories.

2) Telephone outreach to more than 40 pharmacies included in Wisconsin's baseline "white space" for pharmacies.

3) Stakeholder outreach to key contacts for existing HIE networks in the state to obtain updated/current information on the physicians included in their network.

4) Work with the Wisconsin Medical Society to gather updated information on physicians in the state.

5) Email outreach conducted by the Wisconsin Medical Society to more than 5,300 of their member physicians. The outreach asked physicians to participate in a survey (designed by WISHIN) to collect updated information on whether they have an option for exchanging health information, if they have an EHR system, and if so, which system they use.

6) Post card mailings to all hospitals in Wisconsin regarding WISHIN Direct and Meaningful Use.

7) Calls to reference laboratories to ascertain interest in lab-related WISHIN Direct demonstration projects (offering subsidized assistance for participation).

8) We have spoken about WISHIN and WISHIN Direct at several different stakeholder and association meetings/conferences throughout the state, including:

   - The Wisconsin Dental Association Board
   - The Wisconsin Education Association Insurance Trust

- The Wisconsin Hospital Association North Central and West Central Regional meetings
- The Wisconsin Hospital Association Rural Health conference
- The MetaStar Quality Symposium
- The Anthem Blue Cross Blue Shield Provider Expo
- HIMSS Dairyland
- Wisconsin Pharmacy Society Board
- LeadingAge Wisconsin Board
- HIPAA COW Spring Conference
- CLIA Midwest Consortia Meeting
- UW Extension Broadband Community Meeting
- Wisconsin Public Health Nurse Consultants Meeting

9) We have also conducted five WISHIN Direct education sessions throughout the state with a goal of completing at least three education sessions per quarter.

3.2.3 Leverage Relationships with EHR Vendors to Encourage Alignments with Direct

WISHIN, WHITEC, and WHIE held conference calls with each of the WHITEC EHR Value Vendors to discuss WISHIN Direct and to gain a better understanding of where each vendor was with regard to incorporating Direct into their product(s). These discussions provided valuable insight into the approach of the various EHR vendors with regard to Direct and afforded an opportunity to discuss opportunities for collaboration.

While some of the vendors indicated a willingness to work with WISHIN to demonstrate the use of WISHIN Direct with their products, none of the vendors were ready to initiate this work until their products had been "Direct enabled." For most vendors, their timeline for being "Direct enabled" was late 2012. In these cases, we agreed to have a follow-up meeting mid-2012 to touch base and determine next steps.

Since Epic is a primary EHR vendor in Wisconsin, WISHIN, WHIE, and the State Health IT Coordinator arranged an in-person meeting with several lead developers on Epic's interoperability team to discuss WISHIN Direct and Epic's plans for supporting Direct in their product. This discussion gave us a better understanding of the challenges that an EHR vendor has in integrating Direct into their product, including their primary challenge of integrating provider-centric messages (Direct) into a patient-centric application (EHR) - particularly because the Direct message "envelope" cannot contain any patient-identifiers (per the National Direct project specification). Despite the challenges, Epic representatives agreed to continue discussions with WISHIN about Direct and about future HIE-related activities, but indicated that they would not likely have a Direct-enabled version of their product to release until second quarter of 2012, and even then it would likely be targeted at a single use case (referrals).

3.2.3.1 Subsidized Technical Assistance for Providers

WISHIN, WHITEC and WHIE offer subsidized technical assistance to all WISHIN Direct customers and prospective customers. This has included training sessions on WISHIN Direct, as well as pre-enrollment technical assistance (how should I configure my WISHIN

Direct address?), guided walk-throughs of specific functionality (how do I send a message?), configuration assistance (how do I use WISHIN Direct with Microsoft Exchange?), and trouble-shooting assistance (when errors occur). All of these services are provided free-of-charge to the customer.

WISHIN and WHIE also offer subsidized technical assistance to all providers participating in one of the eight WISHIN Direct demonstration projects. Demonstration project participants receive the WISHIN Direct addresses needed to support the demonstration project free of charge for one year. WISHIN and WHIE also supply participants with the project management and technical support needed for the demonstration. This includes (as appropriate for the demonstration):

- All project management activities, including coordination activities, status reporting, project scheduling, meeting facilitation, issue management, etc.
- All business analysis activities, including work flow and data analysis.
- All technical support activities needed to complete the demonstration. This includes working with on-site technical resources as well as coordination with Ability (the Direct vendor).

3.2.3.2 Subsidized Technical Assistance for Reference Laboratories

During the summer of 2011, WISHIN created an ad-hoc Laboratory Advisory Committee to assist in the development of strategies for reducing Wisconsin's laboratory white space (for more information on WISHIN's work related to Wisconsin's laboratory white space, see section 3.3.2 below). This committee consisted of representatives from both public and private laboratories, as well as the Rural Wisconsin Health Cooperative (RWHC), WISHIN, WHIE, and the state.

While the committee's primary objective was to help WISHIN develop a call script that could be used for outreach to laboratories to determine if they were in Wisconsin's white space, the committee also provided insight and recommendations related to the use of WISHIN Direct by Wisconsin laboratories and WISHIN's offer to subsidize changes to the laboratories' existing systems to support WISHIN Direct.

Our ad-hoc Laboratory Advisory Committee members provided us with the following significant concern:

> Reference laboratories already have sophisticated messaging capabilities built in to their systems and work flow processes. Unless a critical mass of providers that they supply lab results to are using WISHIN Direct, the labs will not make changes to these already-working systems – even if WISHIN were to subsidize those changes completely.

Despite the concern of the ad-hoc committee, WISHIN conducted targeted outreach to a few private reference laboratories in Wisconsin's white space that we believed had less sophisticated systems. Our goal was to recruit participation in lab-specific WISHIN Direct demonstration projects that would include the lab and five providers in their community that they regularly send lab results to. Despite offering to subsidize the changes to their systems and to work with them and their providers to develop the work

flows needed, we did not have any success. None of the labs we spoke with agreed to participate. Each lab indicated that they weren't willing to switch an existing process for a small handful of providers. Even those without automated systems said that implementing Direct would only mean they had to support multiple work flows – and they weren't staffed adequately to do that.

It is important to note that Wisconsin's laboratory white space is quite small, with only 16 laboratories not currently able to exchange lab results electronically.

While our initial attempts to engage laboratories in a WISHIN Direct demonstration have been met with very little success, we have not discontinued our efforts. The Wisconsin State Lab of Hygiene (SLH) was listed in Wisconsin's laboratory white space and has completed a WISHIN Direct demonstration for delivering Newborn Screening results to three clinics in western Wisconsin. This WISHIN Direct demonstration project completed the first quarter of 2012 and, while the demonstration showed an unsustainable workflow on the part of the laboratory, the SLH has agreed to engage with us again in later 2012 to see where automation opportunities may exist.

3.3 ONC PIN Requirements – Wisconsin's White Space

In 2010, the WIRED for Health Project completed a preliminary baseline measurement of the HIE capabilities of health care providers to exchange care summaries, of pharmacies to electronically receive prescriptions and refill requests from providers, and of labs to electronically deliver results to providers. The baseline measurements showed that Wisconsin had gaps in all three areas.

In 2011, WISHIN made significant progress in data collection and validation, including reconciliation of duplicate records and outreach to non-responders. WISHIN also identified and collected additional information from:

- Providers
- Pharmacies
- Labs
- WHITEC
- Existing HIEs and IDNs
- The state Provider Assessment
- The Wisconsin Medical Society
- The National Level Repository

Collectively, DHS, WISHIN, WHITEC, EHR vendors, and existing HIE networks across the state provided options so that every provider could meet Stage 1Meaningful Use HIE requirements.

The strategies we've implemented or that are in-progress for clinical summary exchange, electronic prescribing, and lab results are outlined in the section below.

3.3.1 Pharmacies

Our 2011 goal for e-prescribing was to achieve a 50% reduction in the number of pharmacies that were not able to receive prescriptions and refill requests electronically with a particular focus on eliminating white space. Table 3.3.1 below shows the original 2010 status of e-prescribing in Wisconsin, along with the 2011 progress toward our goal.

	2010	2011
Total Pharmacies in Wisconsin **LESS: Not a Pharmacy, Closed, Inpatient Only, etc.**	1,264	1,264 6
Wisconsin Pharmacy Baseline **LESS: Already e-prescribing**	1,264 1,201 (95%)	1,258 1,241 (98.6%)
Pharmacies in the White Space	63 (5.0%)	17 (1.4%)

Table 3.3.1 Pharmacy e-Prescribing Summary

WISHIN periodically reconciles its data with the SureScripts data made available to states on the HITRC. In addition, WISHIN has conducted outreach to more than 75 pharmacies in the state. Through its outreach, WISHIN removed six pharmacies from Wisconsin's baseline because they had either closed, were in-patient only, did home infusions only, or were veterinary pharmacies. The outreach efforts also revealed an additional 40 pharmacies that were able to accept electronic prescriptions.

WISHIN worked with stakeholders to solidify our understanding of the original pharmacies that were not capable of accepting electronic prescriptions and refill requests. We used this information to target our e-prescribing adoption efforts on pharmacies in geographic regions with few e-prescribing options for providers (see section 3.3.1.1 Focus Counties for Pharmacies).

WISHIN targeted outreach to the pharmacies that had no ability to accept electronic prescribing. The State Health IT Coordinator and WISHIN interviewed these pharmacies to identify potential barriers and incentives for pharmacies to participate and encourage their adoption of e-prescribing. Our goals for our outreach efforts were:

1) To match providers in rural areas whose primary pharmacy doesn't accept electronic prescriptions and refill requests with an alternative pharmacy that does.

2) To offer assistance in selecting e-prescribing software or services to pharmacies that are not e-prescribing. Prior to implementing WISHIN Direct, these options were to use an existing e-prescribing software package/service such as SureScripts; however, after launching WISHIN Direct we were able to include WISHIN Direct as one of the options.

Several other approaches were identified in the 2010 SOP to help WISHIN achieve the 50-percent reduction in white space, including using Medicaid and state licensure vehicles, policy levers, and technical assistance; however, the initial outreach and research efforts revealed such a low number of Wisconsin pharmacies that were not

able to accept electronic prescriptions, that none of these other approaches were necessary.

Results: At the end of 2011, approximately 98.6 percent of pharmacies in Wisconsin currently accept electronic prescriptions and refill requests. The remaining 1.4 percent of pharmacies not capable of accepting electronic prescribing and refill requests represent our revised white space gap (see Figure 3.3.1 for details on Wisconsin's e-prescribing white space).

Of the remaining 17 pharmacies in Wisconsin's white space, three have indicated that they are moving to e-prescribing in 2012, two indicated that they have no plans to move to e-prescribing, and the remaining 12 indicated that they were currently using faxes and were unsure of their plans to e-prescribe.

During the first quarter of 2012, WISHIN contacted the 17 pharmacies in Wisconsin's white space to get updated information on their status toward e-Prescribing. There are currently 8 pharmacies in Wisconsin that are not e-prescribing. WISHIN will continue to reach out to 8 white space pharmacies in 2012.

Figure 3.3.1 shows a geographical representation of Wisconsin's e-prescribing "white space" at the end of 2011.

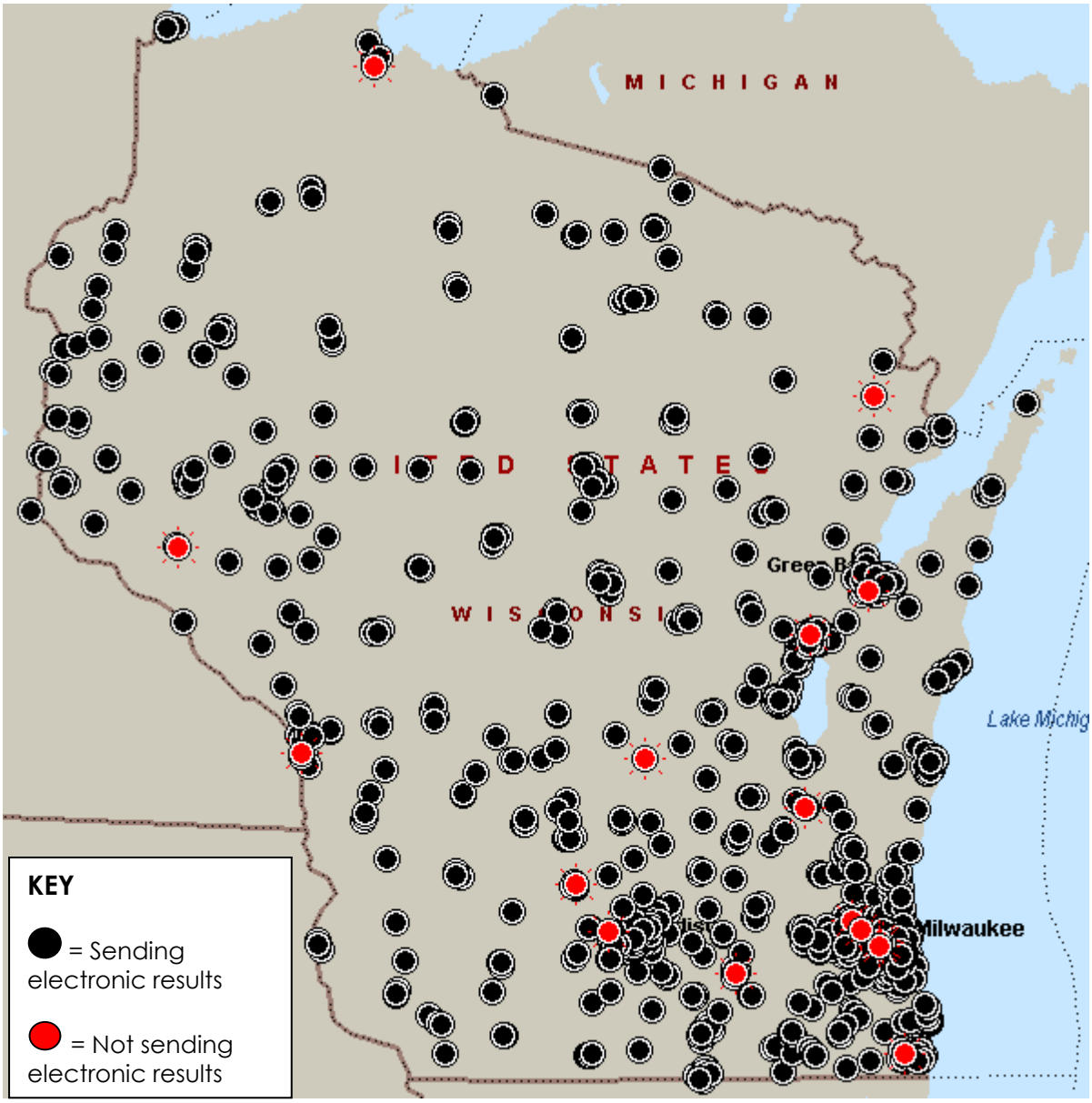

Figure 3.3.1 Wisconsin's Pharmacy "White Space" Map (Year End 2011)

3.3.1.1 Focus Counties for Pharmacy

Wisconsin's 2010 environmental scan showed that at least one pharmacy currently accepts electronic prescriptions in all counties except two: Florence and Menominee Counties. According to our data, Florence County did not have any pharmacies, and Menominee County had a pharmacy that didn't accept electronic prescriptions. This meant that providers in all but one county with pharmacies had at least one option for e-prescribing.

WISHIN first focused its research efforts on Menominee County. The population of Menominee County is approximately 4,500 (as of the 2000 census). Most of the land within the county boundary is under Federal Trust for the exclusive use by enrolled

Menominee Indians. Scattered parcels are the only parts of the county that are privately owned by non-Indians. The Menominee Tribal Clinic Pharmacy is the primary pharmacy serving Menomonee County. WISHIN's research revealed that the Menomonee Tribal Clinic Pharmacy was able accept electronic prescriptions using SureScripts and is part of the SureScripts network. This meant that Menominee County providers had at least one option in their county for e-prescribing.

WISHIN next focused on Florence County, which did not have a pharmacy listed in our original data. The population of Florence County is approximately 5,000 (as of the 2000 census). WISHIN researched Florence County to try to locate a pharmacy within the county and was able to find Morton Pharmacy in Long Lake. WISHIN outreached to Morton Pharmacy in Long Lake and learned that the pharmacy was capable of accepting electronic prescriptions. This outreach was later validated using the SureScripts data provided on the HITRC.

Through its research and outreach in 2011, WISHIN has been able to confirm that at least one pharmacy in each of Wisconsin's counties is able to accept electronic prescriptions.

2012 Strategy: WISHIN strategy for e-prescribing in 2012 is to continue to monitor the pharmacies in Wisconsin's white space and periodically check on their progress toward e-prescribing. Because Wisconsin's e-prescribing white space is so small, WISHIN will not focus 2012 efforts in this area; however, WISHIN will continue to monitor the e-prescribing environment in Wisconsin and evaluate how e-prescribing should be incorporated into its robust, bi-directional HIE, including offering pharmacies the ability to submit the state-mandated controlled substance dispensing reports to the Prescription Drug Monitoring Program (PDMP) when they are ready.

3.3.2 Laboratories

Our 2011 goals for laboratories were to:

1) Have a highly refined list of targeted reference labs by the end of Q1 2011.
2) Reduce the laboratory white space by 50 percent by the end of 2011.

WISHIN focused its laboratory efforts only on reference labs that delivered results outside of their legal entity. Laboratories that did not deliver lab results outside their legal entity were considered the responsibility of the provider entity it served.

In addition, WISHIN did not capture details regarding a laboratory's ability to deliver structured lab results electronically using the LOINC standards. Throughout 2011, significant work was being done at the federal level to define the standards required for laboratory data. Rather than hold up its outreach efforts until the standards work was complete, WISHIN decided to focus its efforts on getting laboratory data moving electronically, regardless of whether the data was in a structured or unstructured format.

Figure 3.3.2 below shows the 2011 progress toward our goals to refine the data and reduce our laboratory white space by 50 percent.

	2010	2011
Total CLIA or CAP Labs in Wisconsin	771	771
LESS: data cleanup (not a reference lab, closed, duplicate, not a lab, etc.)	N/A	569
Wisconsin Laboratory Baseline	771	202
LESS: Delivering results electronically	N/A	186 (92.1%
Laboratories in the White Space	N/A	16 (7.9%)

Table 3.3.2 Laboratory White Space Summary

During 2011, WISHIN focused its initial efforts on refining the original data set. This was done using the following methods:

- We conducted outreach to all 771 labs using a structured call script that was designed by our ad-hoc Laboratory Advisory Committee.
- We validated existing data against CLIA data to ensure the labs were classified correctly.

These methods allowed us to target outreach efforts for the remainder of the year on those labs that were in our laboratory baseline.

As we noted above and in section 3.2.3.2, during the summer of 2011, WISHIN created an ad-hoc Laboratory Advisory Committee to assist in the development of strategies for reducing Wisconsin's laboratory white space. This committee consisted of representatives from both public and private laboratories, as well as the RWHC, WISHIN, WHIE and the State.

While the committee's primary objective was to help WISHIN develop a call script that could be used for outreach to laboratories to determine if they were in Wisconsin's white space, the committee also provided insight and recommendations related to the use of WISHIN Direct by Wisconsin laboratories and WISHIN's offer to subsidize changes to the laboratories' existing systems to support WISHIN Direct.

Our ad-hoc Laboratory Advisory Committee members provided us with the following significant concern:

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It is important to note that Wisconsin's laboratory white space is quite small, with only 16 laboratories not currently able to exchange lab results electronically.

While our initial attempts to engage laboratories in a WISHIN Direct demonstration have been met with very little success, we have not discontinued our efforts. The Wisconsin State Lab of Hygiene (SLH) was listed in Wisconsin's laboratory white space and agreed to a WISHIN Direct demonstration for delivering Newborn Screening results to three clinics in western Wisconsin. This WISHIN Direct demonstration project completed the first quarter of 2012 and did not have favorable results (the workflow needed to support Direct secure messaging for newborn screening lab results delivery was not sustainable); however, the SLH has agreed to consider continued work in late 2012 to see if any further automation might alleviate some of the issues.

2011 Results: Today, approximately 92 percent of accredited and compliant reference labs in Wisconsin have the ability to deliver lab results electronically. The remaining 7.9 percent of laboratories not capable of sending laboratory results electronically represent our revised white space gap (see Figure 3.3.2 for details on Wisconsin's laboratory white space).

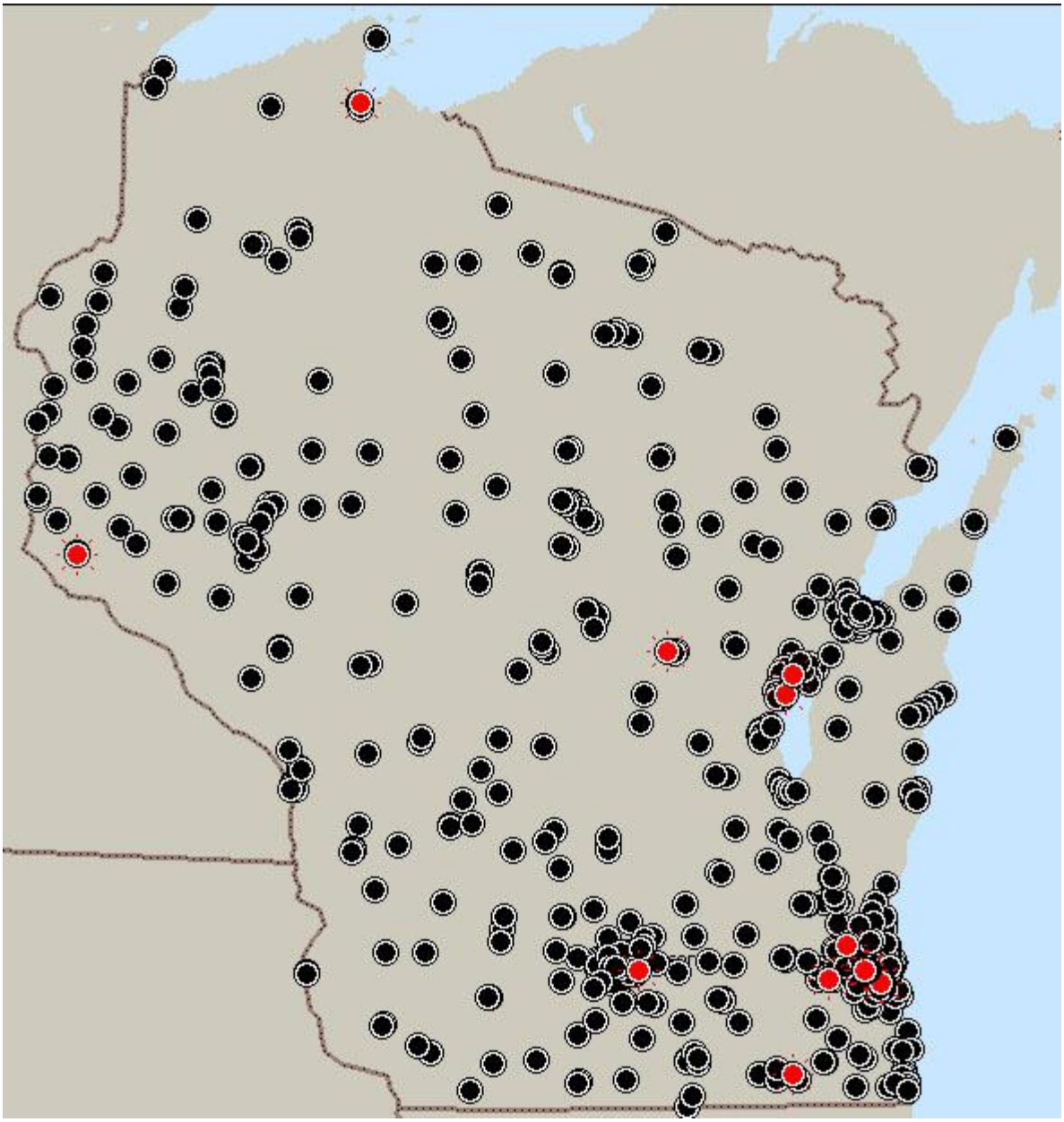

Figure 3.3.2 Wisconsin's Laboratory "White Space" Map (Year End 2011)

2012 Strategy: WISHIN's 2012 lab strategy is to engage reference laboratories serving Wisconsin providers in HIE.

In early 2012, WISHIN began work with the University of Wisconsin Survey Center to complete detailed assessments of both laboratories and physicians. The laboratory component of the assessment will determine the ability of Wisconsin's Accredited and Compliance Reference Labs to electronically send structured lab results to office-based physicians. The laboratory assessment is necessary because Wisconsin's 2011 strategy did not focus on *structured* laboratory results. Since federal work on laboratory standards has made significant progress in 2011, WISHIN will work to re-define its laboratory white space to reflect the abilities of Wisconsin laboratories to produce

structured results. The laboratory assessment will also include identification of barriers and challenges for labs so that WISHIN can better determine how to engage the laboratories in HIE. This work will be evaluated in the context of our efforts toward a robust, bi-directional HIE in 2012, since several HIE vendors offer laboratory-related solutions/services that can help to fill any gaps in this area.

The physician component of the assessment will determine the extent to which Wisconsin physicians use or have access to labs that can send them structured lab results. This will provide WISHIN with a better understanding of how physicians are impacted by the laboratory environment in the state and will allow WISHIN to ensure that all physicians have a laboratory option available to them for meeting Meaningful Use requirements for laboratory results. As with the laboratory component of the assessment, the physician assessment will also include identification of barriers and challenges for physicians. This will help WISHIN determine if physician-related levers are needed to influence the laboratory environment in the state.

To a large degree, the laboratory and physician assessment results will inform WISHIN's 2012 tactics for engaging labs in HIE; however, there are a few tactics that continued from 2011, including:

1) In the first quarter of 2012, WISHIN completed a demonstration of laboratory results delivery with the State Laboratory of Hygiene using WISHIN Direct.
2) WISHIN continues to reach out to the remaining 16 reference labs in the state's white space. Because demonstration with the State Laboratory of Hygiene was not successful (other than that it provided important lessons learned for WISHIN and the participants) the outcome is not likely to spark the interest of other laboratories in the white space. Therefore, WISHIN will try to focus efforts on providers that use those 16 laboratories to see if a provider-initiated demonstration project is more appealing to the laboratory.

3.3.3 Care Summaries

As noted in Wisconsin's 2010 SOP, the 2011 focus for Wisconsin was on establishing an infrastructure and policy framework that enabled the exchange of care summaries. Wisconsin recognized that full exchange (push-pull) capability would not be operationally achievable in 2011 to meet the ONC's CAP requirements for Stage 1 Meaningful Use, so WISHIN pursued an interim, near-term technical strategy to incrementally achieve its long-term goals.

There are already several HIE "networks" operating in Wisconsin that offer significant HIE coverage in the state; however, we know that not all providers in the geographic areas covered by these networks have EHRs and/or are participating in at least one of these networks. Approximate coverage by HIE in the state at the end of the first quarter in 2012 is shown in the following table.

HIE Activities	Geography Coverage	Number of Physicians	Percent of Coverage
HIE-Bridge (formerly CHIC)	Northwest WI	67	0.5%
Epic Care Everywhere	Multiple	6,129	43%
KCIN	Eastern WI	320	2%
	Western WI		
Ministry/Marshfield Exchange	Central WI	1321	9%
HSHS	Multiple	2,725	19%
WHIE	Southeast WI	204	1%
WISHIN Direct	Multiple	532	4%
Total Providers in Wisconsin[1]		**14,232[1]**	

Table 3.3.3 HIE Statewide Activities1

[1]The numbers above include (1) hospital-based physicians and (2) non-active physicians. WISHIN will continue to refine the numbers in 2012 and will appropriately exclude those physicians who should be excluded. WISHIN will remove hospital-based providers who only practice in a hospital (some may practice in a hospital and a clinic) and will also remove retired or non-practicing physicians from this list once that information can be verified.

The data contains overlap between HIE activities in the state. About 38 percent (5,371) of Wisconsin physicians belong to more than one HIE. Some physicians belong to many HIEs.

Wisconsin's care summary "white space" is identified as those providers not currently participating in one of the existing exchange activities in the state.

Physicians in the "white space" have the option of (1) affiliating with one of the existing HIEs, (2) participating in HIE-Bridge (if they are in that medical trading area), or (3) using WISHIN Direct.

This section describes how WISHIN has assisted providers in Wisconsin's "white space" to use WISHIN Direct to exchange care summary information with other known, trusted providers or patient-authorized entities to meet the HIE requirements for Stage 1 Meaningful Use. It is important to note that WISHIN did not limit the use of WISHIN Direct to only "white space" providers.

Strategies to Fill the Gap: The following strategies to support Stage 1 Meaningful Use for exchange of clinical summaries were completed:

1) Stand up a HISP (WISHIN Direct)

WISHIN's HISP services became operational on August 26, 2011. WISHIN contracted with Ability Network™ to provide WISHIN-branded HISP services in accordance with the standards established by the National Direct Project.

2) Work with WHITEC to assist providers and hospitals wanting to attest to Meaningful Use in conducting their test exchange of a CCD using WISHIN Direct.

The first CCD exchange tests using WISHIN Direct were conducted on September 23, 2011, by Tomah Memorial Hospital and the Memorial Hospital of Lafayette County in Darlington, WI. Both are rural, critical access hospitals. WISHIN worked with the RWHC, a sub-recipient of the REC grant awarded to WHITEC, to help the hospitals enroll in WISHIN Direct and complete the necessary participation agreements. RWHC worked with each hospital to generate a CCD from their certified EHR systems (both hospitals use HMS). Once both hospitals were able to generate their CCDs, WISHIN and RWHC held a joint conference call with the hospitals in order to facilitate the test exchange. During the call, we stepped the hospitals through the process of logging in to the WISHIN Direct secure messaging portal, creating a message, attaching the CCD, and sending the message. Each hospital was able to confirm receipt of the sending hospital's CCD and sent a confirmation reply to the originating hospital to document the successful test.

Since the end of September 2011, WHITEC, RWHC and WISHIN have worked with several other hospitals and physicians across Wisconsin to conduct their test exchanges using this same process or a variation of the process that is convenient to the participants. Whenever possible, WHITEC, RWHC and WISHIN work with the WISHIN Direct participant to engage a partner organization/entity in their community and enroll that partner in WISHIN Direct. In cases where this is not possible, outreach is conducted to existing WISHIN Direct participants to secure an exchange partner.

3) Identify the physicians by name in the "white space" associated with: WHIE, Epic, the Marshfield/Ministry network, the KCIN network, and/or HIE-Bridge (formerly CHIC) and match the names against the list WMS provided from their provider directory of all actively practicing physicians.

WISHIN is continually obtaining updated information from the existing Wisconsin HIEs and reconciling that information against our current data. We expect to continue to receive updates on a periodic basis.

4) Work with the Wisconsin Medical Society (WMS) to outreach to existing physicians to obtain updated information about their practices. Use the outreach as an opportunity to "soft sell" WISHIN Direct and get the word out about WISHIN.

During September, WISHIN designed an online survey to collect updated information from Wisconsin physicians regarding their EHRs, their intent to attest to Stage 1 Meaningful Use in 2011 or 2012, and to gather updated information about their practice and about any existing Wisconsin HIE in which the physician may be participating. The survey included links to WISHIN's website, along with links to additional information about WISHIN Direct.

To encourage responses to the survey WISHIN promoted the survey by registering each survey respondent in a drawing for an iPad.

WMS emailed the survey to more than 5,000 physicians in the state. The survey was accompanied by a joint message from WMS's interim CEO and WISHIN's CEO encouraging physicians to participate. A "reminder" message was sent to physicians two weeks before the end of the survey period.

The survey period closed on December 2, 2011. Three hundred and eighty one physicians responded to the survey. The survey winner was contacted on December 6h. WMS sent a "thank you" message to all participants and included an announcement of the iPad winner. The iPad winner was also announced in the WISHIN e-newsletter.

The information gathered from the survey is currently being used to update WISHIN's records and help in identifying the white space baseline for care summary exchange within the state.

5) Conduct education sessions across the state to educate health care providers about WISHIN and WISHIN Direct.

WISHIN held two education sessions – one in Wisconsin Dells, the other in Wausau.

6) Outreach to all Wisconsin hospitals about WISHIN and WISHIN Direct.

A direct mailing postcard was sent to all Wisconsin hospitals on September 9, 2011, in order to ensure that hospitals wanting to attest to Stage 1 Meaningful Use could do so before the deadline. The postcard also promoted WISHIN's attendance at the Wisconsin Hospital Association's 2011 Annual Convention and encouraged hospital representatives attending the event to stop by the WISHIN booth to learn more about WISHIN and WISHIN Direct.

7) Work with WHITEC to educate their HIT Specialists on WISHIN Direct, create co-branded (WHITEC-WISHIN) materials for the HIT Specialists and WISHIN's Outreach Specialist to use when working with physicians and hospitals.

WISHIN conducted training sessions for WHITEC HIT Specialists on enrolling and using WISHIN Direct. The first round of training was conducted in September with a follow-up training in December. Initial marketing materials were created and are in use; additional co-branded materials are in-work.

In addition, WISHIN is offering WISHIN Direct to all of WHITEC's customers at half price. WHITEC created a special "coupon" to promote this special.

8) Establish several WISHIN Direct demonstration projects to demonstrate various use cases for WISHIN Direct.

A total of eight WISHIN Direct demonstration projects have been identified. We have identified participants for all of the demonstrations; however, some participants are still working through their internal organizational processes to get approval to

participate. It is possible that some of these demonstrations may not develop as we expect. Project managers and WHITEC HIT Specialists have been assigned to each of the demonstration projects (where appropriate).

2011 Results: Figure 3.3.3 below shows the progress toward our goals through March of 2012 for care summary exchange. The numbers below include (1) hospital-based physicians and (2) non-active physicians. Therefore, both the "white space" numerator and the universe denominator are larger than they should be. WISHIN will continue to refine the numbers in 2012 and will appropriately exclude those physicians who should be excluded. WISHIN will remove hospital-based providers who only practice in a hospital (some may practice in a hospital and a clinic) and will also remove retired or non-practicing physicians from this list once that information can be verified.

WISHIN Direct has been a key part of WISHIN's strategy to close the care summary "white space" in Wisconsin. Many organizations purchased a single WISHIN Direct address to cover multiple physicians at their office.

Figure 3.3.3.2 shows the disbursement of Wisconsin physicians across the existing HIE networks in the state.

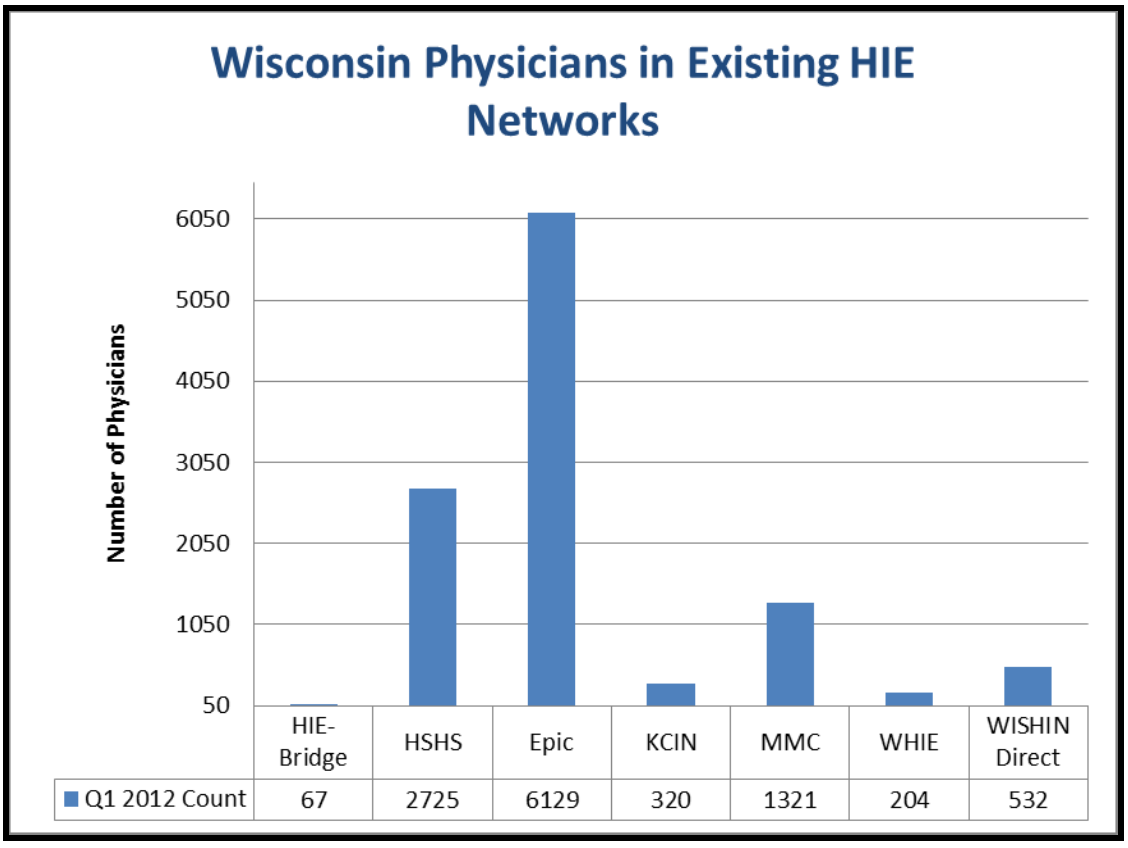

Figure 3.3.3 Number of Physicians in an Existing HIE Network in Wisconsin

Almost 38 percent (5,371) of Wisconsin physicians participate in more than one existing HIE network in the state. Many are in multiple networks. Figure 3.3.3 shows the count of

physicians in each network. If a physician is in multiple networks, they are counted one time in each network they belong to.

Table 3.3.4 below shows the "white space" counts for care summary exchange through the end of March 2012.

	End of Q1 2012	
White Space	Count	Percent
Yes	5,439	38%
No	8,793	62%
Total Physicians in WI	**14,232**	

Table 3.3.4 Care Summary "White Space"

In table 3.3.4, the 5,439 physicians that are still in the white space belong to none of the existing networks noted in table 3.3.3 above.

2012 Strategy: Wisconsin's care summary "white space" is identified as those office-based physicians not currently participating in one of the existing exchange activities in the state that is capable of supporting the exchange of care summaries between unaffiliated providers.

Wisconsin's care summary strategy for 2012 is to continue to ensure all physicians in office-based practices in Wisconsin have an HIE option available, whether it is by affiliating with one of the existing health care entity-related HIEs, participating in HIE-Bridge (if they are in that medical trading area), or by using WISHIN Direct.

WISHIN will employ the following tactics to meet this strategy in 2012:

1) Continue to offer WISHIN and WISHIN Direct education sessions, seek speaking opportunities for WISHIN, and employ other outreach mechanisms to "get the word out" about WISHIN and WISHIN Direct.

2) Work with Ability Network™ to expand the features of WISHIN Direct in ways that not only add value to the existing users but also offer opportunities to promote the adoption of WISHIN Direct by others that may not be using Direct for exchange.

3) Create a provider directory, in multiple forms, of all WISHIN Direct users.

4) Continue work with WHITEC and other partners to outreach to physicians, hospitals and Eligible Professionals (EPs) to assist in education on WISHIN, HIE, and WISHIN Direct. Strategize with WHITEC on ways that WHITEC HIT Specialist staff can assist WISHIN and Wisconsin providers in adopting and using WISHIN Direct.

5) Continue to provide subsidized technical assistance to physicians seeking to attest to Stage 1 Meaningful Use in 2012 using WISHIN Direct.

6) Work with Wisconsin Medicaid staff to identify and document feasible policy levers and communication/outreach activities the Medicaid HIT project team can pursue/support to promote adoption of Direct among Medicaid providers.

7) Work with the UW Survey Center to conduct an assessment of providers related to laboratories; leverage the assessment to further gather and refine data about Wisconsin providers

8) Continue to research and refine the data on physicians in Wisconsin through continual updates from existing HIEs.

9) Continue discussions with EHR vendors to identify opportunities to demonstrate WISHIN Direct within their product.

10) Continue to work with WMS for outreach activities, including ongoing work with WMS's Insurance Services arm.

4 HIT Adoption

(HIT Adoption was in Section 3 in the 2010 SOP)

The need to obtain significant statewide adoption of HIT by health care providers, hospitals, long-term care and aging facilities, and public and tribal health departments is fundamental to the development of a SHIN and achieving a statewide HIE capability. Wisconsin has historically had a high rate of HIT adoption and continues to make steady progress with the support providers and hospitals are receiving through the HITECH programs.

4.1 Ambulatory Care Providers and Hospitals

EHR adoption among ambulatory care providers and hospitals is significantly higher than the national average. One of the major reasons for this is the structure of Wisconsin's health care delivery system. According to 2011 data from the Wisconsin Medical Society, about 74 percent of Wisconsin's practicing physicians in the state are in a group practice of 50 or more physicians and 67 percent are in practices of 100 or more physicians. Wisconsin has approximately 1,000 physicians (or eight percent) in a group with two to nine physicians and 600 solo practitioners (less than five percent). The majority of the large-group practices has either implemented an EHR system or is in the process of implementing a system. Large-group practices and IDNs typically have greater access to financial and administrative resources making acquisition, implementation, operation, and maintenance of EHR systems more attainable. However, we do not know how many of these practices presently meet the new EHR certification requirements. We assume most if not all had to upgrade their systems at a minimum to conform to the Meaningful Use certification standards. At the end of the first quarter in 2012, Wisconsin had nearly 5,000 (38%) physicians (MDs or DOs) and just over 1,000 of the other EP types (i.e., chiropractors, nurse practitioners, etc.) registered for either the Medicare or Medicaid EHR incentive Program.

The last HIT Adoption survey conducted by DHS in 2008 estimated 60 percent of office-based physicians used an operational EHR. Wisconsin anticipates being able to update its EHR adoption data using the data being collected by WISHIN, WHITEC, and WMS, such as through the clinic assessment survey being done by the UW Survey Center for WISHIN in 2012 and WHITEC's sales force data on its customers. We anticipate the adoption rate will be greater than 70 percent given the Meaningful Use incentive program and the number of small practice providers being assisted by WHITEC that have documented go-live with certified EHR technology in 2011and 2012.

	Office-based physicians	Rate of physicians using operational EHR	Office-based physicians using operational HER
Physicians in small practices	3,650	33.00%	1,200
Physicians in large practices	8,110[5]	72%	5,810
Total physicians	**11,760[6]**	**60%**	**7,010**

Table 4.1.1 Ambulatory care EHR adoption in Wisconsin7

The 17 Wisconsin federally qualified health centers (FQHCs) listed below are in various stages of EHR adoption. Approximately 85 percent of community health centers are either meaningful users or currently selecting/implementing an EHR. Fifteen percent of community health centers do not have an EHR and are in a various stages of HIT adoption.

Wisconsin FQHCs:

- Access Community Health Centers
- Bridge Community Health Clinic
- Community Health Systems
- Family Health Center of Marshfield
- Family Health/La Clinica
- Fox Cities Community Health Center
- Health Care for the Homeless of Milwaukee
- Kenosha Community Health Center
- Lake Superior CHC
- Milwaukee Health Services
- N.E.W. Community Clinic
- North Woods Community Health Centers
- Northern Health Centers
- Scenic Bluffs Community Health Center
- Sixteenth Street Community Health Center
- The Lakes Community Health Center
- Westside Healthcare Association

[5] Based on a 2008 WMS estimate of 69 percent of WI physicians practicing in groups with > 50 physicians

[6] Office-based physicians are estimated to be 90 percent of the 13,071 (2008 figure) practicing WI physicians

[7] Wisconsin Department of Health Services, 2008 Wisconsin Ambulatory Health Information Technology Survey, published March 31, 2009

The following table includes the number of EPs (FTEs) who are currently using or who will eventually have access to EHRs within Wisconsin's 17 FQHCs, based on existing plans.

EHR Adoption Stage by Health Center	Physician FTEs	Psychiatrist FTEs	Nurse Practitioner FTEs	Nurse Mid-wife FTEs	Pediatrician FTEs	Dentists FTEs	Total Provider FTEs by EHR Adoption Stage
Meaningful Use	32.51	3.26	10.0	7.4	9.1	21.0	83.24
Selection/ Implementation	19.1	2.9	4.1	4.4	5.6	8.3	44.4
Planning/ Selection	4.55	2.1	8.39	0.0	0.6	9.10	24.69
Total Provider FTEs by Type	56.16	8.21	22.44	11.79	15.34	38.39	152.33

Table 4.1.2 EHR adoption within FQHCs[8]

The 11 tribes in Wisconsin responded to a telephone survey the State Health IT Coordinator conducted in November 2011. All tribal health clinics reported using an EHR but some of the clinics still need to upgrade their EHRs product(s) to a version that is certified as meeting the requirements for Stage 1 Meaningful Use. The following table shows the number of eligible professionals in the tribes and the EHR product vendor.

Name of Organization	Total Eligible Professionals	EHR Product Vendor
Bad River Health Clinic	4	IHS/RPMS
Forest County Potawatomi Health & Wellness Center	7	IHS RPMS
Ho-Chunk Nation Department of Health Services	6	NextGen
Lac Courte Oreilles Community Health Center	8	IHS RPMS
Lac du Flambeau Band of Lake Superior Peter Christensen Health Center	13	Intergy
Menominee Tribal Clinic	13	e-MDs/Dentrix
Oneida Community Health Center	30	GE Centricity

[8] Does not include Family Health Center of Marshfield and Lake Superior CHC (Minnesota HRSA grantee).

Name of Organization	Total Eligible Professionals	EHR Product Vendor
Red Cliff Community Health Center	5	IHS RPMS
Sokaogon Chippewa Health Clinic	2	Amazing Charts
St. Croix Health Clinic	3	IHS RPMS
Stockbridge-Munsee Health & Wellness Center	6	IHS RPMS
Total	**97**	

Table 4.1.3: Number of eligible professionals in tribal organizations with an EHR

Wisconsin hospitals are investing heavily in HIT to enable improvements in care coordination and support decision-making across the continuum of care. The Wisconsin Hospital Association recently conducted a survey to assess the extent of HIT adoption among the 130 acute-care hospitals in the state as of the end of the 2010 fiscal year. The survey had a 100-percent response rate. Ninety-four percent of Wisconsin acute-care hospitals have either fully or partially implemented at least five HIT systems. Ninety percent have achieved a moderate, high, or very high level of HIT use (see Figure 4.1.3).

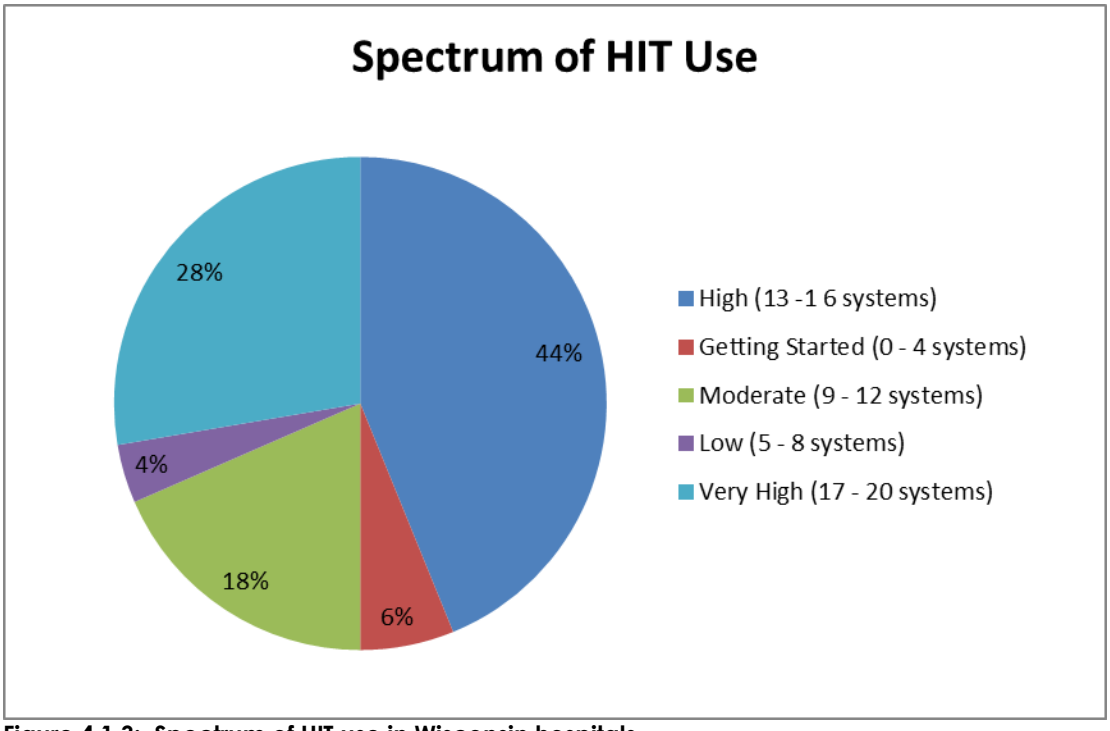

Figure 4.1.3: Spectrum of HIT use in Wisconsin hospitals

For the purpose of this survey and analysis, a hospital EHR contains all of the following systems:

- Core master person index database
- Lab information system
- Pharmacy system
- Enterprise medication administration record
- Radiology information system
- Order entry and results
- Inpatient charting

Based on these criteria, 81 percent of Wisconsin acute-care hospitals have either fully and/or partially implemented and 59 percent have fully implemented all of these seven systems. With a focus on safety, fifty-five percent of Wisconsin acute-care hospitals have also fully or partially implemented a bedside medication verification system, with an additional 42 percent planning to do so. For computerized physician order entry, 49 percent are implementing this technology with 46 percent in the planning stage.

HIT System	Fully Implemented	Partially Implemented	Planning	No Plan at This Time
Master person index database	82%	5%	8%	4%
Lab information system	94%	4%	2%	1%
Pharmacy system	82%	12%	6%	0%
Enterprise medication administration record	63%	18%	16%	3%
Medication dispensing	66%	17%	15%	2%
Radiology information system	78%	8%	8%	5%
Computerized radiography	80%	10%	8%	2%
Picture archiving & communication system	86%	5%	8%	1%
Order entry & results	75%	19%	5%	1%
Inpatient charting	59%	25%	15%	0%
Bedside medication verification	44%	11%	42%	4%
Computerized physician order entry	22%	27%	46%	5%
Health electronic record portal	43%	13%	36%	8%
Bulk scanning	42%	20%	25%	13%

HIT System	Fully Implemented	Partially Implemented	Planning	No Plan at This Time
Surgery management system	57%	13%	16%	14%
Interface engine	63%	14%	12%	11%
Physician practice management systems	35%	15%	15%	35%
Physician practice EHR system	31%	20%	18%	32%
Long-term care EHR system	8%	11%	5%	77%
Home health EHR system	25%	4%	5%	67%

Table 4.1.4: Hospital adoption rate by percentage for 20 HIT systems[9]

The most prevalent EHR vendors in use in the state include:

- Epic
- Cerner
- Cattails (Marshfield Clinic)
- GE Healthcare
- Meditech
- HMS
- Healthland
- McKesson

4.2 Local Public Health and Tribal Health Department Providers

Local public health and tribal health departments provide a combination of direct patient care, care management, and population health services. All local public health and tribal health departments use the web-based Secure Public Health Electronic Record Environment (SPHERE) for certain maternal-child health care management tasks. The SPHERE system is in need of an upgrade. All the departments also use a real-time electronic immunization and lead poisoning registry. All local public health departments use the Wisconsin Electronic Disease Surveillance System (WEDSS) for communicable disease case management. Public health and other public and private agencies manage Women, Infants, and Children (WIC) Supplemental Nutrition Program clients on another system called Real-time Online Statewide Information Environment (ROSIE). Over time these systems have been engineered to share electronic information

[9] Note: Due to rounding, not all system percentages total 100 percent.

among them and receive data from the state vital records system and electronic laboratory reporting system.

Like clinical providers, public health professionals desire the efficiency and quality improvement that would result from HIT integration in an environment that can support multiple patient-centered workflows for both patient care and business intelligence. To support optimal exchange, harmonization with ONC HIT certification requirements will be important. To date, the U.S. Department of Health and Human Services has been relatively silent on the HIT funding needs of the public-health sector.

4.3 Resources for HIT Adoption

As noted throughout the industry and in this plan, EHR adoption among providers of all sizes is a critical requirement to the advancement of HIE. The greatest barrier to EHR adoption cited by small practices in the 2008 survey of Wisconsin practices was the capital investment to purchase and implement an EHR system. However to date, the Wisconsin legislature has not appropriated any funding to assist small practices and solo practitioners other than an EHR tax credit that will permit a health care provider to claim a credit against taxes in the taxable year beginning after December 31, 2011. Wisconsin's principal strategy for helping these small group practices, individual providers, and critical access hospitals is primarily through technical assistance by working in partnership with WHITEC, workforce development opportunities, and the Medicaid EHR incentive program. Additionally, a number of the large IDNs in the state are offering a lower-cost option to providers in their local communities that are not part of their IDN to be able to use the IDN's EHR system. For example, in Madison, the University of Wisconsin Medical Foundation hosts and provides an EHR to the local FQHC in Madison. The following sections describe the primary resources currently available to support adoption and use of EHRs by health care providers and hospitals.

4.3.1 Wisconsin HIT Extension Center (WHITEC)

WHITEC plans to provide technical assistance to primary care providers in Wisconsin in their efforts to select, implement, and achieve Meaningful Use of certified EHR technology, including meeting the interoperability requirements for HIE.

Currently, WHITEC has recruited 1,706 providers for its technical assistance services, and 982 of those providers have documented go-live status in the following categories:

- Critical Access Hospital/Rural Hospital Clinics: 345
- Community Health Center: 67
- Private Practice 1-10: 90
- Other Underserved Setting: 142
- Practice Consortium: 337

Of the recruited providers, 78 have successfully attested to Stage 1 Meaningful Use under the Medicare EHR Incentive Program. The State Medicaid EHR Incentive Program staff meets with WHITEC at least monthly to discuss lessons learned, answer provider questions, and identify ways to align communications and education. Real-time feedback is being provided to the Medicaid HIT team about challenges seen in the

field and suggestions for improvements in the system and user guides. WHITEC has assisted a number of Medicaid EPs apply for the Adopt/Implement/Upgrade (AIU) payments. Information about the Medicaid EHR program launch was created and distributed to all WHITEC participants. WHITEC is also coordinating with the National Indian Health Board, a Regional Extension Center for tribal nations across the states, to specifically assist the tribal health clinic providers in Wisconsin. To date, WHITEC is working with two tribal health centers, as well as 13 community health centers.

The State Health IT Coordinator serves on WHITEC's Steering Committee and also convenes a monthly meeting of WISHIN, WHITEC, and the Wisconsin Medicaid program staff to coordinate and align efforts between the HITECH programs and ensure Wisconsin providers are aware of the Meaningful Use and HIE roll-out activities. WHITEC provides a natural communication and outreach channel for WISHIN, promoting statewide HIT and HIE adoption by providers. Before the launch of WISHIN Direct, WISHIN provided WHITEC training so they could assist providers with registering for WISHIN Direct and using it to securely exchange health information for EHR Meaningful Use. WHITEC assisted the first hospitals in Wisconsin that used WISHIN Direct secure messaging to meet the Stage 1 Meaningful Use requirements for CCD exchange and is currently working to increase awareness and use of WISHIN Direct with all of its participating providers.

4.3.2 HIT Workforce

The demand for a well-trained Health Information Technology (HIT) workforce is growing, but is limited by the available supply of professionals within the health care workforce. ONC and industry professionals predict that as many as 51,000 new Health IT jobs will be created by 2015. Wisconsin faces critical challenges in the training, development, and retention of HIT employees.

Like other states, the shortage of physicians and other health care professionals within the industry affects Wisconsin. Various organizations representing clinicians, hospitals, academia, and government have launched initiatives to monitor and address workforce shortages. The Wisconsin Hospital Association, the Wisconsin Council on Medical Education and Workforce, and the Department of Workforce Development's (DWD's) Select Committee on Health Care Workforce Development regularly conduct studies and advise leaders in Wisconsin's health community on strategies to address needs and gaps in workforce levels and readiness.

A shared objective is the need to increase training to cultivate more clinicians and to advance HIT skills. The HITECH Workforce Development grant serves as an opportunity to advance the shared goal over the short-term in support of our existing long-term initiatives. The following sections provide statistics on Wisconsin's existing health care workforce and education and training programs.

4.3.2.1 Workforce Levels

Studies analyzed current health care workforce levels and projected future demands for health care professionals. Highlights and analysis from the studies are contained in the following sections:

1) **Physicians**: A November 2011 study published by the Wisconsin Hospital Association[10] described the shortage of physicians in Wisconsin over the next 20 years. The projections show a shortfall of over 2,000 physicians by 2030 and further states that primary care physicians will be the most in demand, with general surgeons and psychiatrists also in short supply. The study made the following recommendations for addressing Wisconsin's physician shortage now:

   - Wisconsin needs to expand graduate medical education programs.
   - Wisconsin needs to increase the number of medical school graduates.
   - Wisconsin needs to focus on tuition and tuition-related debt as incentives to attract and retain physicians.
   - Wisconsin needs to develop a coordinated effort to address anticipated changes in care delivery, including the team approach and the focus on care management. This includes the need for inter-professional training and having appropriate resources available to carry out team-based care delivery in the future.
   - Wisconsin needs the infrastructure and ongoing financial and clinical support for enhancing the long-term viability of our medical education and training system.

2) **Registered Nurses (RNs) & Other Health Professionals**: In 2010, 77,533 RNs renewed their Wisconsin license. Among nurses renewing their licenses in 2012, 46 percent are over 50 years of age, with an average age of 46.8 years.[11] Over 60 percent of survey respondents intend to retire within the next 10 years. Retirements will create a significant shortage of RNs in Wisconsin.

   Job openings or shortages exist among other health care professionals through either new jobs or vacancies, with RNs topping the list with 26,110 openings. Combined across all health profession occupations, the number of open positions (new and replacement) was projected to total 65,880 over the 10-year period, ending in 2014.

[10] 100 New Physicians a Year: An Imperative for Wisconsin, 2011

[11] Wisconsin's Health Care Workforce 2010 Report

Occupational Title	2004 Estimated Employment	2014 Projected Employment	2004-2014 Employment Change (new)	2004-2014 Employment Change (replacement)	2004-2014 Total Employment Change (new & replacements)
Registered Nurses	48,410	64,420	16,010	10,100	26,110
Nursing Aides/Orderlies/Attendants*	38,630	45,320	6,690	5,100	11,790
Home Health Aides*	13,730	20,790	7,060	1,800	8,860
Medical Assistants*	5,890	8,640	2,750	1,100	3,850
Dental Assistants*	5,050	6,950	1,900	1,400	3,300
Licensed Practical/Vocational Nurses	11,040	12,650	1,610	2,400	3,010
Healthcare Support Workers/All Other*	6,160	7,510	1,350	1,100	2,450
Pharmacy Technicians*	5,770	7,200	1,430	800	2,230
Emergency Medical Technicians/Paramedics	7,140	8,560	1,420	800	2,220
Dental Hygienists	4,390	6,050	1,660	400	2,060

Source: DWD, Office of Economic Advisors, 2006

While exact statistics do not exist on the size of the HIT workforce within Wisconsin, it is believed that current shortages in HIT are reflective of the existing shortages within the overall health profession.

4.3.2.2 Education and Training Programs

Key strategies in Wisconsin's long-term plan to address the needs in the health care workforce includes increasing enrollment and graduation rates within our universities, colleges, and technical programs while improving in-state retention rates upon graduation. In the short-term, Wisconsin is supplementing existing educational programs by applying the recent award of the HITECH Workforce Development grant to develop HIT training programs.

4.3.2.2.1 Long-Term Strategy – Education

Supporting Wisconsin's long-term strategy are the three educational systems within the state that produce advanced, four-year baccalaureate, and associate health care degrees. The three educational systems include the University of Wisconsin System, the Wisconsin Private Colleges and Universities, and the Wisconsin Technical College System.

These institutions of higher learning have medical or health care informatics programs that prepare professionals to participate in and lead multidisciplinary teams in the development, implementation, and management of information technology solutions in health care, such as the Medical College of Wisconsin and the Milwaukee School of Engineering, the University of Wisconsin-Milwaukee, and the University of Wisconsin-Madison School of Medicine and Public Health. These programs join the disciplines of medicine, business, and information technology, and promote the use of HIT in the health care delivery process to achieve measurable improvements in both quality of care and cost effectiveness.

4.3.2.1.1 Short-Term Strategy – Training

To address the primary short-term need to increase the number of HIT professionals, Wisconsin took advantage of the HITECH Workforce Development grant to rapidly train individuals in HIT.

Individuals trained through this program are a valuable resource for WHITEC, local HIT consulting firms, and providers across the state to assist with adoption, implementation, upgrade, and Meaningful Use of EHRs.

The State Health IT Coordinator is a member of the colleges' HIT Training Advisory Committees.

Workforce Development Grant Details

The Madison and Milwaukee Area Technical Colleges are part of the Midwest Community College Consortia led by Cuyahoga College in Cleveland, Ohio, that applied for and was awarded a HITECH Workforce Development grant. The Midwest Community College Consortia received the grant award for Region 3. This consortium is made up of 17 colleges in ten states: Wisconsin, Nebraska, Kansas, Minnesota, Iowa, Missouri, Illinois, Michigan, Indiana, and Ohio.

Through the HITECH Workforce Development grant, Milwaukee Area Technical College received $628,520 and Madison Area Technical College received $759,822 to train 300 students at each location over the course of 2 years. The grant required students to complete the program within 6 months or less. Milwaukee offered training/certificates for the following four roles and Madison for roles 2 and 4:

1. Practice workflow and information management redesign specialists
2. Implementation support specialists
3. Implementation managers
4. Technical/software support staff

Both programs used a nationally developed curriculum created through HITECH funding provided to nationally known Informatics schools. Students were selected through a competitive process for admission into the program. Students had to provide evidence of previous college experience along with previous work experience in health care, IT, or project management. Target enrollments for the state were reached in the fall of 2011. The Madison program has already graduated 300 students. Milwaukee will reach their goal of graduating 300 students in spring of 2012 to support statewide HIT adoption and Meaningful Use by health care providers and hospitals.

4.3.3 Medicaid EHR Incentive Programs

The Wisconsin Medicaid program launched the Wisconsin Medicaid EHR Incentive Program in August 2011. The program is governed by the State Medicaid Health Information Technology Plan (SMHP) which includes the Medicaid program's plan to: (1) administer Medicaid incentive payments to EPs and hospitals, (2) conduct oversight of the Medicaid EHR incentive program, including routine tracking of Meaningful Use

attestations and reporting mechanisms, and (3) pursue initiatives to encourage the adoption of certified EHR technology for the promotion of health care quality and the exchange of health care information.

The Wisconsin Medicaid EHR Incentive Program's focus in 2011 was implementing the Wisconsin Medicaid program's plan to administer and oversee the program for State Fiscal Year 2011. The Wisconsin Medicaid program has also focused on continued planning for future years of the program and encouraging the adoption and use of EHRs and HIE by Medicaid providers to promote health care quality, patient safety, and efficiency. The state Medicaid program is collaborating with WISHIN to define the HIE services that will be needed to support Medicaid providers in achieving Meaningful Use for State Fiscal Year 2012 and beyond as well as the potential services that could be used by the Medicaid program to manage the Medicaid EHR Incentive Program (e.g., provider reporting of quality measures).

As the planning process matures, the Medicaid program will identify specific strategies to include in the SMHP that will encourage Medicaid provider adoption of certified EHR technology. This includes working in partnership with WHITEC and WISHIN to assess the need for technical assistance to support providers in the adoption of certified EHR technology and achieving Meaningful Use. The Medicaid program will also be identifying other strategies to encourage HIT/HIE adoption and use by Medicaid providers who may not currently meet all the eligibility requirements for the EHR Incentive Program payments, such as long-term care and behavioral health providers.

4.3.4 EHR Tax Credit

A provision in Wisconsin Act 20, enacted October 26, 2007, created a tax credit that permits a health care provider to claim as a credit for up to 50 percent of the amount paid for information technology hardware or software used to maintain medical records electronically, against taxes imposed by Wisconsin. This provision was supposed to first apply to tax years beginning after December 31, 2009; however, the funding for the credit was eliminated and deferred until state fiscal year 2012. Providers can apply for this credit for taxable years after December 31, 2011. The total amount of credits that could be claimed by providers in total for a taxable year is limited to $10 million. This will provide some financial relief to providers subject to Wisconsin state taxation. The process for developing and adopting an administrative rule to implement a program to certify health care providers as eligible for the tax credits and allocate the credits is underway.

5 HIE Development

(HIE Development was Section 4 in the 2010 SOP)

5.1 WISHIN Direct

The National Direct Project was launched by the Office of the National Coordinator (ONC) in March 2009 in response to the growing need for a single standard for exchanging health information electronically. ONC set the stage for collaboration within the private sector to create a secure, simple, and cost effective mechanism to send health information directly to a known, trusted, recipient using the Internet.

The 2010 SOP included the WIRED for Health project's approach for the implementation of Direct messaging for the following reasons:

- Direct messaging gave Wisconsin providers in the white space an option to meet Stage 1 Meaningful Use Requirements.
- Direct messaging is a key component of WISHIN's patient-centered, bi-directional exchange.
- Direct messaging allowed WISHIN to demonstrate the parallels between current HIE practices and electronic HIE.

In April 2011, WISHIN attended a Direct Boot Camp sponsored by the ONC. The Boot Camp provided valuable information for WISHIN to use to determine its strategy and tactics for Direct, and, as a result, WISHIN developed a Request for Proposals (RFP) to solicit the services of a Health Information Service Provider (HISP) to support the infrastructure and implementation of Wisconsin's Direct product, WISHIN Direct.

Following a competitive RFP evaluation process, WISHIN announced on August 1, 2011, that Ability Network™ of Minnesota had been selected as the HISP provider for WISHIN Direct. WISHIN contracted with Ability and work began to implement WISHIN Direct.

On August 26, 2011, WISHIN Direct was launched and made available to the public. In the first week, WISHIN had one customer begin the vetting process. To date, WISHIN has more than 1,000 customers is various stages of the WISHIN Direct implementation process.

The first CCD exchange tests using WISHIN Direct were conducted on September 23, 2011 by Tomah Memorial Hospital and the Memorial Hospital of Lafayette County in Darlington, Wisconsin. Both are rural, critical access hospitals. WISHIN worked with the RWHC, a sub-recipient of the REC grant awarded to WHITEC, to help the hospitals enroll in WISHIN Direct and complete the necessary participation agreements. RWHC worked with each hospital to generate a CCD from its certified EHR system (both hospitals use HMS). Once both hospitals were able to generate their CCDs, WISHIN and RWHC held a joint conference call with the hospitals in order to facilitate the test exchange. During the call, we stepped the hospitals through the process of logging in to the WISHIN Direct secure messaging portal, creating a message, attaching the CCD, and sending the message. Each hospital was able to confirm receipt of the sending hospital's CCD and send a confirmation reply to the originating hospital to document the successful test.

Since the end of September 2011, WHITEC, RWHC and WISHIN have worked with several other hospitals and physicians across Wisconsin to conduct their test exchanges using this same process or a variation of the process that is convenient to the participants. Whenever possible, WHITEC, RWHC and WISHIN work with the WISHIN Direct participant to engage a partner organization/entity in their community and enroll that partner in WISHIN Direct. In cases where this is not possible, outreach is conducted to existing WISHIN Direct participants to secure an exchange partner.

Section 3 outlines WISHIN's 2012 strategy and tactics for WISHIN Direct. These strategies and tactics are also incorporated into our development and implementation plans for our robust, bi-directional HIE.

5.1.1 Marketing and Outreach for WISHIN Direct

As part of the WIRED for Health Project, the SOP outlined communication, education, and marketing plans for WISHIN Direct. WISHIN carried out these plans by launching a marketing campaign to educate providers about Wisconsin's HIE plans and WISHIN's initial service offerings. Marketing efforts included:

- Press releases announcing the upcoming launch of WISHIN Direct.
- A monthly electronic newsletter that featured WISHIN Direct in articles.
- Holding information sessions introducing WISHIN and WISHIN Direct. Each session was well attended by providers, consumers, and other professionals with an interest in HIE.
- Speaking about WISHIN and WISHIN Direct at many different stakeholder and association meetings/conferences throughout the state, including:
  - The Wisconsin Dental Association Board
  - The Wisconsin Education Association Insurance Trust
  - The Wisconsin Hospital Association North Central and West Central Regional meetings
  - The Wisconsin Hospital Association Rural Health conference
  - The MetaStar Quality Symposium
  - The Anthem Blue Cross Blue Shield Provider Expo
  - HIMSS Dairyland
  - Wisconsin Pharmacy Society Board
  - LeadingAge Wisconsin Board
  - HIPAA COW Spring Conference
  - CLIA Midwest Consortia Meeting
  - UW Extension Broadband Community Meeting
  - Wisconsin Public Health Nurse Consultants Meeting
  - WEA Trust
- Staffing booths and presenting at industry tradeshows and conventions.
- Working with the Wisconsin Medical Society (WMS) to outreach to existing physicians to obtain updated information about their practices. Included using the outreach as an opportunity to "soft sell" WISHIN Direct and get the word out about WISHIN.
- Outreach to all Wisconsin hospitals about WISHIN and WISHIN Direct. Direct-mail postcards were sent to all Wisconsin Hospitals on September 9, 2011 in

order to ensure that hospitals wanting to attest to Stage 1 Meaningful Use could do so before the deadline. The postcard also promoted WISHIN's attendance at the Wisconsin Hospital Association's 2011 Annual Convention and encouraged hospital representatives attending the event to stop by the WISHIN booth to learn more about WISHIN and WISHIN Direct.

WISHIN continues to actively market WISHIN Direct, since secure messaging is a key component in WISHIN's overall strategy for statewide HIE.

5.2 WISHIN Bridge

WISHIN Bridge is a resource intended to give Wisconsin health care entities and individuals options for HISP services to facilitate the exchange of Direct messages. WISHIN offers its own HISP service (WISHIN Direct); however, WISHIN recognizes that other HISP vendors can, and will, serve Wisconsin providers. As the SDE for governing HIE in Wisconsin, WISHIN believes it is critical that the vendors providing HISP services to Wisconsin providers are doing so in a manner consistent with the specifications set forth by the National Direct Project, thus enabling a "trust anchor" between HISPs operating in Wisconsin and across state borders. The WISHIN Bridge resource was developed to help Wisconsin health care providers:

- Make an informed choice when selecting a HISP vendor
- Choose a HISP vendor that meets or exceeds the National Direct Project's Best Practices for HISPs, as well as other standards and requirements applicable in Wisconsin
- Choose a HISP vendor that is committed to advancing the "network of networks" concept for HIE in Wisconsin

HISP vendors that participate in WISHIN Bridge must satisfy or exceed requirements based on the National Direct Project and must successfully execute an agreement with WISHIN. Generally, HISP vendors will be selected for WISHIN Bridge based on:

- Alignment with WISHIN and the National Direct Project's Best Practices for HISPs, as well as state and federal laws.
- Ability to offer core HISP services to Wisconsin HIE participants.
- Strength of their services, technology systems, and processes.
- The HISP vendor's willingness to share its Direct directory of addresses and establish a "trust anchor" with WISHIN's Direct HISP.

Once a HISP vendor is qualified for WISHIN Bridge, the vendor is listed on WISHIN's website and given use of the WISHIN Bridge logo. WISHIN shares its WISHIN Direct directory with the WISHIN Bridge qualified vendors and they, in turn, share their directory with WISHIN. This promotes the overall use of Direct in Wisconsin even if the vendor of choice is not WISHIN.

WISHIN accepts applications for WISHIN Bridge semiannually. On October 24, 2011, WISHIN published its first request for HISP vendors to submit an application to be considered for participation in WISHIN Bridge. The first round of WISHIN Bridge applications were due November 4, 2011. Three vendors were selected from this round

of applicants as meeting the requirements for WISHIN Bridge. Information on these vendors can be found on WISHIN's website.

5.3 Patient-Centered, Bi-Directional Exchange

Wisconsin envisions a "network of networks" architecture for statewide and interstate HIE that facilitates access to and retrieval of clinical data to provide safer, timelier, efficient, effective, patient-centered care.

Wisconsin's patient-centered, bi-directional exchange infrastructure and services will provide critical information about the patient to the entire care coordination team across all stages of care.

Wisconsin's "network of networks" architecture will be comprised of the state-level exchange network, participating Wisconsin medical trading areas or non-geographic exchange networks, other neighboring state-level exchange networks, and the NwHIN.

In December of 2011, Wisconsin submitted a draft RFP to ONC for the procurement of technical services to facilitate the implementation of Wisconsin's patient-centered, bi-directional exchange. ONC approved the RFP and the WISHIN released it in January 2012. WISHIN enlisted a multi-stakeholder evaluation team to review, evaluate and score vendor proposals and, on April 6, 2012 made a decision on a vendor to begin negotiations. WISHIN expects to contract with the selected HIE vendor by the end of May 2012. This procurement will launch statewide, patient-centered, bi-directional HIE services in Wisconsin.

Section 8 describes the detailed technical infrastructure and services, along with an implementation roadmap, that make up Wisconsin's patient-centered, bi-directional exchange.

6 Governance

(Governance was Section 5 in the 2010 SOP)

The governance structure for the WIRED for Health Project is a natural extension of the collaboration between DHS and the broad cross-section of health care stakeholders that participated in the work of the eHealth Board and its workgroups. Like the eHealth Board, the WIRED for Health Board was based on broad, multidisciplinary stakeholder representation across the public and private sector, with a commitment to collaboration, transparency, trust, and buy-in.

The state's approach to promoting statewide HIE was significantly influenced by the SLHIE Project initiated by DHS in May 2009. This project provided stakeholders an opportunity to share their opinions on the approach Wisconsin should take to governing the development of a SHIN and HIE services. In assessing the governance options, the SLHIE Project team used a variety of resources to make its recommendations, including:

- Input from Wisconsin's public, private, and consumer health care stakeholder groups, gathered through a stakeholder assessment, environmental scan, and regional summit meetings across the state
- Guidance and recommendations provided by ONC's State HIE CAP FOA, based on the provisions of the HITECH Act included in ARRA
- Information collected from earlier work of the eHealth Board, the SLHIE Consensus Project, and the National Governors Association State Alliance for eHealth governance models adopted by other states

Following an analysis of these resources, the recommendation was that Wisconsin delegate responsibility to a non-profit corporation to serve as the SDE to implement the HIT SOP for Wisconsin. The state accepted this recommendation. Major factors in this decision included:

- The strong preference of stakeholders
- Stakeholders' perception of the SDE structure as neutral and independent
- Insulation from potential changes in state administration and budget priorities
- The desire for balanced governance—involvement of both government and the private sector

Two significant actions flowed from the decision to work with an SDE. The first was the creation by the Governor of the 15-member WIRED for Health Board under Executive Order 303, as described in Section 2.1. The second significant action was the enactment of legislation that authorized the state to select a qualified non-profit corporation to serve as the SDE and detailed the responsibilities of the SDE, with reference to federal requirements. During the legislative process, many key stakeholders expressed their strong support for the proposal, which the governor signed into law as 2009 Wisconsin Act 274 (the "WIRED for Health Act") on May 11, 2010.

Together, Executive Order 303 and Act 274 positioned Wisconsin to fulfill the planning and implementation phases of statewide HIE.

Following the planning process, the WIRED for Health Board conducted a competitive application process in order to select an SDE. On October 25, 2010, the state officially announced its intention to designate WISHIN, a non-profit organization formed by the Wisconsin Hospital Association, the Wisconsin Medical Society, the Wisconsin Collaborative for Healthcare Quality, and the Wisconsin Health Information Organization, as the SDE.

The WIRED for Health Board oversaw the transition of the SOP to the SDE and, with the DHS's oversight, WISHIN assumed the responsibilities of the former WIRED for Health Board as well as the program responsibilities of the State Health Information Exchange CAP.

Like the eHealth Board and the WIRED for Health Board, WISHIN's Board is has broad, multidisciplinary stakeholder representation across the public and private sector, with a commitment to collaboration, transparency, trust, and buy-in.

WISHIN serves as the primary state-level governance entity for HIE and oversees the implementation phase of the WIRED for Health SOP. Both phases place emphasis on multi-stakeholder collaboration as a critical component of achieving a secure SHIN and HIE services. Both phases also place emphasis on ongoing development of governance and policy structures.

6.1 WISHIN's Mission, Vision, and Goals

As the SDE for HIE, WISHIN is responsible for implementing the WIRED for Health SOP. WISHIN's missions, vision, and goals were adopted and adapted from the WIRED for Health Board.

6.1.1 WISHIN's Mission

To develop and sustain a trusted, secure SHIN and information-sharing services that provide value to participants, and patients.

6.1.2 WISHIN's Vision

To promote and improve the health of individuals and communities in Wisconsin through the development of information-sharing services that facilitate electronic delivery of the right health information at the right place and right time, to the right individuals.

6.1.3 WISHIN's Goals

- Establish a governance framework that is flexible and enduring
- Develop a path to financial sustainability for ongoing statewide HIE
- Develop a scalable, standards-based technical architecture for statewide HIE that leverages existing investments in HIT
- Inform and raise awareness about the benefits of HIT and HIE

6.2 WISHIN Board of Directors

WISHIN is committed to principles of collaboration, transparency, buy-in, and trust as a manner of conducting business and making business decisions. WISHIN's Board of Directors is broad and balances public and private stakeholder representation, including hospitals, providers, commercial payers, employers, consumers, Medicaid, and public health.

Wisconsin Act 274 (Wisconsin Statutes Chapter 153, subchapter II) specifies that WISHIN, as the SDE, must form a Board of Directors which shall include:

- The State Health Officer, or his or her designee
- The Medicaid Director, or his or her designee
- One person who is specified by the Governor, or his or her designee
- One or more persons who represent each of the following such that the representation of the public and private health sector is balanced in the Board's representation:
  - Health care providers
  - Health insurers or health plans
  - Employers who purchase or self-insure employee health care
  - Health care consumers or consumer advocates
  - Higher education

WISHIN's Board of Directors makes use of multiple advisory committees with Board oversight that serve as a means to capture broad stakeholder input and expertise.

6.3 Role of State Government

As described above, the State of Wisconsin has served as the initiator and convener of the multi-disciplinary planning efforts on HIT and HIE that had occurred through the eHealth and WIRED for Health Boards. With WISHIN fully operational, governance of the SHIN is driven by WISHIN and includes strong and active state government participation and collaboration.

The State continues to be fully engaged with the development of statewide HIE even though the governance structure is led by WISHIN. The State has several specific interests that may be distinct from private partners. One of these interests is to help ensure the exchange serves public and population health, as well as the quality and efficiency of health services delivered to Wisconsin residents. Another is to ensure that WISHIN operates consistently in the public interest. A third is to ensure HIE is actively used to support the delivery of more effective and economical health services such that Wisconsin remains competitive for employers and the many other resulting benefits that accrue to taxpayers (i.e., better educational outcomes).

The State Health IT Coordinator, the State Medicaid Director, and the State Health Officer play key roles in promoting these interests and ensuring a continued strong and active role for the State. As noted, the State Health IT Coordinator serves on WISHIN's Board of Directors as an appointed member and has a close working relationship with the Chief Executive Officer of WISHIN. In addition, as described under "The Role of the

State Health IT Coordinator," the Coordinator is actively engaged in additional activities in support of SHIN and HIE services, including but not limited to:

- Establishing communication vehicles and methods to engage and include DHS and other state agencies with the HIT/HIE interests or initiatives in the work of WISHIN
- Promoting an integrated approach to HIE across Medicare, Medicaid, the Wisconsin Public Health program, state employees' health plan, other federally funded health programs, and other HIE activities in the state
- Assisting in increasing statewide consumer involvement in HIT/HIE development

The State Medicaid Director and the State Health Officer are actively engaged with WISHIN as members of WISHIN's Board of Directors. In this role, they help integrate the work of WISHIN and the Wisconsin Medicaid and Public Health programs.

Wisconsin Statutes Chapter 153, Subchapter II (formerly referred to as Act 274) requires WISHIN to annually report to the DHS Secretary on the progress toward implementing statewide HIE and how efforts are enabling Meaningful Use of certified EHRs as defined under federal law. The annual report serves as a means for the Secretary to verify that WISHIN continues to satisfy the requirements to serve as the State's SDE.

The State Health IT Coordinator verifies that WISHIN complies with the terms of any contract with the State pertaining to statewide HIE, including the contract based on the State HIE CAP. In particular, the Coordinator works with WISHIN to ensure WISHIN collects and submits all information needed for the federal reports to DHS as described in the State HIE CAP FOA, the Notice of Grant Award, and any supplemental program guidance ONC provides throughout the period of the Cooperative Agreement.

6.4 Decision Making Authority

The WIRED for Health Board, in consultation with the Department of Health Services Secretary and the State Health IT Coordinator, was responsible for decision-making until: (1) the original Strategic and Operational Plan was approved by ONC in December 2010; (2) the SDE contract with the Department based on the State HIE CAP was in place; and (3) the SDE was operational. Since all of these events have occurred, the WIRED for Health Board's responsibilities have officially transitioned to WISHIN as the SDE.

The WIRED for Health Board established a transition team made up of individuals from the board and its committees to address decision-making and transition activities to cover the timeframe between the selection of WISHIN as the SDE and the completion of the aforementioned conditions being satisfied. The transition team was responsible for reviewing and providing input to the Department on the State contract to be executed with WISHIN and on WISHIN's proposed articles of incorporation and bylaws, as well as keeping the Board informed on transition matters. The WIRED for Health Board appointments expired upon transition to the new Governor and his administration on January 3, 2011.

WISHIN is bound, through the selection and contracting processes, to a commitment to principles of collaboration, transparency, buy-in, and trust as a manner of conducting business and making business decisions. As part of this commitment, WISHIN was required to develop, maintain, and enforce policies to: (1) ensure WISHIN operates in the best interest of the people of Wisconsin and in a fair manner in support of the Strategic and Operational Plan, the provisions of the State HIE CAP, and Act 274; and (2) require members of the WISHIN's BoD to disclose conflicts of interest, to recuse themselves from deliberations on matters in which they have a conflict of interest, and to abstain from voting on such matters.

6.5 Oversight, Accountability, and Transparency

Oversight, accountability, and transparency related to the Wisconsin statewide HIE initiative was divided into two primary phases: the period governed by the WIRED for Health Board and the period governed by WISHIN. The role of oversight, accountability, and transparency in the period governed by WISHIN is described below, followed by a description of reporting and performance requirements applicable to both phases.

6.5.1 WISHIN

As part of the transition phase from the WIRED for Health Board, WISHIN adopted processes relevant to oversight, accountability, and transparency from the WIRED for Health Board. WISHIN is committed to using open and transparent processes in conducting the business of the SDE. Appropriate oversight and accountability are assured by:

- The broad range of stakeholders represented on the WISHIN Board of Directors and committees
- The role of the State Health IT Coordinator in working with the WISHIN and in coordinating the work of WISHIN related initiatives
- The statutory requirements of Wisconsin Statutes Chapter 153, Subchapter II (formerly Act 274)
- The role of the state in enforcing the terms of the contract(s) it has with WISHIN

As noted, WISHIN must report annually to the DHS Secretary on progress in achieving stated goals. In addition, as long as WISHIN receives funding from DHS under the State HIE CAP, the additional section 1512 ARRA oversight requirements that apply to DHS will also apply to WISHIN.

One of the responsibilities of WISHIN is to secure the ongoing financial stability of the SHIN. As an independent non-profit corporation, the WISHIN Board of Directors has assumed all necessary fiduciary responsibilities, including annual financial audits. In addition, WISHIN is accountable to its users/members for operations, security, and confidentiality.

Finally, one of the strategic goals for Governance under the SOP is to establish a governance structure that is flexible and enduring and is able to continuously improve and re-invent itself to meet changing environmental conditions. WISHIN is responsible for reporting on its performance based on the goals, objectives, and measures included in

the SOP and any other reporting, measurement, and evaluation requirements specified by the ONC as part of the State HIE CAP.

6.5.2 ARRA Reporting and Evaluation Requirements

A major source of financial support for the start-up of the Statewide HIE Planning and Implementation project is the ARRA funding awarded through the State HIE CAP. The ARRA funds are subject to the specific reporting requirements under ARRA s.1512, which are designed to ensure transparency and accountability, as well as to other reports and evaluation processes required under the HIE CAP. In Wisconsin, all ARRA funding is also subject to specific oversight by the state's centralized reporting office, the Office of Recovery and Reinvestment, in the governor's office. DHS has further implemented enhanced programmatic and fiscal oversight and accountability mechanisms for all ARRA programs under DHS. These will apply to WISHIN as an ARRA sub-recipient. The DHS Secretary takes an active role in planning and prioritizing the responsible use of all ARRA funds; review by the Secretary's office is a key step in management oversight. In addition, in the case of the State HIE CAP, the State Health IT Coordinator will assist the DHS Secretary in assuring the timely preparation and review of all required reports by WISHIN.

6.6 Alignment with Nationwide HIE Governance

The State HIE CAP requires applicants to develop a governance structure that achieves broad-based stakeholder collaboration with transparency, buy-in and trust. This directive has been a primary focus for the state of Wisconsin and was the key driver of the decision to select a governance structure under which implementation of a SHIN and HIE services will be driven by a private-sector led organization with state government participation and collaboration. This decision to work through an SDE was based on the strong preference of private stakeholders, expressed during the SLHIE Planning and Design Project. In Wisconsin, this approach has the greatest potential to achieve significant levels of buy-in and trust across a broad array of stakeholders.

In addition, Wisconsin continues to monitor and participate in national discussions around HIE governance. This includes work being done by the National e-Health Collaborative (NeHC) and work related to the Nationwide Health Information Network (NwHIN).

7 Sustainability Plan

(The Sustainability Plan was formerly referred to as Finance in Section 6 in the 2010 SOP)

On February 8, 2012, the Office of the National Coordinator for Health Information Technology released Program Information Notice number ONC-HIE-PIN-002 to provide guidance on implementation of health information exchange to states and SDEs. This guidance also includes the requirement to update Strategic and Operational Plans (SOPs) with items deemed critical to health information exchange (HIE) success. One such required update is the creation of a specific sustainability plan to be included in the 2012 SOP update to be submitted by May 8, 2012.

This sustainability plan outlines strategies and techniques WISHIN will use to achieve sustainability for HIE services. Sustainability is defined in this document as ensuring there is enough long-term stable revenue from HIE participants to cover the cost of HIE operations. In the following pages, this plan will review all the aspects of sustainability, how they relate to WISHIN's SOP and each other, and what alternatives exist to ensure that HIE services are sustainable and the financial impact on stakeholders is.

7.1 Background

The Finance and Audit Committee of the WIRED for Health Board created an initial "financial plan" as part of the 2010 SOP. This sustainability plan builds on those discussions and incorporates new knowledge and perspectives from WISHIN's Board and advisory committees. All previous discussions on finance and sustainability have been taken into account in the drafting of this sustainability plan; however, this plan expands the original discussion to include an actionable perspective on how HIE services can be sustained.

WISHIN established a Sustainability Workgroup consisting of a cross-section of stakeholders dedicated to studying and making recommendations for this sustainability plan. The workgroup was convened in March 2012, and will continue to advise WISHIN as HIE services are implemented and administered.

7.2 Sustainability Models

Different HIEs have different environments, different stakeholders, different costs, and different external factors that impact the ability for HIE services to generate revenue and become sustainable. This document outlines different sustainability models discussed by WISHIN and WISHIN stakeholders, and the final recommended solution.

7.2.1 Shared Costs

WISHIN's sustainability discussion starts with the difference between shared and participant-specific costs. Shared costs are those associated with the overhead of the HIE organization and essential technical services that are needed to support a broad range of HIE functionality. Those HIE organizations that have developed an effective mechanism for recovery of shared costs are in advantageous positions to expand services and keep participant fees low. In developing this sustainability plan, WISHIN has

focused on strategies that would promote rapid adoption to ensure a broad client base over which to spread shared overhead costs.

As a basic premise, WISHIN will employ strategies to rapidly increase adoption in the early years of the exchange, using grant funds where necessary. WISHIN's sustainability model will offer participants greatly reduced fees in 2012 and early 2013. This will afford WISHIN not only the time needed to show the value of HIE services to stakeholders, but will also encourage stakeholders to make decisions sooner to take advantage of the subsidies. WISHIN will leverage grant funding to help cover costs during this time. WISHIN's strategy is based on a belief that participants will find value in HIE services and therefore are unlikely to terminate their participation in WISHIN.

7.2.2 Participant-Specific Costs

Participant-specific costs are costs associated with optional modular functionalities for participants, as opposed to integral components of the HIE's architecture. An example of this functionality is lab ordering. Only certain physicians will require this functionality, and as a result, those physicians will need to bear the entire cost of the functionality. The HIE will determine which functionality falls into core functionality, and which will be participant-specific. In following these precepts, WISHIN is able to develop a sustainability model that will stand up to changing market conditions in the future.

7.3 2012 Budget

The plan and strategies proposed are based in part on the levels of adoption needed to advance the sustainability of HIE services in Wisconsin. In 2012, WISHIN will use CAP funding for implementation of HIE services and to drive adoption and use of HIE services to the point that continued use in 2013 and beyond will generate sufficient revenue to allow exchange services to continue without the need for additional grant funding.

For 2012, WISHIN has prepared a calendar-year budget of the expected revenues and costs based on the assumptions of the SOP, allocated 47 specific revenue and expense categories. The budget is summarized in Table 7.3.1 below:

Category	Amount
Revenue	**$ 5,265,543**
CAP Funding	$ 5,229,543
Product/Services Revenue	$ 36,000
Expenses	**$ 5,398,976**
Staffing	$ 876,411
Office Expense	$ 165,840
Contracted Admin	$ 41,340
Contracted Technical	$ 3,895,805
Other	$ 419,580

TABLE 7.3.1 – 2012 Expected Revenue and Expense by Category

7.3.1 Revenue

Revenue for WISHIN is derived from two main sources: (1) CAP funding, and (2) product/services revenue. WISHIN will use CAP funding to facilitate early-stage implementation and adoption. CAP funding accounts for $5.2 million in revenue for 2012.

The second source of revenue represented in the 2012 budget is revenue generated from products and services offered by WISHIN. The budgeted revenue of $36,000 represents anticipated sales of WISHIN Direct secure-messaging services. Other revenue, for query-based HIE services, is likely to be realized in 2012, but has not been budgeted. Please see the discussion of revenue requirements and pricing strategy, below, for further information.

7.3.2 Expenses

The expenses depicted in Table 7.3.1 include all costs needed to implement and operationalize query-based HIE services in 2012.

In order to encourage adoption, and to provide appropriate support for the users of HIE services, WISHIN will incur specific implementation and operational costs. Some of these costs are not dependent on the number of users or data providers, but are costs that would be incurred regardless of external factors, while others can be scaled based on financial, sustainability, or adoption goals.

In general, WISHIN's costs can be grouped into four categories.

- Staffing
- Office Expense
- Contracted Services
- WHA Administration
- Other

7.3.3 Staffing

7.3.3.1 Fixed/Overhead Staffing

A stated in section 9.2.1 of the SOP, WISHIN has staffed for the following positions in either full or part-time capacities. These positions are needed regardless of implementation approach:

- Chief Executive Officer (CEO)
- Chief Operating Officer (COO)
- Administrative Assistant
- Implementation Team Leader
- Communications and Marketing Coordinator
- Outreach/Product Specialists (2)

In addition to the above required resources, additional resources may be needed in variable capacities depending on the volume of demand for query-based HIE services.

Staffing costs are summarized in Table 7.4 below.

7.3.3.2 Project Implementation Staffing

Project Manager(s) will be needed during project implementation.

7.3.4 Office Expense

Office expenses include all rent, supplies, phones, computers, insurance, paper products, and printers/copiers needed to operate the HIE.

7.3.5 Contracted Services

WISHIN contracts for legal and audit services. This includes finalization and execution of participation agreements, negotiation and execution of technical services contracts, advice on security and privacy policies, audit and evaluation of WISHIN financials and services, and other activities as required.

WISHIN also contracts for or will contract for many technical services, including the hardware, software, and people that make up or support HIE infrastructure.

Contracted technical staff:

- Technical Operations Manager
- Project Managers (2 consultants)
- HIE Consultants (2.5 consultants)

7.3.6 Other

Marketing services and activities make up the largest portion of the "other" category. Marketing includes all expenses needed to raise awareness of HIE services and encourage adoption and participation by stakeholders within Wisconsin. Specific categories include marketing materials, registrations, website, and travel.

7.3.7 WHA Administration

WISHIN contracts with the Wisconsin Hospital Association to provide certain back-office services, such as accounting and IT support.

7.4 Cost Table

The following table represents the estimated costs for HIE services over the next five years. To arrive at this budget, the previously approved 2012 WISHIN budget was increased by varying percentages each year (indicated in column 2). This creates a plan to be used for developing this sustainability plan. Actual future costs may vary from these estimates. Also note some costs decrease from 2012 to 2013 as a result of significant start-up costs being incurred in 2012.

Costs	Percentage Annual Increase	2012	2013	2014	2015	2016
Staffing	4%	$ 876,411	$ 914,973	$ 955,232	$ 997,262	$ 1,041,142
Office	3%	$ 165,840	$ 76,512	$ 78,807	$ 81,172	$ 83,607
Contracted	10%	$ 3,895,805	$ 4,306,786	$ 4,692,664	$ 5,158,780	$ 5,671,359
WHA Admin	5%	$ 41,340	$ 43,407	$ 45,577	$ 47,856	$ 50,249
Other	3%	$ 419,580	$ 139,647	$ 143,837	$ 148,152	$ 52,596
Total Costs		**$5,398,976**	**$5,481,325**	**$5,916,117**	**$6,433,222**	**$6,998,953**

TABLE 7.4.1 – Estimated HIE costs over the next five years

7.4.1 Physician and Hospital Adoption

The goal of HIE is to improve access to critical information at the point of care, reducing costs and improving the quality of care provided to patients. Participants of the statewide HIE will be motivated by these goals but in order to continue to participate, the value they receive from the HIE services must outweigh the cost of those services. In determining what services are to be offered, WISHIN must understand the underlying business value and assign costs for those services that are consistent with the value received by participants. The key to sustaining HIE services is maximizing physician and hospital participation in order to spread shared costs over a large population of revenue-generating participants.

The 2010 SOP went to great lengths to discuss business value in terms of financial benefit for various stakeholder groups. Physicians will achieve financial benefit through the realization of Meaningful Use incentive payments and/or the avoidance of Meaningful Use penalties. Building upon the work done on the original SOP, this sustainability plan will look at the pricing of the functionality offered, the margin generated from that pricing, how that margin will fund ongoing activities, and how providers will see a positive return for their investment.

7.4.2 Core HIE Functionality

In February of 2012, WISHIN undertook a process to form and solicit participation on workgroups designed to provide input to the HIE implementation process. In part, the deliverables of this process will prioritize the core functionality to be provided by the query-based system in hopes of maximizing the number of participants.

7.4.3 Barriers to Adoption

The finance plan section of the 2010 SOP identified specific challenges to HIE adoption in Wisconsin, including: existing localized data exchange, data that is perceived as disproving the benefits of HIE, participant capacities for implementation, and lack of trust among participants. While these challenges continue to be present today to some extent, recent national trends have resulted in groundswell of support for the value of

HIE services and have spurred the development of tools and techniques to mitigate these challenges.

This sustainability plan creates a cost-allocation model that assigns responsibility for HIE costs to stakeholder groups based on estimates of value they receive or perceive in order to demonstrate a positive return. The operational implementation of this concept may have to be revised in the future to ensure that participation levels are sufficient to sustain ongoing HIE services.

7.4.4 Pricing and Adoption

WISHIN's goal is to implement a pricing model that ensures sustainability by encouraging adoption and use of HIE services. There are two basic pricing models considered: transaction-based and subscription-based.

A transaction-based pricing model could put WISHIN at a disadvantage because providers would incur a charge for every message sent or query conducted and might then be discouraged from using HIE services because the more they use it, the more it will cost. In addition, transaction-based pricing models are difficult to calibrate, particularly in early years, because the total number of transactions (on which projections of total revenue are based) cannot be reliably predicted.

A subscription-based pricing model is more conducive to pricing HIE services in accordance with the value received by participants. Typically, this means requiring payers to pay the most, physicians the least, and hospitals to pay something in the middle. Variable pricing within each participant category is possible. For example, in terms of hospitals, there are many pricing models from which to choose, including bed size, average daily census, or adjusted revenue, that can more precisely correlate pricing to value delivered and/or ability to pay.

The Sustainability Workgroup evaluated both of these models and used information provided by HIE vendors to arrive at a recommended pricing model.

7.5 Revenue Requirements

The cost table above summarized the estimated costs WISHIN will face in implementing and operating statewide HIE services in Wisconsin. In the simplest terms, HIE services must generate revenue that is equal to or greater than those expenses.

The following table summarizes revenue requirements over the next five years. The table assumes CAP funding will be exhausted in 2013. Any additional revenue will need to be obtained via participant fees. How these amounts will be realized is discussed in the following section.

Revenue	2012	2013	2014	2015	2016
CAP Funding	$ 5,229,543	$ 1,839,556			
Participant Fees	$ 469,433	$ 3,941,769	$ 6,216,117	$ 6,733,222	$ 7,298,953
Total Revenue	**$5,698,976**	**$5,781,325**	**$6,216,117**	**$6,733,222**	**$7,298,953**

TABLE 7.5.1 – Estimated revenue requirements over the next five years

7.6 The Path to Sustainability

Sustaining HIE services is a complicated and time-consuming effort. To achieve and sustain adoption, value must be demonstrated and improved over time. Incorporating new value-added services increases cost to the HIE organization, and thus cost to participants. The issue is not so much ensuring that the services offered provide value, as HIE history has proven that providers will receive exponentially more value from HIE services than the cost of participation. Rather the issue is when to offer the additional services. Should they be offered immediately when both value and risk are highest, or should they wait until a sustainable base of participants can take on additional premium services?

The tables and plans that follow were created by the WISHIN Sustainability Workgroup using the above principles as a basis for discussions. .

7.6.1 Subscription Fees

The following paragraphs are based on the assumption that WISHIN requires the following fees to sustain operations. These are based on the comprehensive budgeting process undertaken during the original planning process, and may change as vendor contracts are finalized.

	2012	2013	2014	2015	2016
Participant Fees	$469,433	$3,941,769	$6,216,117	$6,733,222	$7,298,953

TABLE 7.6.1.1 – Estimated revenue from participant fees over the next five years

7.7 Adoption

As indicated above, the goal in the early years of the HIE is to achieve rapid widespread adoption, and thereby allow the operational costs of the HIE to be spread over a greater number of participants.

The following table quantifies the assumed number of participants under three adoption scenarios -- high, medium, and low. There is a single adoption scenario assumed for 2012. In subsequent years, adoption growth rates assume that a specified percentage of the remaining non-participating hospitals decide to participate in each succeeding year.

This adoption model ignores price as a component in adoption. Under normal circumstances, HIE organizations would be able to sell more licenses at a low cost than a higher cost. However, with the advent of increased reimbursements for achieving Meaningful Use combined with the price points identified below, price may not be a major factor in adoption.

	Adoption Growth	Statewide Universe	2012	2013	2014	2015	2016
Physicians - High Adoption	25%	11,760	500	3,315	5,426	7,010	8,197
Physicians- Medium Adoption	10%	11,760	500	1,626	2,639	3,551	4,372
Physicians- Low Adoption	5%	11,760	500	1,063	1,598	2,106	2,589
Hospitals - High Adoption	25%	128	5	36	59	76	89
Hospitals - Medium Adoption	10%	128	5	17	28	38	47
Hospitals - Low Adoption	5%	128	5	11	17	23	28

TABLE 7.7.1 – Implied participation totals under three adoption scenarios

7.8 Cost Allocation by Stakeholder Group

7.8.1 Benefits of Use Cases by Stakeholder Category

The 2010 SOP included an initial evaluation of the value delivered by each proposed use case for various stakeholder groups (see Table 7.8.1.1 below). WISHIN will further analyze and refine this information to support the development of marketing and outreach strategy.

Case #	Use Case	Payer	Provider	Specialist	Hospital	Patient	Labs	Public Health	Pharmacist
1	Provider refers patient to specialist (including care coordination document)	X	X	X	X	X			
2	Primary care provider refers patient to hospital including summary care record	X	X		X	X			
3	Specialist sends summary care information back to referring provider		X	X	X				
4	Hospital sends discharge information to referring provider	X	X		X				
5a	Provider orders Lab tests from lab or reference lab	X	X		X		X		
5b	Provider receives lab test results from lab or reference lab		X		X		X		
9	Provider sends a clinical summary of an office visit to the patient		X			X			
11	Provider sends reminder for preventive or follow-up care to the patient		X		X	X			
12	Primary care provider sends patient immunization data to public health		X						
13	Provider or hospital submits quality data and/or measures to the CMS, the State, and/or health information organizations	X			X				
15	Laboratory reports test results for some specific conditions to public health (Reference #33, #34)						X	X	
16	Providers send chief complaint (non-reportable) data to public health for syndromic surveillance		X			X		X	
17	State public health agency reports public health data to Centers for Disease Control					X		X	
18	Pharmacist sends medication therapy management consult to primary care provider	X	X			X			X
19	A patient or designated caregiver monitors and coordinates care across multiple domains	X	X			X			
25	Clinicians can send summaries to other providers and to patients.	X	X		X	X			
30	ED Linking	X	X		X	X			
31	Provide Advance Directives to requesting Providers	X	X		X	X			
32a	Provider sends reportable disease diagnosis data to public health					X		X	
32b	Provider sends non-reportable, anonymized disease data to public health					X		X	
35	PCP prescribes medication for patient.		X			X			X
36a	Lab orders test from another lab	X			X	X	X		
36b	Lab receives test results from another lab	X			X	X	X		
37	Release of Information (Provider to Provider) - Similar to referral only broader	X	X		X	X			
38a	Patient Opts Out of having records shared in HIE (via PHR or HIE Patient Web Portal)								
38b	Patient decides to Opt back In to having information exchanged in the HIE (via PHR)	X	X	X	X	X	X	X	X
39	Public Health sends feedback report to provider on clinical care, surveillance, interventions, disease management, and other factors		X			X		X	

TABLE 7.8.1.1 - Stakeholders identified as benefiting from each use case

7.8.2 Preliminary Cost-Allocation Model

There are four main stakeholder groups within the WISHIN HIE. Each group realizes different benefits in varying amounts from the existence and use of HIE services. The Sustainability Workgroup created assumptions of the percentage of value received or perceived by each stakeholder group, and set a revenue target based on that percentage.

Revenue Targets	Percent Responsibility	2012	2013	2014	2015	2016
Physicians	30%	$ 140,830	$ 1,182,531	$ 1,864,835	$ 2,019,967	$ 2,189,686
Hospitals	30%	$ 140,830	$ 1,182,531	$ 1,864,835	$ 2,019,967	$ 2,189,686
Payers	30%	$ 140,830	$ 1,182,531	$ 1,864,835	$ 2,019,967	$ 2,189,686
Other Sources	10%	$ 46,943	$ 394,176	$ 621,612	$ 673,322	$ 729,895
TOTAL	**100%**	**$469,433**	**$3,941,769**	**$6,216,117**	**$6,733,222**	**$7,298,953**

TABLE 7.8.2.1 – Cost allocations by stakeholder group

7.9 Revenue per Participant

Based on the required revenue and the cost-allocation model, the following table illustrates the average revenue needed per participant to meet WISHIN's financial requirements under each of the three adoption scenarios.

Revenue Needed Per Participant		Total Number of Participants	2012	2013	2014	2015	2016
Physicians - High Adoption	25%	11,760	$ 282	$ 357	$ 344	$ 288	$ 267
Physicians - Medium Adoption	10%	11,760	$ 282	$ 727	$ 707	$ 569	$ 501
Physicians - Low Adoption	5%	11,760	$ 282	$ 1,112	$ 1,167	$ 959	$ 846
Hospitals - High Adoption	25%	128	$28,166	$ 33,078	$ 31,708	$26,540	$24,581
Hospitals - Medium Adoption	10%	128	$28,166	$ 68,354	$ 65,733	$52,695	$46,294
Hospitals - Low Adoption	5%	128	$28,166	$106,057	$109,745	$89,606	$78,721

TABLE 7.9.1 – Pricing under three adoption scenarios

7.10 Pricing Strategy

7.10.1 Physician Pricing

There are many potential pricing models for physicians. Most are designed to match cost to physician value. The following table summarizes the pricing models evaluated by the Sustainability Workgroup:

Alternative	Description	Positives	Negatives
Cafeteria Pricing - Per Clinic - Per Provider - Per User	Each individual service carries a specific price	Participants only order services they need and therefore only pay minimal fees	Complicated to estimate HIE costs and revenues

Alternative	Description	Positives	Negatives
Bulk Pricing - Per Clinic - Per Provider - Per User	One price for all core HIE services	Simple pricing model minimizes administration and improves marketing message	Each provider will have a different value proposition
Per-Patient Pricing	For each ADT record, provider is charged a set price	If fee is low enough, per-patient model can help prove value	HIE revenues become tied to economic factors, and administration/billing is complex
Transactional Pricing	Each access or transaction originating from a provider generates a nominal fee	If fee is low enough, transactional model can help prove value	Impossible to estimate revenues

TABLE 7.10.1.1 – Physician pricing models

Proposed Pricing Model: After discussion of the various alternatives above, and review of the financial factors in the previous section, the Sustainability Workgroup is recommending at the bulk pricing model, at the per-provider level. Under the most conservative adoption scenario, each provider who requires access to the exchange would pay a monthly fee of roughly $100. All administrative, non-clinical users employed by that provider would receive access to the HIE system at no charge.

7.10.2 Potential Hospital Pricing

When deploying a pricing model for hospitals, HIE organizations need to consider the various factors that impact a hospital's decision to participate. While administrative and community benefits can be realized by HIE participation, the actual return on investment will vary greatly from hospital to hospital based on such factors as competition, level of existing community integration, and efficiency. The most common method for assigning fees to hospitals is a mechanism that matches fees to patient volume in some respect. This could mean using a per-licensed-bed model, a per-staffed-bed model, an average-daily-census model, or some form of daily-revenue model. It is important to use a fee structure that is simple and verifiable during the early stages of HIE implementation. This will ensure and level playing field, and encourage adoption by large and small hospitals alike.

Alternative	Description	Positives	Negatives
Relative Bed Size - Licensed Bed - Staffed Bed	Facilities would be grouped by similar size, with a flat fee assigned to each group	Simple model that loosely ties cost to size of the organization	The largest and smallest facilities in each group may appear to be pricing outliers. Pricing based on bed size does not recognize differences in outpatient activity/volume among facilities.

Alternative	Description	Positives	Negatives
Per Bed - Licensed Bed - Staffed Bed	Each facility requiring an Edge server would be charged a flat fee per bed. There are 12,000 staffed beds in WI hospitals.	Fees are charged in direct proportion to the size of the facility	Per-bed pricing does not recognize differences in outpatient activity/volume among facilities
Average Daily Revenue	Facilities are grouped by similar size based on average daily revenue. WI hospitals reported approximately $16 billion in net patient revenue in 2011	Fees are charged in direct proportion to the size of the facility	Economic factors, such as competition, recession, and reimbursement affect HIE revenue
Average Daily Census	Facilities are grouped by similar size based on average daily census	Fees are charged in direct proportion to the size of the facility	Economic factors, such as competition and recession, could affect HIE revenue. Pricing based on inpatient census ignores differences in payer mix and does not recognize differences in outpatient activity/volume among facilities

TABLE 7.10.2.1 – Hospital pricing models

Proposed Pricing Model: After discussion of the various models presented above, the Sustainability Workgroup is recommending a subscription fee for hospitals based on net patient revenue. This model will take into account both inpatient and outpatient volumes while fairly accounting for facility size in comparative fees. Exact fees will be determined following a comprehensive evaluation of available historical averages of net patient revenue for Wisconsin hospitals.

7.10.3 Potential Payer Pricing

In contrast to hospital and physician participants, payer participants in an HIE do not typically generate charges from HIE vendors to HIE organizations. Payer participation typically starts with providing eligibility feeds to the HIE for dissemination to providers, but may expand to support claim payment and case management use cases. Since the HIE organization does not incur a cost but can realize revenue, payer participation is an attractive way for HIE services to reach sustainability quickly.

Alternative	Description	Positives	Negatives
Per Member Per Year	Charge payers $1 - $2 per member per year. There are an estimated 2 million commercially insured patients in WI.	Fair model that accounts for size of organization	Unlikely to apply to the self-funded and Medicare populations
Revenue/Gain Share	Charge payers a percentage of gain realized from HIE services	Potential for large revenue; ties cost to value received	Difficult to predict and administration could be complex

TABLE 7.10.3 – Payer pricing models

Proposed Pricing Model: Given the infancy of the industry, it is recommended that the HIE start with the Per Member Per year pricing model while continuing more complex models.

7.11 Other Funding

As indicated above, WISHIN intends to work with various partners to secure additional funding for the health information exchange that will ensure sustainability in the future, including the Wisconsin Department of Health Services (DHS), which administers the Wisconsin Medicaid program, and the Wisconsin Department of Employee Trust Funds (DETF), which administers the government-employee health benefit program. Both agencies have representatives on the WISHIN Board of Directors.

7.11.1 Department of Health Services/Wisconsin Medicaid

Medicaid has made a significant investment in HIT and HIE in Wisconsin through the development and implementation of an exchange between the Milwaukee county emergency departments.

To further advance the adoption and sustainability of HIE services in Wisconsin, DHS has identified two distinct approaches for exploration: (1) Policy, and (2) FMAP Optimization. Details for each of these options are discussed in this section.

The Medicaid Agency has committed to exploring these options to support the adoption and use of health information exchange statewide. Medicaid will begin this effort through internal discussions where the various options will be prioritized based upon the impact and value proposition for each. Medicaid will then work with other Divisions within DHS, such as the Divisions of Long Term Care, and Mental Health and Substance Abuse Services to find opportunities to align initiatives and coordinate efforts. Proposals for how DHS will engage in HIE will then be presented to the Secretary's office for consideration. Once the Department's initiatives and priorities related to HIE have been set, the Medicaid agency will work collectively with WISHIN to prepare the proposals for CMS and ONC, and submit an updated IAPD to support these efforts.

7.11.1.1 Medicaid Policy

Medicaid could use policy and purchasing levers to support the adoption of HIE by Medicaid providers in the state. There are a series of options Medicaid should explore to support the adoption of HIE, and potentially lead to administrative efficiencies and better health care outcomes for Medicaid members. Below are preliminary details on potential options the Medicaid Agency should further explore:

Administrative Support (Gained Efficiencies)

- The State Health Information Network (SHIN) could be used to transmit Prior Authorization and Claims Adjudication requests to Medicaid, including the supporting documentation, labs, and imaging. Explore if the SHIN could provide a dashboard to providers on the status of their request/claims adjudication and provide a single point of entry for providers regardless of payer for their administrative functions.
- The SHIN could be used to transmit support documentation to the Office of the Inspector General (OIG) for all of their audits, reducing the paper submitted to OIG and the costs of storing the documentation.
- The SHIN could be used to transmit medical records to state and contractor reviewers.

Incentives to Medicaid providers

- Medicaid providers actively participating in care coordination and using the SHIN could be reimbursed for services at a higher rate.
- Medicaid providers who e-prescribe, check drug-drug and drug-allergy interactions against the patients records in the SHIN and use the Medicaid Preferred Drug List (PDL) could be reimbursed for services at a higher rate due to their efforts to reconcile prescriptions against patient records and preferences of the Medicaid agency.

Managed Care Organization Support

- Medicaid could require Medicaid Managed Care Plans to participate in the SHIN that would provide the basis for other plans participation in paying their "fair share," as required by the May 18, 2011, State Medicaid Directors letter.
- Medicaid could require Medicaid Managed Care Plans to have a set level of participation by their providers in the SHIN.

Pilot Projects

- Medicaid could provide access to the SHIN (pay for access) for Medicaid providers as a part of one of the Medical Home initiatives and/or the Long-Term Care Pilot Program, under the 2011-2013 Medicaid Efficiencies effort, to demonstrate the value of health information exchange and care coordination.

- Medicaid could require Medicaid Providers to participate in the SHIN as a part of the provider certification process for the integrated health care models proposed within the context of the Medical Home initiatives.

Provide Medicaid Data to the SHIN

- Medicaid could provide pharmacy data to the SHIN, populating the SHIN with important pharmacy data until there is larger adoption of the HIE to allow for robust clinical data exchange
- Medicaid could provide eligibility data to the SHIN

Quality Initiatives

- Medicaid could use the SHIN to collect Quality Measures as a part of the reporting process for the Medicaid Electronic Health Record (EHR) Incentive Program and other quality reporting initiatives undertaken by the Department

Wisconsin Immunization Registry (WIR)

- Medicaid could use the SHIN to connect WIR as a node on the Network and avoid point-to-point interfaces between WIR and Providers. The WIR would no longer need to support the implementation of interfaces with Providers and could focus resources on the collection and dissemination of Immunization information

7.11.1.2 FMAP Optimization

Medicaid could provide direct financial support of WISHIN. In order to optimize the Federal match (FMAP) on contributions to a health information exchange, Medicaid will have to follow the guidelines set forth in the May 18, 2011, State Medicaid Directors Letter. Most notably WISHIN will need to obtain written commitments from other Payers demonstrating they will pay a "fair share" of the costs so Medicaid is not the only payer contributing to the development and operations of HIE in the state. At this point discussions on the financial support that could be provided by the Medicaid Agency are too preliminary for inclusion in the SOP, and will be further explored via WISHIN's Sustainability Workgroup.

7.11.2 Department of Employee Trust Funds/Government-Employee Health Plans

DETF has indicated a willingness to explore providing direct or indirect support to WISHIN as follows.

7.11.2.1 Direct Support

DETF will consider providing direct financial support to WISHIN based on WISHIN achieving various thresholds of provider participation.

7.11.2.2 Indirect Support

DETF will consider providing indirect support to WISHIN by providing financial incentives to DETF health plans to contract with WISHIN-participating providers.

8 Technical Infrastructure and Services

(Technical Infrastructure and Services was Section 7 in the 2010 SOP)

Wisconsin envisions a "network of networks" architecture for statewide and interstate HIE that it is comprised of a Wisconsin state-level exchange network, participating Wisconsin medical trading areas or non-geographic exchange networks, other neighboring state-level exchange networks, and the NwHIN. This architecture recognizes that HIE is about use of services to be delivered, and not the service itself, and will carry a patient-centered focus to its evolution.

The proposed technical architecture interprets recommendations made by the original WIRED for Health committees as well as WISHIN advisory committees and gives due consideration to the following objectives:

- Provide secure and reliable electronic exchange of health care information between health care providers (e.g., hospitals, laboratories, physician offices, ambulatory treatment centers, and pharmacies) and other stakeholders of Wisconsin's health care system
- Develop a standards-based architecture and core HIE services that can help meet Meaningful Use requirements for EPs and hospitals
- Formulate a state-level business process for selecting and adopting standards, and staying in sync with evolving national standards and initiatives (e.g., NwHIN Exchange, NwHIN Direct)
- Create a roadmap for how Wisconsin's SHIN and HIE services will reach all geographies and providers across the state, be able to continuously receive, access, and transmit health information among health systems, and connect to the NwHIN and other states' networks
- Determine HIE use cases to be implemented and create a high-level deployment roadmap
- Identify an architectural solution that accounts for medically underserved areas, technology challenged areas, or areas falling between currently functioning medical trading area HIE networks
- Incorporate safeguards for privacy and security of protected health information

The WISHIN Board recognizes that the proposed architectural solution for a SHIN is an evolving construct. The ever-changing federal landscape and Wisconsin's health care and business needs will continue to influence and shape the architecture. The current recommended solution, a hybrid architecture, is believed to best serve Wisconsin's needs given the current landscape. This section describes the recommended solution and includes information about potential HIE services; a reference architecture that describes the integration of existing assets and initiatives; alignment with the NwHIN, Medicaid and Public Health; and a potential roadmap for the deployment of HIE services in support of Meaningful Use.

8.1 HIE Services

In October 2010, the WIRED for Health Board's Standards and Architecture Committee formed an ad-hoc workgroup to select, categorize, and prioritize use cases that could serve as input to the implementation roadmap for the SHIN and HIE services (see Appendix 6 for information on the original set of use cases).

As HIE discussions continued in 2011, WISHIN and Wisconsin's stakeholders identified additional use cases. Expanded HIE services emerged and other factors were identified as important considerations for finalizing the HIE implementation plans, such as cost, time to implement, sustainability, and capabilities of the technical solution vendor.

Given these considerations, and the evolving HIE landscape, WISHIN established a Value Proposition workgroup to further define and assess potential HIE "value-added services". A key factor in this analysis was sustainability: Would the HIE participants be willing to pay for such services?

8.1.1 Roadmap for Implementation

The Value Proposition workgroup's initial analysis activities, along with other stakeholder research and discussions, have resulted in a growing awareness of the value of the use cases that will take Wisconsin beyond those that are primarily "push" events.

The initial list of prioritized use cases and the feedback from the Value Proposition Workgroup serve as the primary drivers of the implementation roadmap.

The use cases provide the framework for the overall scope of work that must be completed, but the continuously changing health care environment demands our implementation plan be flexible and responsive. As such, our use cases have been, and will continue to be, evaluated and modified as our efforts toward statewide HIE progress.

The sections below outline four scenarios that have resulted from integrating the output from the WISHIN Value Proposition Work Group with the previously identified use cases. The resulting scenario-based models will drive our implementation roadmap.

8.1.1.1 Coordination of Care Scenario

A patient is discharged from an inpatient stay or an emergency department (ED) visit. A discharge summary is forwarded to the HIE and distributed to those with a known care relationship with the patient (such as primary-care provider, admitting provider, care manager at managed care organization, accountable care organization, and if applicable, to the patient's personal health record).

Subsequent events (e.g. a primary-care appointment, a nursing home admission, a home health visit, or a pharmacy medication pick-up) can be triggering events to "push" health information to the "appropriate" audience, updating information around the coordination of care.

These documents and associated events would also be maintained at the HIE, as entries in the Record Locator Service, so that others who may have a verified care relationship and appropriate consent can review the events and seek additional information via the HIE.

This information sharing establishes event-driven "coordination of care" for the patient, and enables increased assurance that readmissions are prevented through timely follow-up to the initial discharge and subsequent events.

8.1.1.2 EKG Image Sharing Scenario

A patient presents in the ED with a chief complaint of chest pain. The admitting event establishes a "care relationship" between the patient and the ED Team. At this time, presence of consent or acquisition of consent is undertaken.

Based on the event, the HIE notifies the ED staff of the presence of an EKG that was associated with a previous encounter. At the request of the ED provider, or automatically, the HIE retrieves this image from the source (or from the HIE if it is stored there), and provides the EKG to the ED provider for comparative analysis.

This scenario supports a critical element of diagnostic work-up for suspected myocardial infarct patients and demonstrates movement of images among HIE and participating entities.

8.1.1.3 NwHIN Gateway Scenario

This scenario involves a connection to a non-WISHIN organization either from another state or the federal government. Wisconsin has two organizations (Marshfield Clinic and HIE -Bridge) that have existing connections to the Social Security Administration (SSA) via the NwHIN for review of disability benefits. These existing organizations would serve as ideal knowledge centers for WISHIN's NwHIN connection. The current process supported at these organizations is below:

1) SSA requests patient discovery
2) Clinic sends consent request to SSA
3) SSA returns consent form
4) Clinic performs patient inquiry against MPI
5) Clinic sends patient discovery results to SSA
6) SSA sends document inquiry
7) Clinic responds with index of available documents
8) SSA requests appropriate documents
9) Clinic sends requested CCD document(s)

8.1.1.4 Public Health Reporting Scenario

This scenario includes the required reporting to the Wisconsin DHS for reportable tests, syndromic surveillance, and immunizations.

Reportable tests will come from the performing lab through the HIE. As these tests flow through the HIE they will also be routed to the DHS.

For syndromic surveillance, most of the data comes from Emergency Department or Urgent Care admitting. As the chief complaint is captured, the data will flow as an admission/discharge/transfer (ADT) message to the HIE where the encounter will be aggregated with others and provided in both near real-time and batch to the Division of Public Health.

For Immunizations, after the immunization is administered to the patient, the EHR will create an unsolicited vaccine update message (VXU) which will flow to the HIE and be routed to Wisconsin Immunization Registry (new sites only, not proposing changes for existing sites).

8.2 Reference Architecture

8.2.1 Architecture Overview

As an initial foundational element of the HIE, WISHIN, along with its Technical Manager, WHIE, has implemented a Direct secure messaging service called WISHIN Direct. WISHIN Direct successfully deployed on August 26, 2011. Since then, several hospitals and physicians in the state have used WISHIN Direct to demonstrate CCD exchange for Stage 1 Meaningful Use. Eight WISHIN Direct demonstration projects have been identified to further demonstrate how WISHIN Direct can be used to facilitate the directed exchange of health information among providers. Each of the demonstration projects is in a different stage of implementation. Section 11 shows the high-level timeline for the WISHIN Direct demonstrations, along with key tasks for integrating WISHIN Direct into Wisconsin's patient-centered, bi-directional exchange.

Building on the foundation established with WISHIN Direct, SHIN architecture approach is based on using time-tested and well-proven techniques that lower overall risks and help define a proven path to success. As key Wisconsin stakeholders define and express their needs, and health care information exchange use cases are developed, the work of the technical architecture definition process begins. The architectural process involves translating these stakeholder needs and use cases into technology solutions that provide the framework, standards, and descriptions to design and implement Wisconsin's SHIN. By evaluating the key elements of the most successful networks in history (Internet and public telephone) and by following the lead of the NwHIN architecture, we identified the following guiding principles as key to the widespread use, scalability, sustainability, and ubiquitous connectivity of Wisconsin's SHIN.

- Recognition of the complexity of change and maintaining a focus on people, process, and technology, ensuring alignment to optimize the impact of HIE

- Recognition that change is cultural for patients and providers and less about the technical solution
- Highly scalable, hierarchal, multi-tier "network of networks" connection model
- Well defined standards that support a broad base of multi-vendor connectivity and interoperable solutions
- Each tier/layer of the network has well-defined and clear functions
- All participants agree to a common set of technical standards and policies that align with the NwHIN
- Modular architecture and design uses proven, standardized components that can be easily replicated throughout the network
- Replication of modular components allows simple, predictable, and cost-effective scalability of networks over time
- Common public/global and local/private network addressing/indexes with network address/index translation techniques that link these indexes together
- The network should ideally provide: connectivity between end points, the ability to exchange or access information bi-directionally, support for both push and pull workflows, indexes/addressing/translations to map connections or information, and core services that support the exchange and connectivity to the actual information

Within the industry, the majority of attention around HIE architecture has been focused on three data storage and access models:

- Centralized
- Decentralized/fully federated
- Various hybrid approaches

A brief description of each model is presented in the following table.

Model	Description
Centralized	In this model, the HIE collects and stores patient data in a centralized repository, data warehouse, or other database. The HIE has full control over the data and the ability to authenticate, authorize, and record transactions among participants. Data is stored in a single common repository and segregated by each provider institution.
Decentralized/Fully Federated	A federated architecture uses interconnected independent databases that allow for data sharing and exchange, granting users access to the information only when needed. A distinguishing feature of a federated system is that the system employs multiple patient identification technologies, often called Global Patient Indices and Master Patient Indices. This architecture is located centrally and at participant organizations.
Hybrid	Numerous and broad *hybrid* variations of the federated and centralized architectures are currently being used by different organizations to harness the advantages of both architectures to achieve clinical data exchange. Hybrid architecture could include both central and federally located constructs such as repositories, indices, and services.

Table 8.2.1 HIE Architecture Models for Data Storage and Access

The key to traditionally successful architectures has been to achieve a balanced approach in meeting the overall requirements of the system. It is the consensus of the WIRED for Health Board that the hybrid architecture approach will best meet the needs of the SHIN and is consistent with the approach adopted by the NwHIN and several other leading HIE vendors. To that end, Wisconsin has identified the following key architectural elements:

- Information indexing and translations
- Data storage and access
- Core Health Information Exchange (HIE) services

The hybrid HIE architecture approach may require some storage in the SHIN backbone for non, real-time clinical needs such as public health analysis and quality reporting functions, since this may remediate potential performance or latency issues caused from data being pushed or pulled across the SHIN backbone directly to the end point organization's storage/database. Please refer to Section 10.4.2 on data use agreements.

The key to success will be to truly harmonize an overall architecture that brings together the above three key HIE architectural elements into a single model that is technically elegant, simple and efficient to build, scalable, and successfully serves the unique needs of our Wisconsin stakeholders.

8.2.2 Architecture Model and Data Flows

Multi-tiered architectures have long been known for their inherent scalability and ability to keep the flow of information between sender and receiver as local to them as possible. These architectures rely on the assumption that the majority of the information that is exchanged between a given group of senders and receivers is of local interest only and can be locally resolved within the local exchange network. As you move farther outside areas of local interest, the overall amount of data exchanged is less and less between local exchange network areas. From a WIRED for Health perspective, the reference architecture supports these assumptions, and the layers of Wisconsin's SHIN are centered on a three layer model using medical trading areas, statewide regional exchange areas, and national areas of exchange.

This multi-layered reference architecture would provide the ability for several options to exist in accessing the Wisconsin SHIN. The SHIN architectural components are defined in the following table.

Architecture Components	Definition
Medical Trading Area Exchange Network	An exchange network focused on information flow in a specific medical trading area, usually defined by geography (e.g., regional HIE network)
Non-Geographic Exchange Network	A local exchange network focused on exchanging information across geographies, typically as part of an IDN

Architecture Components	Definition
Bi-directional Web Portal Access	A web-based portal that allows two-way flow of information to and from providers who do not have an EHR installed. In addition, a non-EHR participant may submit data electronically using standards or agreed to data formats. This does not have to be an "online" submission.
Individual EHR Direct Connection	An individual provider who needs to connect directly to the SHIN backbone
DIRECT Secure Messaging	WISHIN DIRECT and WISHIN Bridge services will be leveraged to provide an "on ramp" to the SHIN, employing the current and evolving standards of DIRECT.

Table 8.2.2 Architecture Component Definitions

As shown in the following figure, there are several options for both medical trading area-based exchange networks and non-geographic exchange networks. The SHIN provides direct access options for organizations that do not have an EHR and need to directly interface to a state-level exchange web portal or for individual EHR installations that cannot connect into a local layer 1 exchange and need to connect directly to the state level HIE backbone.

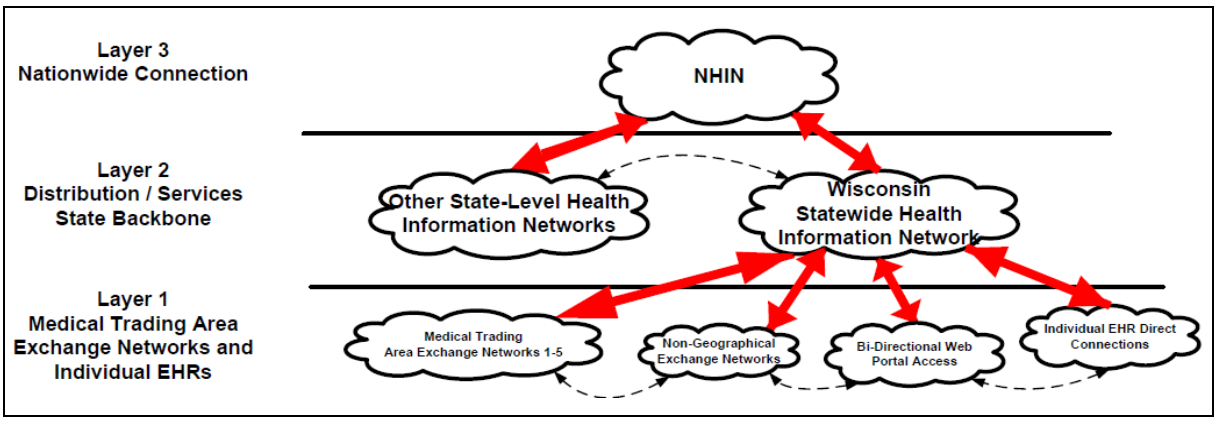

Figure 8.2.1: Multi-layered reference architecture

An individual medical trading area exchange or a non-geographical statewide local access exchange would exchange data locally within the access layer (layer 1) where most of a patient's informational needs would reside and medical services would occur and be serviced from within any given medical trading area. The following figure shows examples of possible local access layer exchange data flows between provider types and medical services organizations that may exist within a medical trading area exchange network.

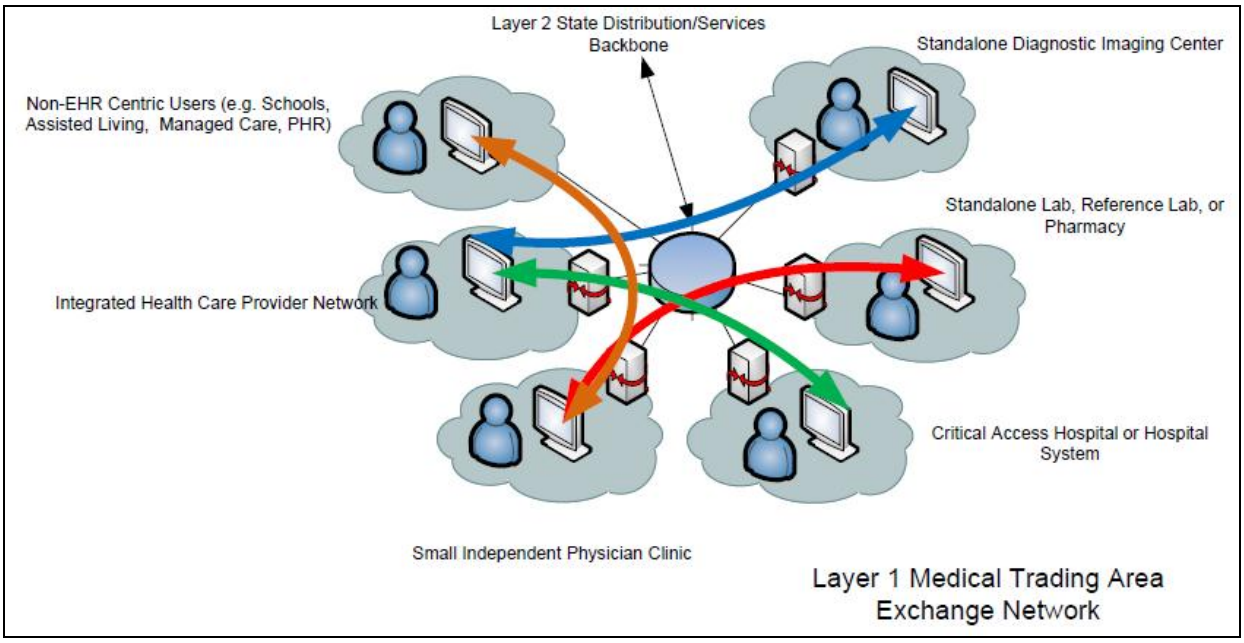

Figure 8.2.2: Medical trading area exchange network (Layer 1)

This multi-layered architecture would also provide multiple medical trading area exchange networks across the state to exchange data—preferably using the SHIN backbone (layer 2) where these information requests can be resolved between any of the local exchanges connected to the SHIN backbone.

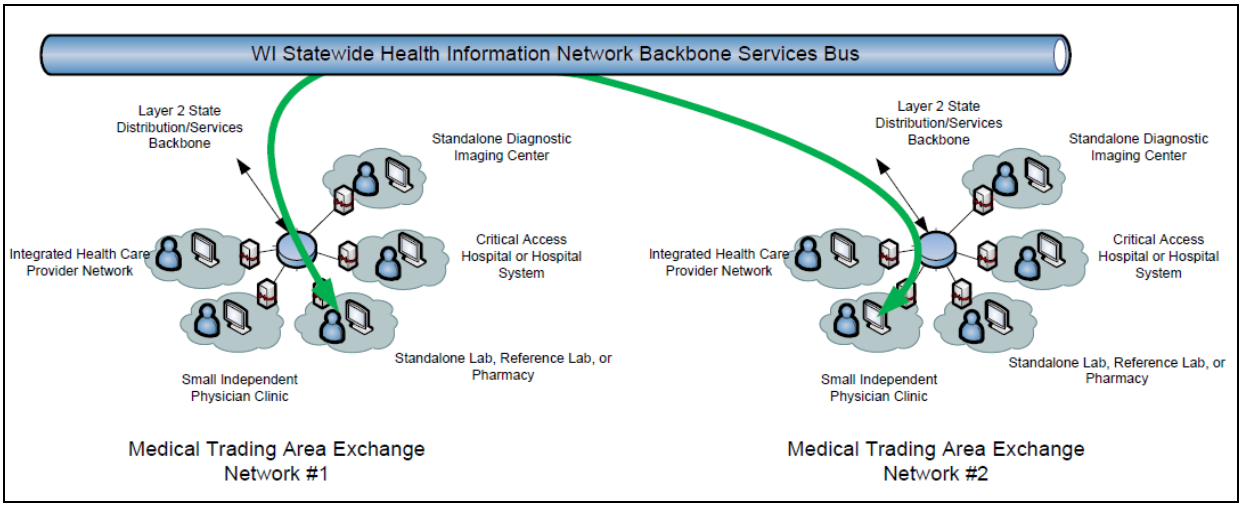

Figure 8.2.3: SHIN backbone connected to medical trading area exchange networks

Another access layer (layer 1) requirement would be to enable medical providers, specialized medical care facilities, or medical service providers to have access to the exchange to both push and pull medical information without the specific requirement of being connected to a local exchange. These providers may not have EHRs within their facilities, or may not have the ability to connect to the SHIN backbone or a medical trading area exchange network for a variety of reasons. This approach, shown in the figure below, allows another connection and information exchange model that will support a migration path to get started and interact with the SHIN with a much

lower set of initial requirements. As these providers move forward with EHR technologies, they will eventually connect into a layer 1 exchange network or can continue to directly connect to the state-level exchange network.

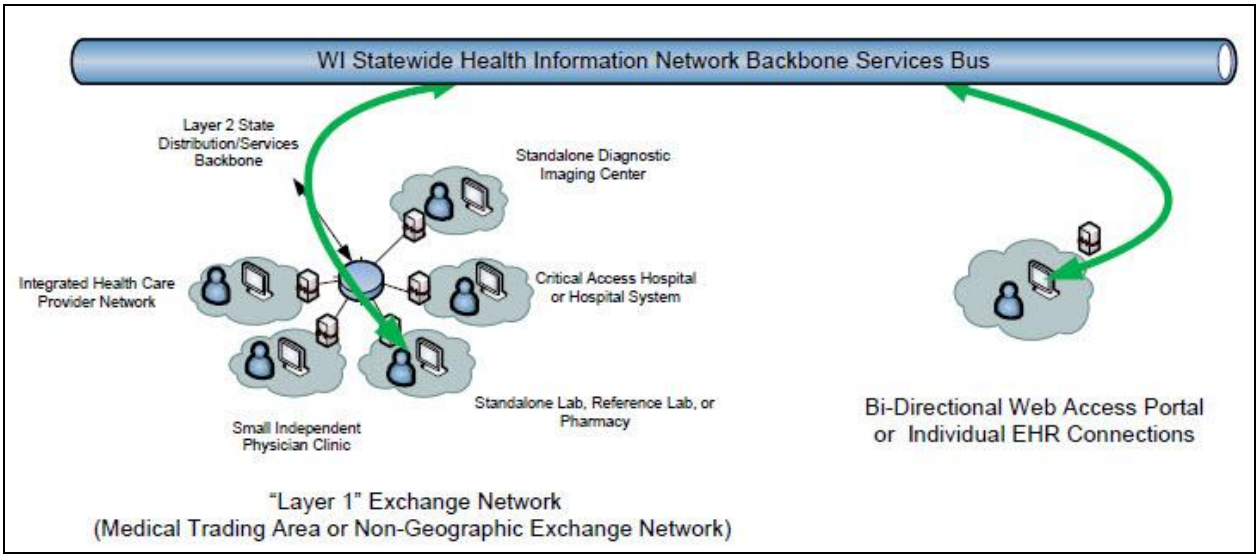

Figure 8.2.4: SHIN backbone connected to layer 1 and bi-directional web access portal or individual EHR connections

8.2.2.1 Architecture Description

The architecture for Wisconsin's SHIN should follow well-tested and time-proven processes to translate needs, requirements, strategies, and use cases from key stakeholders, with ongoing clinician input, into the proposed solution. The architecture will have services as nodes on the network to provide discovery of patient identifiers to locate patient data. As indicated in the architecture overview, this process is the ability to technically describe tangible solutions based on all of the various inputs from key Wisconsin stakeholders. In addition to the information provided in the previous sections, other important architectural considerations include:

- Using, integrating, and preserving as much of the existing technology capabilities and investments that have been made across the state with respect to HIE
- Enabling the widespread adoption of the ARRA Meaningful Use requirements through a meaningful and helpful set of solutions
- Realizing the defined and evolving use cases for the Wisconsin SHIN through phased implementation

As described in the above sections, one of the key attributes of this architecture is the use of and the ability to integrate into existing medical trading area exchange networks that are integrated by the SHIN backbone. These medical trading area exchange networks are or can be either medical trading area-based, or statewide non-geographic-based exchange networks that are used to best serve the patients and medical organizations unique needs within a given exchange network. With this architecture approach, existing technology investments can be preserved and can

encourage future local/regional area investments in order to meet information exchange needs that may not be necessary or needed in the overall scope of the state-level exchange network. Additionally, this architecture allows for consideration of existing HIEs to provide services to geographies where such services are desired, again extending existing investments and enabling intra and inter EHR exchange.

There would be no mandatory requirement to participate in these medical trading area-based exchanges. Connecting to more than one local exchange should be supported and encouraged, especially for rural providers who frequently straddle geographic boundaries and are outside of urban markets, particularly if this provides better services and continuity of care to the medical trading areas being served. Providers that participate in multiple local exchanges will have to choose a "primary" exchange to avoid duplicate information responses to the SHIN backbone.

Common core services have been defined as a set of resources provided by the SHIN backbone to aid in the exchange of information across the state and between the local exchanges, and also through the SHIN backbone to the NwHIN from the local exchange networks and Wisconsin state agencies directly connected to the backbone.

Category	Core Service

Indices	• Patient Index (Master Person Index)
	• Patient Information Locator Service
	• Provider Directory
	  ○ Health care Organization Index (end points reachable/ connected by the exchange)
	  ○ Skilled Nursing Facility/ Long Term Care Facility Index
	  ○ Pharmacy Index
	  ○ Reference Lab, Internal Medical Organization Labs, or Standalone Lab Index
	• Payer Directory
	• NwHIN to SHIN (Patients, Providers, etc.)

Registries	• Patient Consent Registry • Other Registries
Exchanges	• Connections/gateways to key organizations that maintain statewide directory information to feed indexes • Gateways to regional, state, and national reference lab organizations (i.e., Quest, LabCorp, etc.) • Gateway to NwHIN • Direct Connection/Gateway to Medicaid's interChange system, the Wisconsin Immunization Registry, and the Public Health Information Network, and other statewide agencies of common interest

Category	Core Service
Other	• NwHIN Direct based bi-directional secure messaging • Information access portal (for providers only) • Personal Health Record Portal (for patients) • Digital Certificate Authority • PKI (Private Key Infrastructure) Encryption Key

Table 8.2.3 Common Core Services

The following figure shows the high-level architecture proposed to meet HIE requirements established by the stakeholder representatives who participated in this planning effort. The design and implementation processes will provide further detail and will be refined as the architecture is tested and validated.

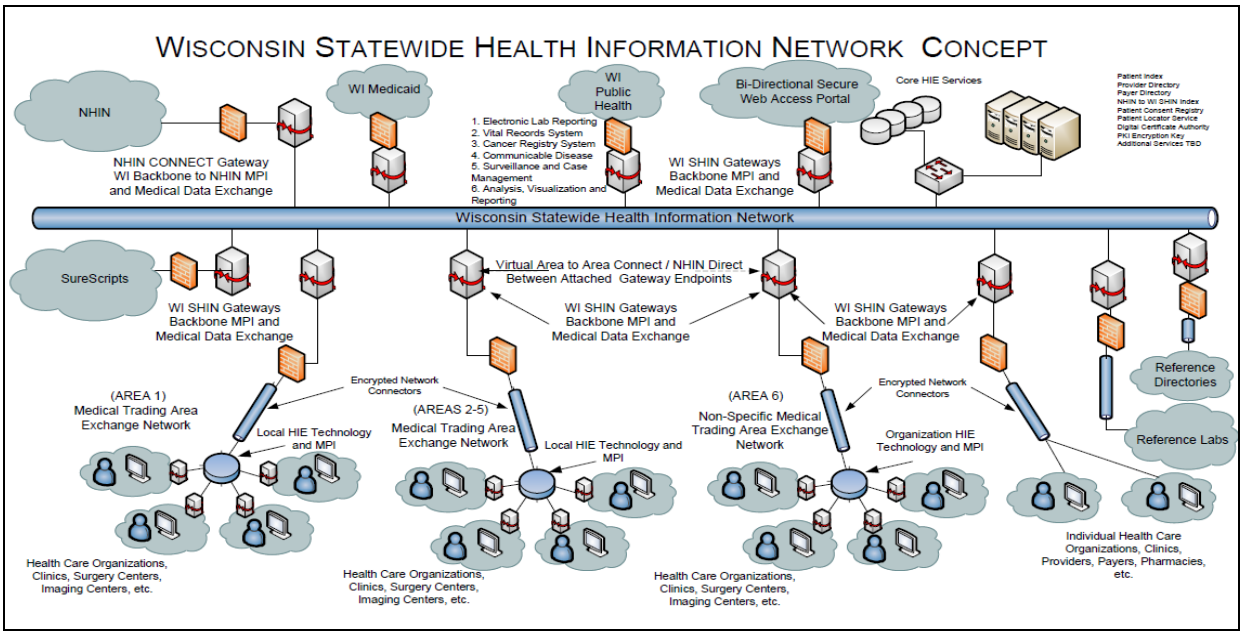

Figure 8.2.4: High-Level Architecture

8.2.3 Authentication and Security

The deployment of SHIN is predicated on establishing a consistent chain of trust within which all parties can operate with a high degree of confidence and to protect this environment from any intrusion or data leakage that could adversely affect the overall trust of the HIE environment. A foundational element to this chain of trust is a standards-based security framework. To achieve broader implementation of strong security, exchange participants need a uniform set of requirements that define the appropriate processes, standards, and technologies commensurate with the identified level of risk. A security framework will bridge the gap between business risks, security requirements, and technical solutions and enables clear policy development and good practices for security throughout and across the network.

Wisconsin's approach to developing an "end-to-end" security framework is through the use of rationalized requirements linked to the various legal and regulatory requirements.

It is to this end that Wisconsin continues to monitor the option of leveraging the Health Information Trust Alliance (HITRUST) Common Security Framework (CSF) as a foundation for Wisconsin's framework. The HITRUST CSF is based on leading information security standards and regulatory requirements (e.g., HITECH, HIPAA security rule, ISO 27002, NIST 800-53), and would enable Wisconsin to address the various dimensions of security management. Additional regulatory requirements and standards, such as those promoted by the HHS, NwHIN, ONC, and Wisconsin's state privacy laws, will be identified and integrated into the security framework as necessary. Similar to the Payment Card Industry Data Security Standard (PCI DSS), the HITRUST CSF enables organizations to certify that they have properly implemented the CSF security safeguards, which will undoubtedly aid in Wisconsin's compliance efforts. The certification process is designed to remove the variability in acceptable security requirements by establishing a baseline defined and used by the health care industry.

To achieve the vision for secure exchange of protected health information (PHI), an architecture, which will enable secure interactions between exchange participants and WISHIN, is also necessary. This creates a brokerage of trust between participants facilitated by the exchange. This security architecture consists of the integrated technical components (i.e., hardware, software, networks, applications, and protocols) and security services (i.e., authentication and authorization, data protection, auditing and reporting, event management, etc.) required to deliver services in accordance with the security framework and the programs necessary to support them. The security architecture also addresses secure integration of applications and the security and authentication of the underlying devices and technology supporting HIE-related transactions.

The security framework will serve as a key input into the design of this dynamic and broad-based security architecture by identifying prescriptive and appropriate physical, technical, and administrative security safeguards. The security architecture, as shown in the following figure, will use a layered approach, which includes four layers: Data, Presentation, Application, and Infrastructure.

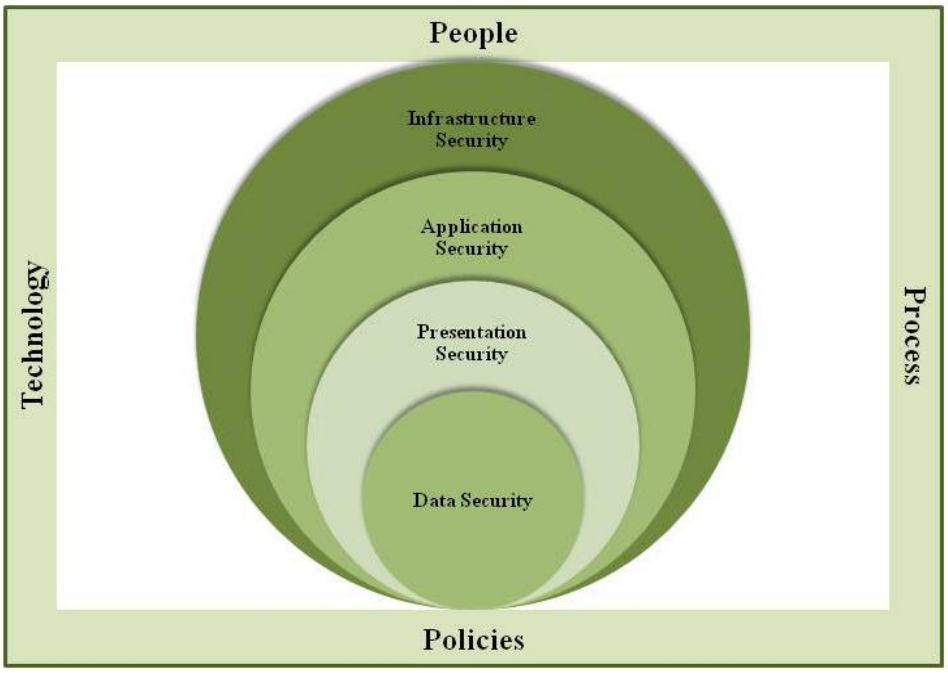

Figure 8.2.5: Layered approach to security

Below are several suggested guidelines intended to provide direction regarding the development and implementation of a security framework, a comprehensive set of security and privacy policies, technology capabilities, and technical services and safeguards. These will guide WISHIN's implementation of the technical architecture for the SHIN and HIE services.

In certain instances, these guidelines further crystallize the high-level HIE criteria set forth in the Meaningful Use rule and in HIPAA, making it important to consider them in planning an HIE infrastructure for Wisconsin.

Architecture Layer	Recommended Guiding Principle
Data	**Data Protection:** WISHIN will define and oversee implementation of broad-based security technologies, such as encryption and practices to ascertain the authenticity, confidentiality, and integrity of the health data or information processed by the network. The security technologies used should meet compliance requirements, protect data in motion and at rest, and prevent data leakage.

Architecture Layer	Recommended Guiding Principle
Presentation	**Authentication:** WISHIN will determine authentication requirements, including credential types and attributes, based upon an evaluation of acceptable risk for user authentication, system-to-system, and mutual authentication. The network will authenticate each authorized user's identity or participant's exchange system, prior to providing access to PHI and to the level of authorized access that complies with WISHIN's data use agreement. **Authorization:** Authorization is the process controlling a user's access to the network. Specifically, WISHIN will determine the appropriate authorization model, tools, and methodologies commensurate with the identified level of risk. The use of a role-based access control (RBAC) authorization model, which defines and manages a user's access to the network, is strongly encouraged. Additionally, WISHIN should consider alignment with *The Federal Identity, Credential, and Access Management (FICAM) Roadmap and Implementation Guidance*, which outlines a consistent approach for managing the vetting and credentialing of individuals. It is important to note that WISHIN shall only be responsible for defining the categories of roles (e.g., physicians, clinical office staff, inpatient nursing staff) and the appropriate technical access rules associated with these roles. Participating organizations will be responsible for determining who the individual users from their entity are and what their role assignment will be, in compliance with the SHIN's Data User Agreement.
Application	**Audit and Logging:** WISHIN will define the technical and administrative requirements for collecting data on disclosures, internal events, and externally provided data; and the technical and administrative requirements for correlating and communicating real time actionable events to enable effective risk mitigation. Additionally, WISHIN will implement policy and procedures that establish mechanisms for the regular review of logs with a process to escalate an event requiring further investigation. System and event logs should be managed in a secure manner such that the integrity of the logs are preserved and should be resistant to tampering and unauthorized access including viewing and deleting of the log data. Audit logs pertaining to disclosures would enable WISHIN to report on network transactions related to health care treatment, payment and operations.

Architecture Layer	Recommended Guiding Principle
Infrastructure	**Infrastructure Security:** WISHIN will define and oversee implementation of appropriate supporting protective software, hardware, and operational procedures that provide mechanisms to protect the network (i.e., such firewalls, application firewalls, anti-virus, patching, configuration management, vulnerability scanning, and intrusion detection, etc.). **Availability:** To plan for and manage system and network outages due to situations, such as hardware crashes, software malfunctions, or denial of service (DOS) attacks, WISHIN will ensure a comprehensive business continuity plan is in place. This plan will help anticipate and mitigate outages and interruptions before they occur and should include plans for replacing information systems and other critical resources during an incident (i.e., disaster recovery planning).

Table 8.2.5 Proposed Security Framework

8.2.3.1 Security and Privacy Risk Management

WISHIN will conduct ongoing security and privacy risk assessments to enable a comprehensive view of where security and privacy risks exist within the environment. The risk assessment methodology should be standards-based and provide WISHIN with the ability to determine the level of security and privacy risk across key services as well as enable a process to evaluate the existing physical, administrative, and technical safeguards within the operating environment. WISHIN will be responsible for developing action plans to mitigate areas of risks and having capabilities to monitor and report on the entity's overall risk posture.

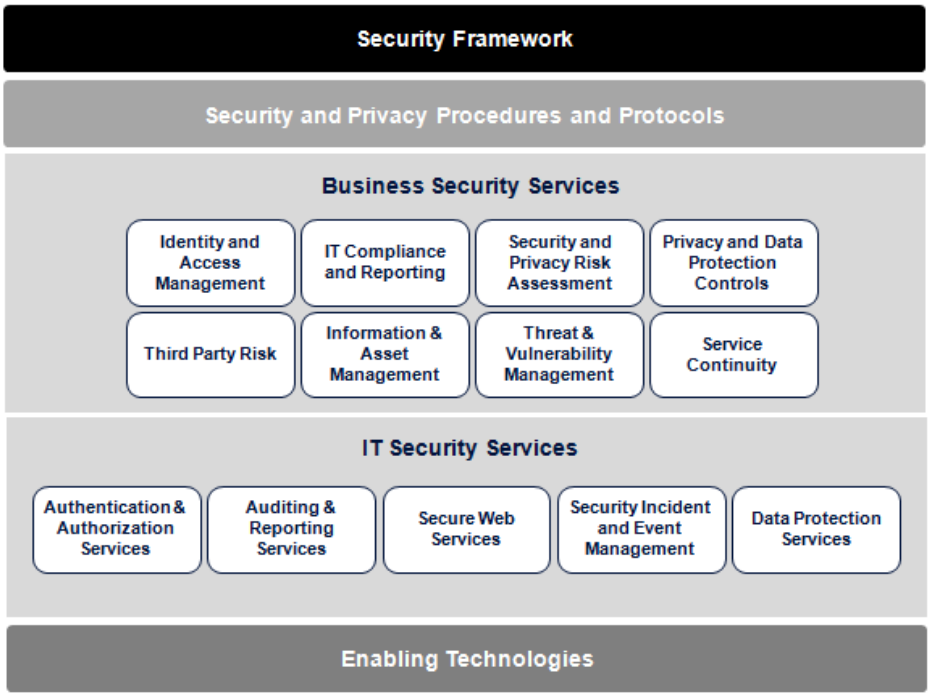

Figure 8.2.6: Security reference architecture

8.2.4 Standards, Interoperability, and Certifications

The mission of WISHIN is to develop and sustain trusted, secure SHIN and HIE services that provide value to participants. One of the goals to support this mission is to develop a scalable, standards-based technical architecture for statewide HIE that leverages existing investments in HIT. WISHIN's mission and goals endeavor to improve health care quality, increase patient safety, reduce health care costs, and improve public health.

A key component in the delivery of WISHIN's mission is defining a methodology for the adoption of standards-based technology that aligns with national protocol and guidance from the Office of the National Coordinator (ONC). The standards and adoption methodology defined by WISHIN have been adapted to fit the changing national HIT landscape due to the Health Information Technology for Economic and Clinical Health (HITECH) Act.

Adoption Methodology

The area of standards in HIE is highly dynamic; therefore, it is necessary to define a methodology for the adoption of standards to ensure interoperability of the SHIN. The adoption methodology is a continuous cycle as the ONC routinely releases recommended standards for evaluation.

Evaluation and Adoption Structure

WISHIN has developed a hierarchical review process consisting of the WISHIN Board, WISHIN Technical Committee, and ad-hoc WISHIN Technical Committee workgroup(s) for the evaluation and adoption of emerging standards. The hierarchical approach allows for standards to be reviewed at the appropriate level, as well as to be escalated if consensus cannot be reached at any particular level. The graphic below displays the WISHIN organizational structure as it relates to the standards and adoption methodology:

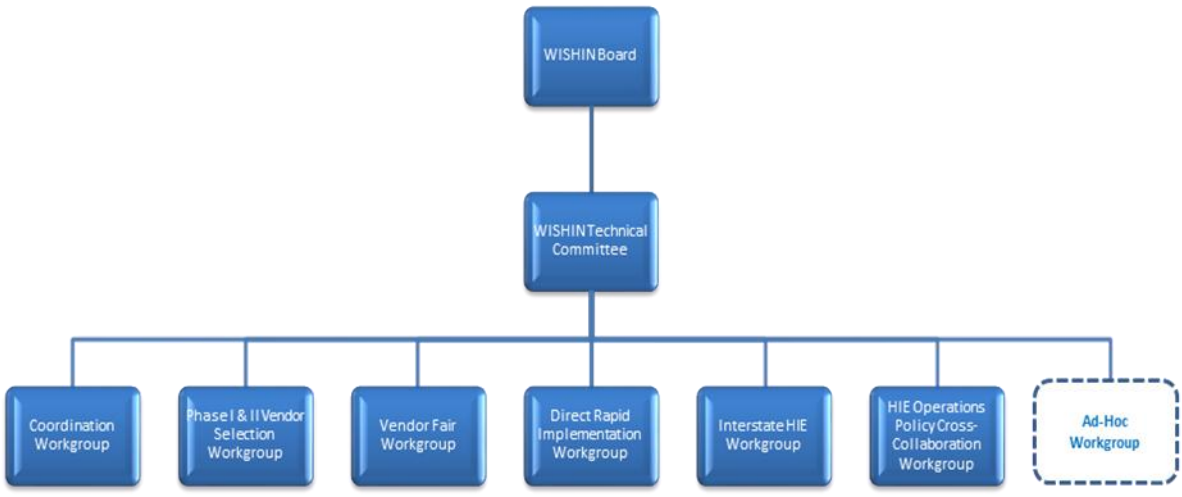

Figure 8.2.7: WISHIN Organizational Structure for Standards and Adoption Methodology

The WISHIN Technical Committee has established Standards Recommendation Entities that are considered the primary sources of information on emerging standards. The WISHIN Technical Committee will annually review Standards Recommendation Entities to validate that information provided from this source is in alignment with federal guidance and industry standards.

WISHIN employees, Technical Committee members, and other WISHIN affiliates are responsible for the identification of new or emerging standards. When a new or emerging standard has been identified, the WISHIN Technical Committee is responsible for delegating evaluation to the appropriate workgroup. The roles of the Technical Committee workgroup(s), WISHIN Technical Committee, and the WISHIN Board in the standards and adoption methodology are outlined in the following sections.

8.2.4.1 Ad-Hoc WISHIN Technical Committee Workgroup(s)

The WISHIN Technical Committee workgroups are comprised of resources with deep technical knowledge that understand the importance of interoperability and standards based architecture. For this reason, ad-hoc Technical workgroups will be created to identify, monitor, and provide recommendations for the consideration and implementation of emerging standards, based on the technical expertise of resources. The ad-hoc technical workgroups will meet as frequently as required to evaluate standards. Standards to be evaluated will be prioritized based on the WISHIN's service offering roadmap. The Ad-Hoc Technical Committee workgroups will use the following methodology to facilitate workgroup decisions:

Figure 8.2.8: WISHIN Technical Committee Workgroup Methodology

Identify & Analyze

- Review and analyze emerging and existing standards recommended by approved entities
- Analyze how emerging standards align with existing HIT investments
- Perform impact analysis for Wisconsin-specific providers, including those in the white space, through provider outreach

Evaluate & Classify

- Evaluate applicability to WISHIN in terms of industry readiness and current adoption status
- Evaluate how the system may operate with multiple standards for a period of time
- Classify into standards that are ready for statewide use or standards with limited adoption that require further evaluation
- Align recommended standards with ONC recommendations

Validate Feasibility

- Validate proposed recommendations on standards and assess feasibility of adoption with subject matter experts (SMEs)

Recommend to WISHIN Technical Committee

- Provide a comprehensive report to the WISHIN Technical Committee, including: required standards for state backbone, recommended standards for statewide adoption, and recommended standards to monitor, timelines, work plans, identified issues/risks, and budget information

8.2.4.2 WISHIN Technical Committee

The WISHIN Technical Committee provides oversight of the Ad-hoc WISHIN Technical Committee workgroup(s) and serves as a point of escalation for standards decisions that cannot be addressed at the workgroup level. The Technical Committee uses the following methodology to facilitate Committee discussions:

Figure 8.2.9: WISHIN Technical Committee Workgroup Methodology

Review Technical Workgroup Submissions

Review the analysis, evaluation, and feasibility evaluation submitted by the Technical workgroups and provide feedback to workgroups

Request Additional Information if Necessary

Identify gaps in workgroup submission and request additional information if necessary

Request research of identified alternate solutions

Recommend to WISHIN Board

Provide a comprehensive report to the Board, including: required and recommended standards for statewide adoption, recommended standards to monitor, timelines, work plans, identified issues/risks, and budget information

8.2.4.3 WISHIN Board

The WISHIN Board provides oversight of the Technical Advisory Committee and serves as a point of escalation for standards decisions that cannot be addressed at the committee level. The Technical Committee provides monthly updates to the WISHIN Board regarding the adoption of standards.

Over the past several years, it has been a daunting task for health IT vendors, health care organizations, and state agencies to track and stay informed on HIT and HIE standards. Doing so is becoming more streamlined and simpler for the average person or organization with the convergence of the various standards-setting committees and federally integrated organizations.

8.2.5 Alignment with NwHIN

WISHIN will ensure that Wisconsin's SHIN will fully leverage the current and developing NwHIN standards. Wisconsin will also use NwHIN Exchange capabilities so that the SHIN can connect and interoperate with federal agencies connected to the NwHIN and with other state-level exchange networks. Wisconsin wants to be capable of exchanging health information with all state-level exchange networks and entities connected to the NwHIN. However, the WIRED for Health Project expects the need for exchange outside of Wisconsin will be primarily with its neighboring states on its borders through state-level exchange networks and with federal agencies through the NwHIN.

Marshfield Clinic was a participant in the SSA's Medical Evidence Gathering and Analysis through Health Information Technology (MEGAHIT) project and has a direct connection to NwHIN as a result. Additional information on this project can be found in Section 8.2.7.4.

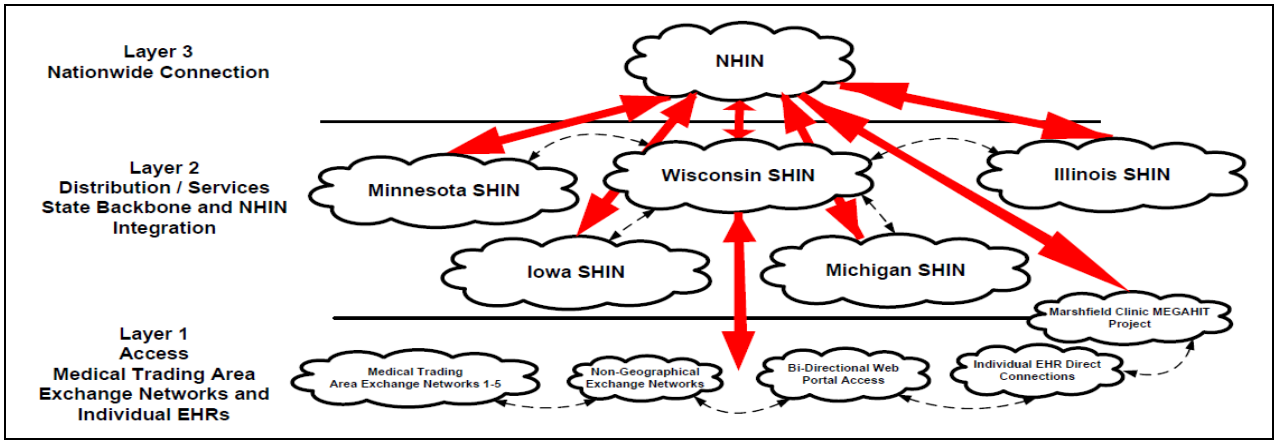

Figure 8.2.10 Alignment with NwHIN and other state-level exchange networks

8.2.6 State-Level Shared Services and Directories

An important shared service for a HIE is the concept of a Patient Information Locator Service. At this time, the SHIN is pre-disposed to not managing a statewide registration and numbering system to provide a unique number to patients such as those developed for Social Security or a Department of Motor Vehicles. In order to share patient data across a SHIN, with other SHINs, with a nationwide network, and connected organizations, it is necessary to have mechanisms to match patient identities in the absence of a single national identifier.

The ability to match a target patient who has information stored on other network nodes (e.g., other provider EHRs, managed care organization's care plan systems) is a core requirement of an HIE that is enormously complex. Given that the SHIN is pre-disposed to following standards, patient matching is likely to be accomplished through probabilistic matching technology as described in the NwHIN Patient Discovery Web Service Interface Specification. The context for using this interface is described using IHE IT Infrastructure Technical Framework – Cross-Community Patient Discovery (XCPD).

This approach is different than a Master Patient Index (eMPI) that attempts to maintain a non-duplicated directory of all patients on all nodes. However, patient discovery is a somewhat unproven approach at a statewide level and an evolving specification. Therefore, the possibility is left open that the SHIN will need to store some patient information in an eMPI structure.

In considering all state-level shared services and directories that may be required, the following list describes the directories and associated services that Wisconsin will consider to control and direct traffic via the SHIN:

- User Directory/Registry: The authoritative source of identity information used for authenticating or verifying the identity of all known users and automated systems
- Authorization/Policy Store: Contains the required security attributes of a known user or automated system and will allow them to access a requested resource based on role-and rule-based access controls
- Patient Index: While the SHIN intends to use a Patient Information Locator Service, that service could store some patient encounter information within the SHIN in order to optimize the performance and accuracy of the service
- Provider Directory: Unified source of all licensed health care professionals in Wisconsin
- Patient Consent Directory: Stores a patient's consent preference (opt-in or opt-out), and enforces the patient's consent preferences by allowing or denying access to health information
- Health Care Organization and Site Index: Identifies all the health care organizations providing patient encounter information to the SHIN and essential attributes (included in Near-Term Implementation Plan)
- Certificate Authority (CA): Associates a public key with proof of identity by producing a digitally signed certificate. The CA will provide to users a digital certificate that links the public key with some assertion about the user, such as identity. The CA will also offer other services such as time-stamping, key management services, and certificate revocation services (included in Near-Term Implementation Plan)

The directories are data files that track key information assets that exist in multiple computer systems that will connect to the SHIN. Directories are important for a number of reasons:

- Directory tables are built to speed up access time. They are read many more times than written.
- Tracking the location of information assets in a directory speed up information query times, eliminating the need to query every single node anytime a query is performed.
- Directories can provide common reference to information assets that have no standard naming in the source systems (e.g., within the individual providers' EHR).

Most directory services will be accessible through a web interface as well as a programmatic interface. The web interface will appropriately limit access to data elements based upon the role of the user. For example, the SHIN provider directory will include basic required public information and should be made available to the general public via the web. Additionally, a provider directory service will be a key component of the technical infrastructure, whereby electronic transactions may query available providers and validate the provider identifiers in electronic transactions.

While some directories will be designed, developed, and maintained by the SHIN operating entities, WISHIN will leverage organizations that have expertise in managing various information assets, such as the Wisconsin Medical Society and Medicaid. As an example, the Wisconsin Medical Society manages a provider directory of physicians licensed to practice in the state. Rather than recreate the intellectual property, processes, and policies to manage such a directory, WISHIN will pursue, to the extent applicable, leveraging these existing statewide assets as a system asset and/or a data asset.

Regardless of the private or public entity managing the directories, the HIE will need to design capabilities to maintain the directories through a variety of mechanisms that meet the needs of the SHIN and its stakeholders. These capabilities are likely to include web-based interfaces for online directory updates by appropriate parties and electronic transactions that will automatically update directories as changes are made in source systems. For example, when a provider credentials a new physician into their organization, it could automatically trigger a transaction to update the provider directory.

The vast majority of patients residing in Wisconsin are managed by a handful of integrated health care systems that have already implemented EHRs. In addition to the patient information that the State of Wisconsin stores on 1.5 million Medicaid enrollees, other notable directories that maintain large amounts of patient data include:

- In the northern half of Wisconsin, Marshfield Clinic and Ministry Healthcare share an EHR internally developed by Marshfield Clinic that contains 1.9 million unique patient records in Wisconsin (not deceased)
- Aurora Healthcare, with hospitals and clinics widely present across the eastern portion of the state, has implemented an EHR from Cerner. That system includes 3.5 million patient records. Additionally, Aurora Advanced Healthcare has implemented an Epic EHR
- Hospital Sisters Health System (HSHS), with locations in northeast and northwest Wisconsin, has implemented the Meditech EHR and manages 1.6 million electronic patient records
- Wheaton Health Care, located in Milwaukee and southeast Wisconsin, has implemented an EHR from McKesson that store records for more than two million patients
- Froedtert and Community Health, with hospitals in Milwaukee, Waukesha and Washington Counties and an affiliation with the Medical College of Wisconsin, implemented an Epic EHR that includes more than 1.7 million distinct patient records

- Columbia St. Mary's, located in Milwaukee and Ozaukee Counties, has implemented the Cerner EHR that maintains 4 million active person entries
- ThedaCare and Bellin Health share an Epic EHR with more than 1.5 million patients that have been seen by these northeast Wisconsin providers
- UW Health, which includes UW Hospital and Clinics, UW Medical Foundation and Access Community Health Center, contains 2.2 million unique patient records
- Mercy Health System has approximately 750,000 unique patient records
- Children's Hospital of Wisconsin has approximately 750,000 patient records
- Wisconsin Immunization Registry contains seven million unique patient records
- WHIE has more than 2.2 million patients identified and more than seven million encounters with admission interfaces with 51 hospitals in Wisconsin

The total number of patients represented in the large health care systems' databases exceeds the current population of Wisconsin, which is approximately 5.7 million people. There is a significant overlap of patients in these EHR databases; thus further demonstrating the need for a statewide exchange network. WISHIN should study the patient overlap in each of the large health care system databases in preparation for planning for the patient directory services.

8.2.7 Integration of Existing HIE Networks, Assets, and Initiatives

8.2.7.1 Existing HIE Networks

The proposed approach to the SHIN architecture focuses on defining a path to successful adoption and use of such an exchange. The widespread adoption and use of the Wisconsin SHIN is dependent upon support and use by key Wisconsin stakeholders. Some stakeholders already have small-to-medium scale HIEs functioning within their respective organizations or medical trading area. The proposed architecture for Wisconsin's SHIN recognizes this and accounts for existing networks as a way to accelerate the adoption and use of services being provisioned by the SHIN backbone. An example of an existing network is the Kiara Clinical Integration Network (KCIN). As a functioning and operational network, it would be advantageous to all stakeholders to integrate it into the larger network-of-networks architectural approach of the SHIN backbone. Thus, the benefit of a multi-layered architecture can be realized through its inherent scalability and the ability to keep the flow of information as local (or within their network) as possible. With this architectural approach, existing technology investments can be preserved and future local investments can be encouraged to meet information exchange needs that may not be necessary or needed in the overall statewide scope of the Wisconsin SHIN.

The following table shows the existing HIE networks in Wisconsin, along with the number of providers currently engaged in those networks. Almost 38 percent (5,371) of Wisconsin providers participate in more than one existing HIE network.

HIE Activities	Geography Coverage	Number of Physicians	Percent of Coverage
HIE-Bridge (formerly CHIC)	Northwest WI	67	0.5%
Epic Care Everywhere	Multiple	6,129	43%
KCIN	Eastern WI	320	2%
	Western WI		
Ministry/Marshfield Exchange	Central WI	1321	9%
HSHS	Multiple	2,725	19%
WHIE	Southeast WI	204	1%
WISHIN Direct	Multiple	532	4%
Total Providers in Wisconsin[1]		**14,232[1]**	

Table 8.2.11 Alignment with NwHIN and other state-level exchange networks

[1]The numbers above include (1) hospital-based physicians and (2) non-active physicians. WISHIN will continue to refine the numbers in 2012 and will appropriately exclude those physicians who should be excluded. WISHIN will remove hospital-based providers who only practice in a hospital (some may practice in a hospital and a clinic) and will also remove retired or non-practicing physicians from this list once that information can be verified.

8.2.7.2 Existing Assets and Systems

As part of the SLHIE Planning and Design Project, hospitals and independent physicians were surveyed in 2010 about their HIT assets to gain an understanding of the technical architecture and infrastructure of Wisconsin's health systems, hospitals, clinics, and physician practices. The HIT Asset Survey asked hospital systems, providers, state agencies, and non-governmental agencies to provide information about their HIT assets. This survey gathered information on existing technical and functional assets within Wisconsin.

8.2.7.2.1 Alignment with Medicaid

To gain a full understanding of the systems that exist within state government, various departments and agencies were asked to provide information about technical systems that could be leveraged or integrated for statewide HIE. The WIRED for Health Project also coordinated with the State Medicaid HIT Planning project and with Public Health to further supplement the previous survey of Medicaid and Public Health-related technical systems.

The Wisconsin Medicaid program is one of several state health care programs included under the ForwardHealth "umbrella." In most cases, the systems and infrastructure that support Medicaid also support several other ForwardHealth programs, including:

- BadgerCare Plus (Core, Basic, Standard, Benchmark)
- Family Care
- SeniorCare
- Wisconsin Chronic Disease Program
- Wisconsin Immunization Registry
- Wisconsin Well Woman Program
- SSI Supplement payments
- FoodShare
- Various waiver and limited benefit plans (Family Planning Services, QMB, etc.)
- Other state-administered programs

The ForwardHealth systems and infrastructure consist of an operational and mature set of technology that could be integrated to further the realization of a SHIN. Additionally, the programs supported by this infrastructure would be consumers of statewide HIE services.

Below is a list of several significant ForwardHealth technology systems, including descriptions of each and the components that could serve as a potential provider or consumer of SHIN services.

8.2.7.2.1.1 Medicaid as a Provider of Statewide HIE Services

The following ForwardHealth systems (providing services specific to state-sponsored business) could potentially provide services to be consumed by the SHIN. WISHIN is currently working with the state Medicaid program to identify opportunities to integrate these assets into the SHIN.

1) **ForwardHealth interChange**: ForwardHealth interChange is Wisconsin's Medicaid Management Information System (MMIS), which supports real-time processing of Wisconsin ForwardHealth claims, prior authorizations, and eligibility verification.

   a) Pharmacy Point of Sale (POS): The POS system is a subsystem ForwardHealth interChange that supports electronic submission and processing of pharmacy claims for immediate adjudication and eligibility verification.

   b) ForwardHealth Portal: The ForwardHealth Portal is a web-based interface used by providers, managed care organizations, HIPAA trading partners, and other ForwardHealth Partners to conduct electronic business with ForwardHealth interChange.

2) **Decision Support System/Data Warehouse (DSS/DW)**: The DSS/DW is a large data warehouse and decision support application that is used primarily for analytical queries. Each week data from the ForwardHealth interChange system is extracted, transformed into analytical structures, and loaded into the DSS. In addition to data from the ForwardHealth interChange system, the DSS/DW holds data from other

systems that provide services to ForwardHealth programs, including managed care encounters.

3) **ACCESS**: The ACCESS application offers Wisconsin residents a self-service, streamlined benefits eligibility tool that provides the option to check potential eligibility, apply for benefits, and report changes in status at the convenience of the individual without the assistance of income maintenance or county workers.

4) **Client Assistance for Re-employment and Economic Support (CARES)**: CARES is Wisconsin's public assistance eligibility determination system. CARES encompasses the state's automated array of systems used in determining eligibility for federal and state public assistance programs. CARES is used to determine eligibility for a number of programs including but not limited to: Wisconsin's ForwardHealth programs, Temporary Assistance for Needy Families (Wisconsin Works/W-2), and Child Care (Wisconsin Shares).

   a) CARES Worker Web (CWW): The CWW is a web-based tool used by public assistance staff to interface to CARES.

5) **Wisconsin Immunization Registry (WIR)**: WIR is an internet database application that records and tracks Wisconsin's children and adults immunizations. WISHIN and WIR have begun discussions on how WIR can be integrated into the SHIN.

6) **Master Customer Index (MCI)**: The MCI is a web-based application that generates and stores unique identifiers for Wisconsin residents. The MCI allows multiple systems (including CARES/CWW, Functional Screen Information Access (FSIA), Automated System Support for Employment and Training (ASSET), Program Participation System (PPS), Long Term Care Encounter, ForwardHealth interChange, and eWiSACWIS) to link patient data using a single identifier. The MCI stores the primary demographics for an individual and validates that information with the SSA. There are more than 3.85 million individual records stored in the MCI.

8.2.7.2.1.2 Medicaid as a Consumer of Statewide HIE Services

The services to be provided by the SHIN could be leveraged by the Medicaid program to supplement and complement those services the MMIS provisions on its own. These could potentially include:

- Quality Measurement
- Quality Assurance
- Provider Directory
- Patient Directory

8.2.7.2.2 Alignment with Public Health

Public Health practice is highly dependent upon health information and data systems to perform its epidemiology, surveillance, and health promotion functions as well as to support the delivery of clinical services. Universal EHR adoption and the creation of a SHIN can revolutionize the practice of public health by streamlining data acquisition, epidemiologic investigation, surveillance, reporting, and improving health data

timeliness, completeness, and quality. Using the SHIN as the primary source for public health information systems may also greatly decrease the reporting burdens of data submitters. Further, the use of the SHIN can strengthen the communication and coordination between public health professionals and other partners in the public and private sectors.

8.2.7.2.2.1 Public Health as Providers of Statewide HIE Services

The following Public Health systems could potentially provide services to be consumed by the SHIN. WISHIN and Public Health are evaluating each system in detail to determine its potential use in the SHIN backbone.

1) **Wisconsin Immunization Registry (WIR)**: The WIR records and tracks immunizations given to Wisconsin children and adults. The WIR collects immunizations, allergies, patient demographics.

2) **Electronic Laboratory Reporting**: The current capability to provide results for all Wisconsin patients tested for notifiable conditions by either public or private clinical laboratories can potentially be extended and leveraged to encompass all types of lab reporting. WISHIN is evaluating the current ELR functionality, including results transmission/delivery, results lists (historical), mandated public health disease/condition reporting, and voluntary public health reporting for use with the SHIN.

3) **Vital Records System**: The vital records system captures birth and death information.

4) **Wisconsin Cancer Registry System (WCRS)**: Information on newly diagnosed (incidence) cancer cases sent to the WCRS could be leveraged for the SHIN as a source of patient health information.

5) **Wisconsin Electronic Disease Surveillance System (WEDSS)**: This web-based system designed to facilitate reporting, investigation, and surveillance of communicable diseases in Wisconsin could also be used as a source of patient health information to provide to the SHIN.

6) **Analysis, Visualization, and Reporting (AVR)**: The AVR system allows public health practitioners and partners to securely contribute, retrieve, and analyze data by providing the ability to integrate, perform statistical analysis on, display, report, and map data. As a potential asset to the SHIN, a robust AVR system that also contains individual and small-area geo-coded public health information offers the potential for helping healthcare quality improvement processes account for these important co-factors for better health outcomes. This system can also be used to create an information environment to support the combination of community-based and health-care-team support envisioned by the chronic disease model and similar care improvement approaches.

7) **Public health alerting**: Wisconsin's Health Alert Network, Partner Communication & Alerting system (utilizing Send Word Now), and Wisconsin Tracking Resources, Alerts, and Communications (WITRAC) systems enable public health authorities to

communicate urgently with clinicians and administrators of clinical entities using website postings, email, telephone and fax. Wisconsin DPH anticipates electronic public health communication will become more bilateral and migrate to EMR messaging since this will be the information environment within which clinicians will spend their time. This will enable person-oriented and real-time communication, such that public health alerting could interact with Clinical Decision Support or patient registries to help clinicians protect individuals or groups of patients during a disease outbreak or environmental emergency.

8.2.7.2.2.2 Public Health as a Consumer of Statewide HIE Services

The services to be provided by the SHIN could be leveraged by Public Health to supplement and complement the public health services currently provided. These could potentially include:

- **Quality Assurance**: Many public health programs promote public health through more consistent application of clinical preventive services, maternal-child health services, and chronic disease management services. For example, the Diabetes Quality Improvement Project focuses on reducing disparities in diabetes outcomes through registry-based care quality improvement at the Federally Qualified Health Centers serving many of the state's low income residents. Greater exchange of information relevant to quality outcomes will serve both public health programs and clinicians.
- **Provider Directory**: Public health sometimes needs to reach clinicians within their care environment to alert them of health threats that might affect some or all of their patients. For example, the recent pandemic of H1N1 influenza necessitated frequent updates of clinicians who rarely use other communication modalities.
- **Patient Information Sharing**: Public health nursing, communicable disease control and other public health services require a high level of coordination with other providers caring for a given individual. Public health sometimes serves as a clinical provider similar to other providers. For example, a sexually-transmitted diseases clinic has the same need for clinical background information on patients as other providers.
- **Communication Channel**: Leveraging presence of SHIN to accomplish a single thread of connectivity and communication from multiple sources, such as that currently in place for syndromic surveillance data submissions.

8.2.7.3 Existing Quality Measurement, Reporting, and Improvement Initiatives and Services

Wisconsin has been a national leader in establishing and promoting voluntary quality and patient safety public reporting and improvement initiatives. Several Wisconsin healthcare quality and health information organizations discussed in the following sections represent initiatives and services that can be leveraged by the SHIN. WISHIN has initiated the evaluation of these initiatives and services in preparation for the development of the patient-centered, bi-directional exchange to determine their

potential use in the SHIN backbone. These organizations will also potentially connect to the SHIN and be consumers of SHIN services.

8.2.7.3.1 Wisconsin Collaborative for Healthcare Quality

The Wisconsin Collaborative for Healthcare Quality (WCHQ) is a voluntary consortium of organizations learning and working together to improve the quality and cost-effectiveness of health care for the people of Wisconsin through the public reporting of comparative performance information. WCHQ uses two separate yet complementary processes to receive both administrative and clinical data directly from its participating member hospital and medical group organizations. One process relies on the organization to transmit its calculated performance based on internally constructed administrative and clinical data extracts to WCHQ. The second process involves the transmission of patient-level administrative and clinical data files through a secure repository-based submission (RBS) process to WCHQ. Both processes emphasize the collection of data on an "all-payer" basis, allowing for the construction of quality process and outcome measures for an entire population of patients regardless of payment source. The RBS tool has been a Centers for Medicare and Medicaid Services (CMS)-approved registry for the Physician Quality Reporting System (PQRS) since 2008. For 2011 reporting WCHQ will transition from a registry to a data submission vendor, eligible for submitting measures on behalf of providers for PQRS, Meaningful Use and e-prescribing. WCHQ submits PQRS measures on behalf of approximately 2000 WCHQ and Minnesota Community Measurement providers annually. Ten WCHQ member organizations currently report the WCHQ ambulatory measures through the RBS system. WCHQ's member organizations represent approximately 50 percent of the physicians and 60 percent of the primary-care physicians in Wisconsin.

8.2.7.3.2 Wisconsin Hospital Association

The Wisconsin Hospital Association is a non-profit membership group that advocates for the ability of its members to lead in the provision of high-quality, affordable, and accessible health care services, resulting in healthier Wisconsin communities.

WHA and its subsidiary, WHA Information Center, are leading two primary initiatives of significance to HIT efforts: (1) Wisconsin PricePoint and (2) Wisconsin CheckPoint. PricePoint, created by the WHA Information Center, is an online application that allows users to access charge information about hospitalizations and selected outpatient services in Wisconsin hospitals or Medicare-certified ambulatory surgery centers. The site also aggregates hospital "discount" information for private insurance, Medicare and Medicaid. Facilities report data quarterly to the WHA Information Center, and it in turn publishes pricing information about the four most recently reported quarters on PricePoint. The Wisconsin Hospital Association created and operates the CheckPoint program, a public web-based reporting program of hospital quality, safety and service measures. CheckPoint provides information on interventions that research indicates will lead to the best outcome for error prevention measures. The hospitals reporting to CheckPoint provide care to more than 99 percent of the state's patient population.

In early 2012, The Wisconsin Hospital Association started work on a national project aimed at preventing avoidable hospital-acquired conditions (HAC) and reducing

unnecessary hospital readmissions. "Partnership for Patients" is a national initiative supported by the Centers for Medicare and Medicaid Services (CMS). CMS awarded $218 million to organizations that will develop a "hospital engagement network." The American Hospital Association, who has been designated as a CMS primary contractor, has sub-contracted the quality and safety improvement work in Wisconsin hospitals to WHA.

The ambitious goals of the Partnership for Patients initiative are to reduce inpatient harm by 40 percent and readmissions by 20 percent over a three-year period on ten key areas for improvement:

- Adverse drug events ("ADEs")
- Catheter-associated urinary tract infections
- Central line-associated blood stream infections
- Injuries from falls and immobility
- Obstetrical adverse events
- Pressure ulcers
- Surgical site infections
- Venous thromboembolism (blood clots)
- Ventilator-associated pneumonia
- Preventable readmissions

WHA has 107 Wisconsin hospitals participating in the improvement initiative. Through the project, hospitals will have access to evidence-based practices, staff training and opportunities for sharing practices, as well as continued direct engagement with WHA staff.

Partnership for Patients seeks to prevent 1.8 million injuries to patients in the hospital, saving more than 60,000 lives over three years. It also seeks to make care less costly. Funding is being channeled through the CMS Innovation Center, which was created by the Affordable Care Act.

8.2.7.3.3 Wisconsin Health Information Organization

The Wisconsin Health Information Organization (WHIO) maintains a central repository for health care claims data that provides for tracking, analysis, and measurement of risk-adjusted episodes of care. The information collected is used to determine value of care based on quality-process measures and cost over time. The data is used by member organizations to generate comparative performance reports for providers, evaluate population health, and perform additional analysis on the delivery of health care. WHIO's longer term goal is to influence the quality and efficiency of health care delivery through transparency of practice group and physician performance results. The sixth version of the data mart (DMV6), released in October 2011, contains data for more than 3.86 million individuals or 65% of the Wisconsin population for health care services provided between the April 1, 2009 to March 31, 2011. WHIO aggregates eligibility and claims data from 14 commercial health insurers and health plans and the Wisconsin Medicaid Program. The data includes 23.1 million episodes of care and 248 million medical and pharmacy claims. The most recent version of the data mart, DMV7,

was released the week of April 16, 2012 and has one additional data contributor—a Wisconsin employer coalition.

8.2.7.3.4 Wisconsin Medical Society

The Wisconsin Medical Society (Society) is the state's largest association of medical doctors. With nearly 12,500 members dedicated to the best interests of their patients, the Society has been a trusted source for health policy leadership at both a state and national level since 1841. The Society's mission is to improve the health of the people of Wisconsin by supporting and strengthening physicians' ability to practice high-quality patient care in a changing environment.

In addition to representing the unified voice of physicians through its advocacy efforts, the Society offers an expanding portfolio of products, services and practice management resources to enhance the day-to-day operation of a physician's practice in today's changing health care landscape. These include education and training to help physicians and their staffs address ICD-10 implementation, compliance issues and other initiatives and challenges. The Society also has developed analytics tools and resources to help physicians analyze and understand data trends and identify practice gaps to facilitate the development of quality and cost-improvement initiatives.

8.2.7.3.5 Wisconsin Community Health Centers

The Wisconsin Community Health Center Network (WCHCN), a division of the Wisconsin Primary Health Care Association (WPHCA), is using funding awarded through the Health Resources and Services Administration (HRSA) Health Center Controlled Network (HCCN) grant to design and implement a data warehouse and reporting system for community health centers (CHCs). The first implementation phase focuses on five CHCs who have implemented certified EHRs or have selected and are currently implementing certified EHRs. Subsequent implementation phases will be rolled out to the remaining CHCs.

Development of a centralized data warehouse and reporting system for robust reporting and data interoperability will provide normalized databases that will drive clinical decision support, HIE connectivity among CHCs and with the SHIN, and center-specific reporting databases. In the longer term, the data repository and reporting system will provide an infrastructure to support CHC participation in the SHIN through the following actions:

- Stronger data quality through integration of data-driven processes into Health Center workflows
- Auditing functionality for HIE transactions
- Centralized data conversion tools for CCD/ADT/HL7 interfacing

By leveraging the SHIN, this project will expose and make available a rich data set across a large population of patients. Through this project, WPHCA and Wisconsin's CHCs will have the ability to drive clinical, fiscal, and operational improvements at the provider, Health Center and Association levels. Key outcomes will be improving CHC providers' ability to measure and report on the quality of care and health outcomes;

reduce health care costs associated with inefficiency, medical errors, and inappropriate care; and increase accessibility and transparency of data to support improved patient care.

8.2.7.4 Medical Evidence Gathering and Analysis through Health Information Technology (MEGAHIT)

The SSA has to make complex disability determinations for more than 3,000,000 individuals nationwide. Annually, SSA makes more than 15 million requests for medical records, from more than 900,000 providers, to support eligibility determinations. During federal fiscal year 2009 (October 2008 through September 2009), the Wisconsin Disability Determination Bureau processed 67,627 federal disability claims as well as 5,468 state medical assistance disability applications. In the 12 months from June 2009 through May 2010, the Wisconsin Disability Determination Bureau received 205,702 responses to requests for medical and school evidence from 8,887 providers, totaling 7,081,958 pages.

Currently, SSA gives providers a number of options to respond to its requests for medical evidence; however, all require manual intervention before SSA can enter the evidence into SSA's electronic disability case folder. Locally, DHS's Disability Determination Bureau (DDB) determines, in accordance with federal SSA regulations, if Wisconsin residents applying for disability benefits meet the criteria for any of the following: Social Security Disability, Supplemental Security Income (SSI) Medicaid (Medical Assistance), Katie Beckett Program, and the Medicaid Purchase Plan.

In an effort to maximize efficiencies in processing disability claims, SSA initiated development of the MEGAHIT system that leverages HIT and the NwHIN Exchange to gather medical evidence electronically from participating providers' EHR systems. SSA implemented an automated, computer-to-computer request for, and receipt of, medical records. The MEGAHIT system formats the information into a human readable document and adds it to SSA's new electronic disability case folder. The MEGAHIT system also applies business rules to the data and generates an alert to decision makers regarding findings that could possibly meet certain SSA medical eligibility criteria.

In August of 2011, Marshfield Clinic went live on the Nationwide Health Information Network (NwHIN) securely exchanging patient information with the Social Security Administration. The documents being exchanged are in Continuity of Care Document (CCD) format and allow for the SSA's MEGAHIT system to apply business rules to the data received.

According to a recently published SSA case study report,[12] MEGAHIT enables medical evidence to reach the SSA within minutes of the request instead of weeks or months via traditional methods. Faster disability determination can lead to potential

[12] Feldman, Sue F., RN and Horan, Thomas A. PhD *Using the Nationwide Health Information Network to Deliver Value to Disability Claimants: A Case Study of Social Security Administration and MedVirginia Use of MEGAHIT for Disability Determination*, January 11, 2010; Available at: http://www.medvirginia.com/includes/20100111_MedVA+Case+Study.pdf

uncompensated care recovery because benefit determination results in health benefits which generate revenue for the provider.

After WISHIN's core technical services are established, WISHIN will leverage the lessons-learned from the Marshfield Clinic MEGAHIT project to develop its own connection to the NwHIN so that it can offer this service to other health care providers in the state. This HIE capability could have a significant benefit, especially for Wisconsin's large IDNs.

8.2.8 Broadband Mapping and Access Initiative

There are areas of Wisconsin that are very well served with broadband access, and there are areas that are under-served or not served at all. Even those areas with coverage are not ensured accessibility, given cost considerations. Some areas have the option of selecting from fiber optic, copper, cable, satellite or wireless connectivity while some areas have none of these. Several Wisconsin ARRA grant awards are helping address some of the existing deficiencies.

The Wisconsin Department of Administration (DOA) provided the following maps showing broadband coverage throughout the state, as of June 30, 2009. The first map, Figure 8.2.8.1, illustrates the density of broadband providers of all technology types. The second map, Figure 8.2.8.2, illustrates areas within the state that currently lack broadband coverage of any kind.

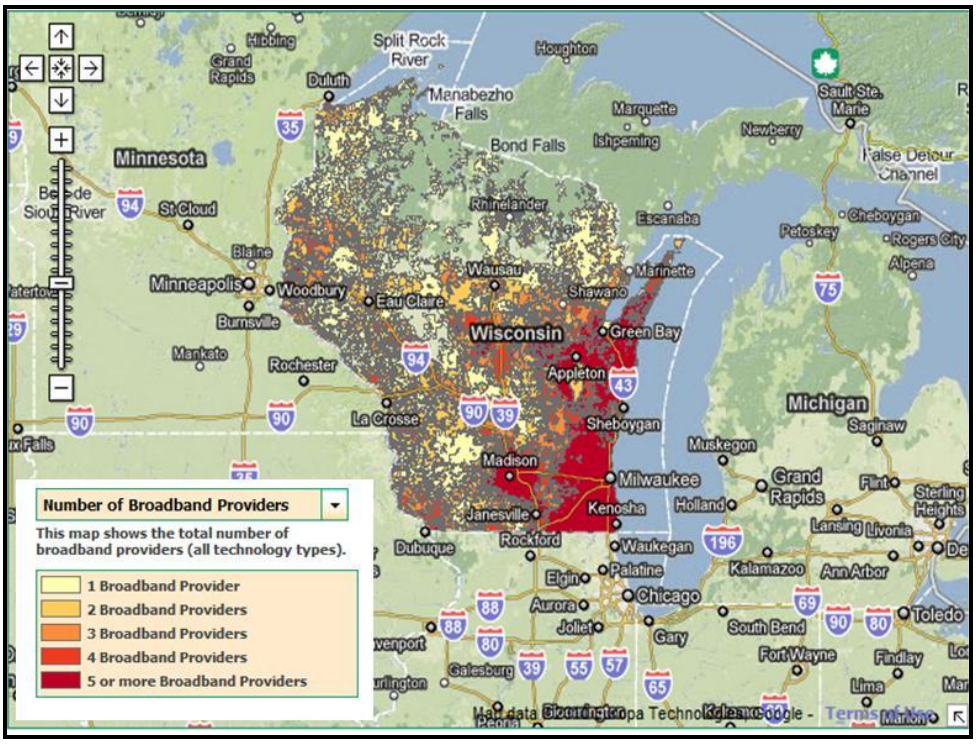

Figure 8.2.8.1: Broadband coverage map by number of providers

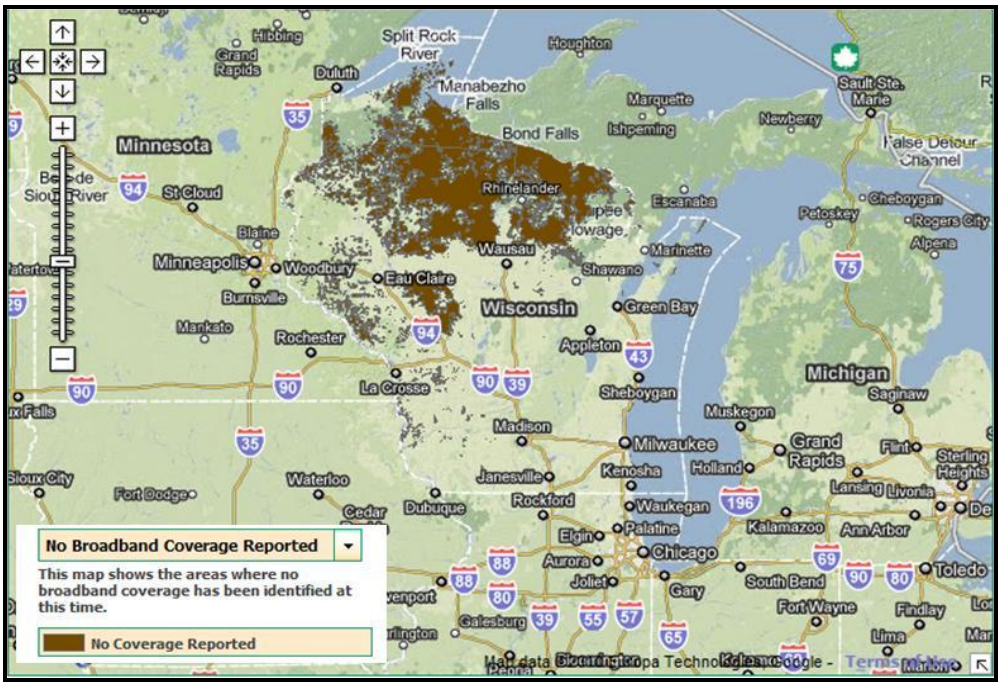

Figure 8.2.8.2: Map of areas without broadband coverage

The HIE evolving network requirement will be defined by the implementation plan adopted from the use case definition and prioritization. WISHIN will evaluate all network options that are available for their use based upon their capability at the time of need. There is a project underway at the Wisconsin Public Service Commission (PSC) that will map all existing broadband coverage in the state, as well as track broadband that is, or will be, installed. WISHIN will work with the PSC to obtain broadband mapping information for the state and superimpose the information gathered for existing HIE member networks, including the current use of the network. When the initial and subsequent implementation scopes are defined, WISHIN will create a map of broadband requirements and can decide whether or not to procure the additional services required through a competitive process or through negotiation with existing providers in the area. The WIRED for Health Board recommended that WISHIN track the expansion of broadband capabilities throughout the state, so that implementation strategies and schedules take advantage of all new options for participants that want to connect to the Wisconsin SHIN.

8.3 Technology Deployment

The deployment plan for the SHIN in Wisconsin will be aligned with the services, scenarios, and use cases identified in the State HIE CAP FOA and with the Meaningful Use requirements and timeline.

A potential technology deployment roadmap is presented in Section 11 and in Appendix 18. The roadmap is intended to provide an overall representation of the implementation and rollout of HIE services.

To ensure resources are used as efficiently as possible, our deployment planning is structured to allow continued operation of deployed services while allowing for the on-ramp of new connection points, and the deployment of new services. Evolving requirements in a dynamic environment require a flexible deployment that allows WISHIN to add value to its customers, build capacity, establish sustainability, and be responsive to customer needs.

The deployment plan leverages integration of existing and evolving regional HIE networks in the state, following the NwHIN standards structure, enabling timely connectivity across a large geographical coverage for Wisconsin. Consideration has also been given to the role of SHIN technical services as a provider of HIE services to those regions where there is no existing regional capability and/or insufficient resources to undertake independent regional implementation.

Capabilities provided by the existing HIE networks in the state include CCD exchange, Patient Information Locator services, standards translation services, data feeds to public health reporting for disease surveillance, and clinical summary view. However, not all of the existing networks provide all of the aforementioned capabilities. WISHIN's deployment plan will allow existing HIE networks to participate in the SHIN for the services needed.

The deployment plan also includes the integration of WISHIN Direct into the total service offering of the HIE. This includes integration of operational processes into the new, ongoing processes needed to support the SHIN.

In addition to leveraging existing HIE networks and WISHIN Direct, the plans for SHIN deployment across Wisconsin leverage other existing assets to the degree with which the winning vendor has proposed to accommodate them. WISHIN's RFP for patient-centered, bi-directional exchange services provides vendors with options for incorporating existing assets into their proposed solutions. This provides WISHIN with the opportunity to evaluate the vendor proposals against the existing asset in a way that will compare apples-to-apples to the fullest extent possible. This will allow WISHIN to select an HIE vendor that offers a competitive solution and will ensure that the integration of existing assets is cost-effective for Wisconsin.

The current deployment plan emphasizes the four scenarios described in Section 8:

1) Coordination of Care Scenario

2) EKG Imaging Scenario

3) NwHIN Gateway Scenario

4) Public Health Reporting Scenario

Depending on the capabilities of the selected HIE vendor, these scenarios may be modified or additional scenarios may be added. As part of the RFP process, WISHIN has requested that vendors propose implementation/deployment plans that leverage the above four scenarios, and that also allow accelerated adoption of HIE throughout the

state. In cases where the selected vendor may offer services that would be valuable to Wisconsin stakeholders, these services may be added to the deployment.

In general, WISHIN's deployment plan includes the core services/scenarios that the Wisconsin stakeholders have identified as being of the most value to them. Those services/scenarios will set the priority for the deployment. Additional services/scenarios will be evaluated and added as appropriate.

9 Implementation and Operations

(Implementation and Operations was Section 8 in the 2010 SOP)

The WIRED for Health initiative includes an approach to facilitate electronic exchange of health care information across numerous organizations and systems throughout the state. Wisconsin's SHIN will provide the capability to electronically move information between disparate healthcare information systems while maintaining the meaning of the information being exchanged. The goal is to facilitate and operationally maintain access to and retrieval of clinical data in order to provide timely, efficient, and effective patient-centered care.

In addition to connecting operational medical trading area and non-geographic HIE networks through a "network of networks" as described in the reference architecture, Wisconsin's SHIN may also provide some electronic features and functionality to organizations that have not been able to automate their systems through EHR implementations. To this end, WISHIN continues to work closely with WHITEC to ensure such organizations receive technical assistance and are included in the overall health care information exchange landscape for Wisconsin.

WISHIN has standardized operating procedures and participation agreements and has secured staff and procured services to fulfill responsibilities of the core staff roles outlined in this section. Additionally, WISHIN continues to implement procurement, contracting, and ongoing project management processes and methodologies to help sustain the initial and ongoing operations of its organization and the SHIN.

9.1 Standard Operating Procedures and Participation Process

It is recognized that HIE initiatives are founded in a collaborative, competitive, and transparent structure. WISHIN continues to establish and maintain a structure for participation in the SHIN that fully leverages best practices, policies, and procedures from existing regional HIE initiatives. It is expected that regional efforts connecting to the SHIN will also leverage the agreed upon policies and procedures to ensure consistency and congruency, where necessary.

9.1.1 Process

Participation in the SHIN brings with it the responsibility to ensure data accuracy and integrity. The WIRED for Health Board, through its committees, agreed that data accuracy is to be the responsibility of the source transmitting the data to or through the SHIN. WISHIN will establish standards that provide resolution for repetitive issues from data providers. Along with its Policy Advisory Committee, WISHIN will evaluate the language in the Data Use and Reciprocal Support Agreement (DURSA) to establish standards of operation for participating organizations. DURSA language may be incorporated into WISHIN's participation agreements as appropriate. Language such as that included in the DURSA will enable WISHIN to engage with a participating organization to resolve repeated occurrences of issues, such as data quality, misidentification of patient records, network connectivity, network communication

interference or other actions/events that negatively impact the operations of the SHIN for other participants.

Data submitting/requesting systems will be required to support the established national standards and certifications, to the extent that such standards exist. Some participants in the SHIN will use non-standard interface formats and some systems may not have established standards. In these instances, the SHIN may need to translate non-standard interface formats to standards that will be recognized by other participants in the SHIN. In all cases, WISHIN will establish a minimum participation level for all participating organizations.

9.1.2 Audit

The SHIN will establish policies and procedures for scheduling and publishing audits. WISHIN will establish an oversight function to manage auditing procedures.

In compliance with state and federal laws, the SHIN should provide and support audit reports including, but not limited to:

Access events: Access to PHI is never provided to those individuals who choose not to participate in the exchange, and for those who have elected to participate, access occurs only for those with whom such access complies with Wisconsin and federal law.

Release of information events: It will be the responsibility of the regional health information network (RHIN) or SHIN operator to respond to queries from patients, or their authorized agent, for a release of information request.

Breach notification events: It will be the responsibility of the RHIN or SHIN operator to perform breach notifications since movement of data may impact multiple points on the SHIN. Communications between these various entities will be established to support these efforts. Operationally, this establishes a standard for maintaining audit trails of SHIN use across participants and elements of the SHIN.

WISHIN will establish an ongoing risk assessment process that will be applied to the technical operator of the SHIN and all participants connecting and providing data to the SHIN.

9.1.3 IT Risk and Compliance Management

The SHIN will require the establishment of processes and procedures to manage and govern the various IT risk and compliance activities. WISHIN will establish an oversight committee and create a compliance officer role vested with the responsibility to collaborate with applicable staff at regional and participating organizations to address risk and compliance issues. The following table includes functions and typical activities related to IT risk and compliance management.

Function	Typical Activities
Risk and Compliance	▪ Determine reporting requirements on various risk and compliance activities

Function	Typical Activities
Management	▪ Investigate and resolve compliance violations and complaints ▪ Develop and implement an Incident Response Plan for coordinating and responding efficiently to security and privacy threats and incidents, which also includes a breach notification process ▪ Understand the status of issues and corrective action plans relating to audits and other assurance related activities ▪ Lead business continuity management policy, planning, testing, and regulatory preparedness ▪ Lead disaster recovery planning, testing, and regulatory preparedness
Policy and Standards Administration	▪ Establish a standard and process for identifying, updating and communicating IT policies and standards affected by laws, regulations, and other legislative actions ▪ Establish a formal process and protocol for monitoring legal requirements, assessing applicability, and identifying affected policies and standards ▪ Define data classification standards
Operations Planning and Execution	▪ Understand threats and vulnerabilities, course of action, and status of corrective action planning ▪ Review proposed changes to technology architecture standards to help identify risk implications ▪ Respond to queries from patients, or their authorized agent, for release of information request ▪ Oversee implementation of administrative, technical, and physical mechanisms to ensure that access to PHI complies with legal and regulatory requirements ▪ Plan tactical solutions to resolve gaps identified during audits or from lessons learned during testing
Audit and Assurance	▪ Schedule and coordinating audits on systems and processes involved in the HIE, in accordance to legal and regulatory requirements ▪ Provide input into the scope of audits and other assurance reviews to ensure adequate coverage in accordance with legal and regulatory requirements ▪ Conduct Third Party assurance reviews to ensure compliance with the SHIN policies, procedures and contract provisions and to identify potential threats and vulnerabilities

Table 9.1.1 IT risk and compliance management functions and activities

9.2 Staffing Plan

Given the limited funding currently available, WISHIN operates as a lean organization. Its primary staffing focus is on its core state-level HIE governance and programmatic responsibilities. WISHIN decided to not directly fulfill the technical operator role for the SHIN; therefore the technical operator staffs the additional technical operations functions. Roles listed in the following sections include either core staff functions or additional technical operations functions, and are labeled accordingly.

HIE work activities, related to integration and data flow, have (1) an initial development and implementation phase, and (2) subsequent ongoing operations. It is assumed

that—to a large extent—the peak work efforts related to new participant integration (e.g., system interface work) will require resources beyond the core SHIN positions.

Given the SHIN reference architecture concept of a "network of networks," WISHIN expects that some of these functions could be performed regionally within these independent networks. Rather than WISHIN or its technical operator staffing all roles, WISHIN or its technical operator could contract with one or more of the regional network organizations to perform certain functions.

Unless otherwise specified, WISHIN or its technical operator has or will provide staffing to fulfill all responsibilities and functions described in the following sections. Additional staffing resources may be needed associated with initial start-up and anticipated "expansion" phases of the SHIN and HIE services. Pending the decision on which operational services will be provided and when, WISHIN may need to adjust the staffing plan.

9.2.1 Core Staff Roles, Responsibilities, and Functions

WISHIN has staffed the following core roles/positions:

- Chief Executive Officer (CEO)
- Chief Operating Officer (COO)
- Implementation Team Leader
- Communications and Marketing Coordinator
- Outreach/Product Specialists (2)
- Administrative Assistant
- Policy Analyst
- Technical Operations Manager
- Controller
- Director of Information Security and Privacy/Chief Information Security Officer-Chief Privacy Officer (CISO-CPO)

As WISHIN began its operations in 2011 it became apparent that some minor changes to the staffing originally outlined in the 2010 SOP needed to be made. Descriptions of all core roles/positions are included in the sections following.

9.2.1.1 Chief Executive Officer (CEO)

The Chief Executive Officer (CEO) position is filled.

This position includes the following responsibilities and functions:

- Carries out the organization's mission and vision, and leads its overall strategic direction in all areas including communications, finance, technology, and policy
- Develops and executes all business plans and fundraising activities in coordination with the board of directors, as well as builds and maintains relationships with diverse stakeholders, both within the state as well as nationally

- Includes the responsibilities for marketing to and contracting with participating state-HIE entities
- Coordinates efforts with the state's Medicaid and Public Health programs
- Ensures the integration of local, regional, state, and national-level HIE efforts
- Manages board activities and builds trust within the board
- Develops annual operating budget
- Oversees day-to-day operations of WISHIN, including directing staff assignments, hiring/terminations of staff, and completing staff performance evaluations
- Accountable for state-level HIE program implementation milestones and timelines, performance measurement and evaluation, reporting, and expenditures under the State HIE CAP with the ONC
- Supports the State Health IT Coordinator by providing timely information and reports for submission to the ONC
- Works with the State Health IT Coordinator to communicate with stakeholders and the public on the progress toward meeting WISHIN's goals and the goals of Wisconsin's SOPs for statewide HIE
- Sharing responsibilities (with the COO) for some of the duties assigned by the SOP to the Policy Analyst, the Director of Operations and Technology, the Implementation Team Leader, and the Director of Information Security and Privacy, to the extent they are not the responsibility of the Technical Operations Manager or covered by another staff member.

9.2.1.2 Chief Operating Officer (COO)

The COO position is filled.

The COO position includes the following responsibilities and functions:

- Oversees day-to-day operations of WISHIN, including directing staff assignments, hiring/terminations of staff, and completing staff performance evaluations
- Liaison with and oversight of WISHIN's contracted Technical Operator, WHIE
- Liaison with state and federal HIT/HIE policy and program staff
- Sharing responsibilities (with the CEO) for some of the duties assigned by the SOP to the Policy Analyst, the Director of Operations and Technology, the Implementation Team Leader, and the Director of Information Security and Privacy, to the extent they are not the responsibility of the Technical Operations Manager or covered by another staff member.
- Manages the project planning, issue list, risk identification and mitigation for all implementation activities across the five HIE domains of the State HIE CAP and coordinates and collaborates with the state and partner organizations on project activities
- In the event that WISHIN contracts directly for HIE services with one or more regional initiatives or commercial vendors, oversees and administers these contracts and ensures compliance, as well as ensures operations of the SHIN in this distributed model.
- Develops statements of work for contracts

- Provides regular status reports to the Executive Director and the WISHIN Board and its committees

9.2.1.3 Implementation Team Leader

The Implementation Team Leader position is filled, as of May 1, 2012.

The Implementation Team Leader position includes the following responsibilities and functions:

- Coordinating activities of WISHIN's Technical Advisory Committee
- Coordinating activities of the Clinical Advisory Committee
- Establishing a robust project management framework to oversee and coordinate WISHIN's initiatives
- Oversees contracted project management staff and ensures consistency in project planning, reporting, issue and risk identification and mitigation, and communication for all implementation projects
- Manages implementation projects
- Monitors project scope, quality, schedules, resources, costs, and dependencies; and coordinates ongoing project communications across all implementation projects
- Works with WISHIN stakeholders and customers to understand how WISHIN's products/services fit within the customer's existing workflow and operating procedures; ensures this understanding is shared across all project managers so that implementations are consistent and repeatable
- Provides regular status reports to the CEO and COO

9.2.1.4 Communication and Marketing Coordinator

The Communications and Marketing Coordinator position is filled.

The Communications and Marketing Coordinator position includes the following responsibilities and functions:

- Implements strategies to support the state-level HIE and its initiatives and functions through public, media, stakeholder, and community/consumer relations; events, marketing; Web and print publishing; brand management; grant and report writing; and presentation development
- Produces publications to support WISHIN, including press releases and newsletters
- Coordinates the activities of the WISHIN Communications, Education, and Marketing Committee
- Works with the Outreach/Product Specialists, the Implementation Team Leader, and various project managers to coordinate communications, education and marketing strategies and tactics to ensure alignment and consistent messaging and branding
- Manages content of the WISHIN website
- Manages WISHIN list servers and announcements sent through the list services

9.2.1.5 Outreach/Product Specialist

Two Outreach/Product Specialist positions are filled.

The Outreach/Product Specialist position includes the following responsibilities and functions:

- Coordinates efforts to document and reduce Wisconsin's HIE "white space" as described in the December 2010 supplement to the SOP
- Develops and executes a statewide outreach and education plan, to include consumers, employers, providers, payers, legislators, other government entities, educators, and other stakeholders
- Works with the Communications and Marketing Coordinator to:
  - Coordinate communications, education and marketing strategies and tactics to ensure alignment and consistent messaging and branding
  - Develop marketing materials, newsletters, website content, and other marketing materials
  - Develop and deliver training materials and training sessions to clients
- Serves as a liaison with existing and potential health care clients to:
  - Learn their workflow and understand how Wisconsin's HIE solution(s) would influence work processes and benefit the clients
  - Represent and advance the client's interests, needs and work processes to influence WISHIN's planning, development, and implementation processes
  - Identify training needs
- Manages changes and/or upgrades to WISHIN products/services, including the identification of new features, deployment plans, and feature communications
- Provides Tier-2 help desk assistance on WISHIN products/services

9.2.1.6 Administrative Assistant

The Administrative Assistant position is filled.

The Administrative Assistant position includes the following responsibilities and functions:

- Provides administrative support for the Chief Executive Officer and WISHIN staff for the day-to-day operations of the entity
- Assists with logistics for events and meetings
- Supports staff in the preparation of presentations, reports, and other documents
- Takes minutes of Board meetings and other Committee meetings as directed
- Handles travel arrangements; maintains schedules and calendars; orders and maintain supplies; creates and maintains all e-mail distribution lists; and manages the overall administrative requirements for the office, including human resources requirements (e.g., maintaining proper personnel files)

9.2.1.7 Policy Analyst

The Policy Analyst position is filled by contract staff.

The Policy Analyst role includes the following responsibilities and functions:

- Serves as the liaison with the WISHIN Policy Advisory Committee, WISHIN's Technical Advisory Committee and with WISHIN's legal counsel with respect to development, implementation, and regulations regarding security and privacy
- Tracks national HIE efforts
- Leads activities to develop, implement, and enforce privacy and security requirements
- Works with the Project Director to develop, implement, and enforce appropriate privacy and security requirements
- Researches, suggests, and assists legal counsel and the Policy Advisory Committee in the development of model agreements and other legal documents

Some functions that were originally envisioned for this position in the 2010 SOP are being carried out by the CEO, the Project Director, WISHIN's legal counsel, and the efforts of WISHIN's Policy Advisory Committee, including the following responsibilities and functions:

- Develops and maintains a policy framework for WISHIN
- Monitors state and federal laws and regulations and ensures state HIE efforts are in compliance
- Recommends changes to state law to further the adoption of HIE statewide

These responsibilities and functions will become the responsibility of the permanent staff member that fills this position.

9.2.1.8 Technical Operations Manager

The Technical Operations Manager position is currently filled by WHIE as WISHIN's Technical Operator.

The Technical Operations Manager role includes the following responsibilities and functions:

- Provides overall technical and operations management and ongoing assessment of technical requirements to ensure compliance with established service level agreements for HIE services
- Maintains alignment with all evolving health care information technology and information exchange standards and certification requirements and applies the preceding in all implementations of HIE in the state
- Establishes and maintains all service level agreements related to technical services

- In the event that HIE services are contracted with one or more regional initiatives or commercial vendors, oversees and administers these contracts and ensures compliance, as well as ensures operations of the SHIN in this distributed model
- Maintains core technical services and ensures their operation for the SHIN for all implementation models
- Conducts long-term planning for continued growth and development of the SHIN
- Ensures participants in the SHIN comply with the participant agreements and policies established by WISHIN
- Works with the Project Director to ensure alignment between project and business needs and technical solutions

9.2.1.9 Controller

The responsibilities and functions of the Controller position are currently being fulfilled by Wisconsin Hospital Association employees under contract with WISHIN.

The Controller role includes the following responsibilities and functions:

- Implements procedures to monitor spending
- Develops accounts payable and receivable procedures
- Ensures proper financial reporting to the state and federal government
- Provides the Board and CEO with financial analyses

9.2.1.10Director of Information Security and Privacy/CISO-CPO

The responsibilities and functions of the Director of Information Security and Privacy position are currently being fulfilled by the CEO, COO, and WISHIN's Technical Operator, WHIE.

The Director of Information Security and Privacy role includes the following responsibilities and functions:

- Oversees the IT risk assessment, data and technology security, threat and vulnerability, and business continuity functions
- Reviews IT risk metrics and reports, including commenting on remediation plans in response to audit findings and key risk exposures identified during security and privacy assessments
- Verifies due diligence is performed with any third party processors, prior to selecting a third party to process or store data
- Works with legal counsel to verify that proper security and privacy contractual language is included in third party contracts
- Advises on remediation of any adverse event

9.2.2 Additional Technical Operations Roles

The suggested core roles listed above are necessary for daily WISHIN business and technical operations. For technical operations, the following roles may also be required

by the technical operator and could be staffed through internal staffing, in-kind contributions through private or public organizations, or through contracts. Current WHIE staff includes a Project Manager, Data/Reporting Analyst, a contracted HIE technical consultant, and contracted services for compliance and legal.

To maintain continuity between growth and current operations, WHIE anticipates needing to expand these contracted services and will take steps to ensure alignment with WISHIN and compliance with procurement policies and procedures. Existing technical business development partners will be WHIE's initial contact in relation to new functional development needs. WHIE will recruit additional staff or acquire contracted services to meet any outstanding staffing needs.

- Compliance Officer/Legal
- Project Manager(s)
- Technical Lead(s)
- Integration/Interface Developer(s)
- Data/Reporting Analyst(s)
- Education and Testing Specialist(s)
- Database Administrator(s)
- Network/Security Specialist(s)
- Help Desk Analyst
- Other IT-related roles, including those needed for hosting, networking, DBA and security

9.3 Technical Assistance

WISHIN will identify and provide technical assistance to guide providers in establishing a connection to the SHIN. This technical assistance will be provided through partnerships with WHIE, WHITEC, Medicaid, and professional health care organizations and associations across the state.

As part of its standard operating procedures, WISHIN will provide technical assistance, as needed, to entities involved in developing HIE capacity in Wisconsin. Our approach will be to provide 1) direct technical assistance via policies, procedures, and facilitated access to expert resources and services, and 2) to collaborate with WHIE and WHITEC to maximize the amount of technical support provided.

WHITEC will provide local technical assistance for primary care providers, and critical access hospitals in the adoption and Meaningful Use of EHRs to improve the health and safety of the people of Wisconsin. WISHIN will collaborate with WHIE and WHITEC to provide technical assistance and support to health care providers and labs as they adjust their workflows and begin exchanging health information.

9.4 Project Management

We recognize that project management for a multi-year, multi-phase and large-scale initiative goes beyond managing the day-to-day activities of the engaged team. It involves monitoring and communicating the project's status, producing quality deliverables on time and on budget, and identifying and resolving issues as the project

progresses. WISHIN has established an adaptable project management methodology for project and program implementation and oversight that will continue to be refined as we move forward with implementing our patient-centered, bi-directional exchange. We expect that our chosen HIE vendor will bring their own project management methodology and toolset to our implementation. Our plan is to work with our chosen vendor to determine which methodology and toolset is most appropriate for the work we will be engaging upon together. If neither set of methodologies or toolsets are sufficient, we will work the chosen vendor to modify, enhance, or select a methodology and toolset that the entire implementation team can use successfully.

Through the use of the methodology, the functions of project management will be performed by a team of project managers reporting to the COO and the Implementation Team Leader and working very closely with the key stakeholders and project sponsors to achieve the overall WIRED for Health project goals and objectives. The main tenants for the Implementation Team Leader and the project management team are as follows:

- Manage all execution threads through an integrated business, technology, and operations lens
- Be effective with a lean structure and skeleton staff
- Leverage existing processes and systems where possible
- Enforce sound governance
- Promote open and frequent communications within the organization and externally (including management of interdependent programs)
- Capture and leverage metrics (e.g., benefits, dependencies) for sound decision-making

The project management team is supported by toolsets to promote effective project management, including templates to standardize and accelerate all the phases of delivery. As noted earlier, these tools and templates currently in place at WISHIN may change depending on the tools/templates in use by the selected HIE vendor.

The following is a list of key project management activities:

- Project planning and management
- Project scheduling
- Project communications and reporting
- Resource management
- Issue and risk management
- Change control
- Financial reporting
- Workflow analysis

9.5 Procurement and Contracting

Maximum flexibility has been built into the procurement options for WISHIN. Consultants or HIE entities are and will continue to be used to perform any work that WISHIN identifies as short-term project work or work that requires a very specific skill for a limited time.

Whenever possible, WISHIN (or WHIE as WISHIN's Technical Operator) uses standard templates for procurement bulletins and contracts, both of which save time and prevent administration issues. There may be times when standard bulletins or contracts are not appropriate. In those cases, WISHIN and/or WHIE will work with WISHIN's Board, committees, and legal counsel to select the appropriate procurement or contracting vehicle.

Procurement and contracting vehicles will help to simplify program and vendor management and performance measurement. Contract/project deliverables will be tied to the payment schedule whenever possible.

9.6 Monitoring Performance

Base operational performance monitoring for SHIN services will be tied to the Service Level Agreements (SLA) established by WISHIN and the participating organizations in the SHIN. It is anticipated that these SLA metrics will include such elements as:

- Network availability
- MPI services
- Throughput
- Response time for regional or portal services

Details on operational performance monitoring will be established based on use cases, scenarios, and services planned for implementation as prioritized by WISHIN's Board of Directors. Some of the performance measures may be influenced by the chosen HIE vendor; however, WISHIN will require certain standard SLA measures based on industry standards.

Overall, the success of SHIN advancement and engagement of target populations of EPs will be measured by performance measures approved by the WISHIN Board of Directors.

Over time, other participants that add value to, or obtain value from, the electronic exchange of health information, will be added as participating organizations of the SHIN.

9.7 Communications, Education, and Marketing Strategy

To support the goal of sustaining a SHIN and HIE services, the Communication Advisory Committee developed a proposed strategy to:

1) Inform, educate, and engage health care providers and organizations, the public, and other key stakeholders about the benefits of HIT adoption and use, and HIE-related activities in Wisconsin.

2) Engage key stakeholder organizations that will be instrumental in helping communicate important information to their members and constituents, and assisting with these activities.

3) Develop a marketing program that successfully communicates the value of the SHIN and HIE services to stakeholders and encourages their voluntary participation and financial support.

The strategy relies on current ongoing communication activities that have proven to be successful in making information about eHealth in Wisconsin available and accessible to stakeholders and the health community. These activities will play an important role in the overall communications strategy for this initiative. WISHIN will employ some of these activities on an "as needed" basis or as opportunities arise.

An eHealth Initiative Web site contains information about EHRs, HIE, privacy and security, and federal HIT funding. This Web site also permits interested parties to make inquiries, which are answered by the eHealth program.

WISHIN has also developed a Web site that covers WISHIN and its history; WISHIN's Board, committees, and staff; information about HIE; information about WISHIN Direct (including the ability to enroll); information on WISHIN's meetings and meeting materials; information on WISHIN Bridge; and also contains an area where interested parties can "Get Involved." The WISHIN Web site also includes a place for individuals to subscribe to WISHIN's LISTSERVs, which will allow them to select the types of information they would like WISHIN to send them (e.g., event notices, vendor-related announcements, WISHIN's e-newsletter, and notices from the State Health IT Coordinator).

WISHIN continually develops, uses, and updates presentation material to provide information and consistent messaging directed at general and specific audiences. WISHIN's Communications and Marketing Coordinator develops press releases and articles that are published monthly in WISHIN's e-newsletter. WISHIN has also successfully collaborated with its founding organizations (the Wisconsin Hospital Association, the Wisconsin Medical Society, the Wisconsin Collaborative for Health Care Quality, and the Wisconsin Health Information Organization) and other partners such as WHITEC and Medicaid, to communicate important information about HIT and HIE to hospitals, clinics, and physicians.

WISHIN's Communications and Marketing Coordinator oversees the communications, education, and marketing functions of the statewide HIE. The Communications and Marketing Coordinator is also responsible for working with WISHIN's Communication Advisory Committee to implement the HIT and HIE communications, education, and marketing plan, which includes the integration of current ongoing communications activities. In addition, the Communications and Marketing Coordinator works directly with the Outreach/Product Specialists and project managers to ensure alignment and branding of product, service and project announcements. When education and training materials are needed or new products/services are rolled out, the Communications and Marketing Coordinator works with the appropriate staff to develop the materials and communicate the changes externally.

In late 2011, WISHIN released an RFP seeking the professional services of a marketing/market research firm to assist WISHIN in developing and conducting product and messaging market research for WISHIN's patient-centered, bi-directional exchange. The RFP also included a request for assistance in developing a marketing

and communications plan, messaging for WISHIN's product and/or service offerings, a "tool kit" of creative materials and other collateral.

Communications and education will be focused on a variety of key stakeholder audiences including a general audience, policymakers, Wisconsin legislators, health plans, hospitals, long-term care, home health, physician organizations, community clinics, public health departments, RHIOs, ancillary service organizations (i.e., lab, pharmacy, imaging), vendors, the public, consumer advocates, and health care payers, purchasers, and employers. The selected marketing firm will help to refine and prioritize the list of stakeholder audiences and will also determine the messages and outreach methods to reach those audiences.

WISHIN continues to collaborate with states on Wisconsin's borders (i.e., Illinois, Iowa, Michigan, and Minnesota), the Midwest Community College HIT Consortium colleges in Wisconsin, WHITEC, rural health organizations, professionals and organizations responsible for targeted health literacy initiatives, and representatives of special needs populations.

A detailed Communications, Education and Marketing plan is included in Appendix 7.

10 Legal and Policy

(Legal and Policy was Section 9 in the 2010 SOP)

The WIRED for Health Board established a legal and privacy framework intended to optimize and enable the electronic exchange of health information. The two principal areas of the legal and privacy framework are:

- Security & Privacy Mechanisms
- Mechanisms for Participation, Oversight, and Accountability

The legal and privacy framework developed by the WIRED for Health Board is the same structure used to govern the WISHIN Policy Advisory Committee and Policy workgroups.

10.1 Privacy and Security Strategy

10.1.1 Analysis of Privacy and Security Issues Related to HIE

Wisconsin has conducted significant analysis of privacy and security issues affecting in-state and out-of-state disclosures of electronic health information using HIE. This analysis was completed as part of Wisconsin's participation in the Health Information Security and Privacy Collaboration (HISPC) project, the work of the eHealth Board, a Section 51.30 (Mental Health/Substance Abuse) workgroup specially convened by the DHS in 2007, and the WIRED for Health Board. A full summary of completed analyses can be found in Appendix 12.

10.1.2 Key Differences between Wisconsin and Federal Law

Wisconsin, like many other states, has state laws that impose heightened consent requirements for the disclosure of certain types of sensitive health information. Wisconsin Statutes and rules impose specific consent requirements with respect to certain disclosures of certain health information related to mental health, developmental disabilities, and HIV/AIDS test results made for the purposes of treatment, payment, and health care operations. These requirements are more stringent than HIPAA, which would not require consent for disclosures of such information for treatment, payment, and health care operations purposes.

Further analysis of key differences between Wisconsin and federal law can be found in Appendix 13.

10.2 Legal and Policy Framework

10.2.1 Developing the Legal and Policy Framework

Wisconsin's legal and policy framework for HIE was established based on the following near-term goals and objectives:

1) Establish a policy framework that optimizes the electronic exchange of health information while protecting patient privacy.

a) Establish uniform privacy and security strategies, policies, and procedures for the SHIN and HIE services that ensure health information is protected in accordance with Wisconsin law, HIPAA, and other federal laws and requirements (i.e., consent, authorization, authentication, access, audit, breach, etc.).

b) Establish uniform business, technical, and operational policies, and procedures for the SHIN and HIE services that ensure health information is protected in accordance with Wisconsin law, HIPAA, and other federal laws and requirements.

c) Develop a process for establishing strategies, policies, and procedures identified in objectives (a) and (b) above incrementally over time.

d) Consistent with the established legal and policy framework, establish a contractual model for governing participation in the SHIN and HIE services in Wisconsin and in exchange with federal agencies.

e) Establish oversight and accountability mechanisms that ensure compliance with the established legal and policy framework by the SHIN and participants.

f) Develop a process to evaluate and update the legal and policy framework as part of an annual program evaluation and more often if necessary consistent with Objectives (a) and (b) above.

g) Collaborate with neighboring states, beginning with Minnesota, to harmonize laws, regulations, policies, and practices in support of interstate HIE.

2) Establish a legal framework that enables the electronic exchange of health information while protecting patient privacy.

a) Recommend changes to Wisconsin health privacy laws and regulations where warranted.

b) Advocate for harmonization of existing federal and state laws to enable HIE services.

c) Consistent with the established legal and policy framework, establish a contractual model for governing participation in the SHIN and HIE services in Wisconsin and in exchange with federal agencies.

d) Establish oversight and accountability mechanisms that ensure compliance with the established legal and privacy framework by the SHIN and participants.

e) Develop a process to evaluate and update the legal and policy framework as part of an annual program evaluation and more often if necessary consistent with Objectives (a) and (b) above.

f) Collaborate with neighboring states beginning with Minnesota to harmonize laws, regulations, policies, and practices in support of interstate exchange.

Furthermore, Wisconsin's legal and policy framework includes the following long-term goals and objectives:

- Evaluate an update the policy framework as part of an annual program evaluation and more often if necessary to optimize electronic exchange of health information while protecting patient privacy.
- Position the SHIN for participation in the nationwide health information network.
- Evaluate and update the legal framework as part of an annual program evaluation and more often if necessary to enable the electronic exchange of health information while protecting patient privacy.
- Position the SHIN for participation in the nationwide health information network.

In addition to the aforementioned near-term and long-term goals and objectives, Wisconsin's legal and policy framework also takes into consideration existing Wisconsin, federal, and other states' laws Privacy and security laws, liability laws, HITECH, contract law, health care regulations, Wisconsin's WIRED for Health Act, Patient Protection and Affordable Care Act (PPACA), payment reform, and other laws that impact the core legal and policy topics that WISHIN must address as it implements the SHIN.

Wisconsin identified security and privacy mechanisms and participation, oversight, and accountability mechanisms as the core legal and policy topics that must be addressed as part of its legal and policy framework. Together, these two topics have overlapping influence on the more specific policies and procedures that were created and will be finalized as part of WISHIN's patient-centered, bi-directional exchange implementation.

A visual summary of Wisconsin's legal and policy framework is illustrated in the following figure.

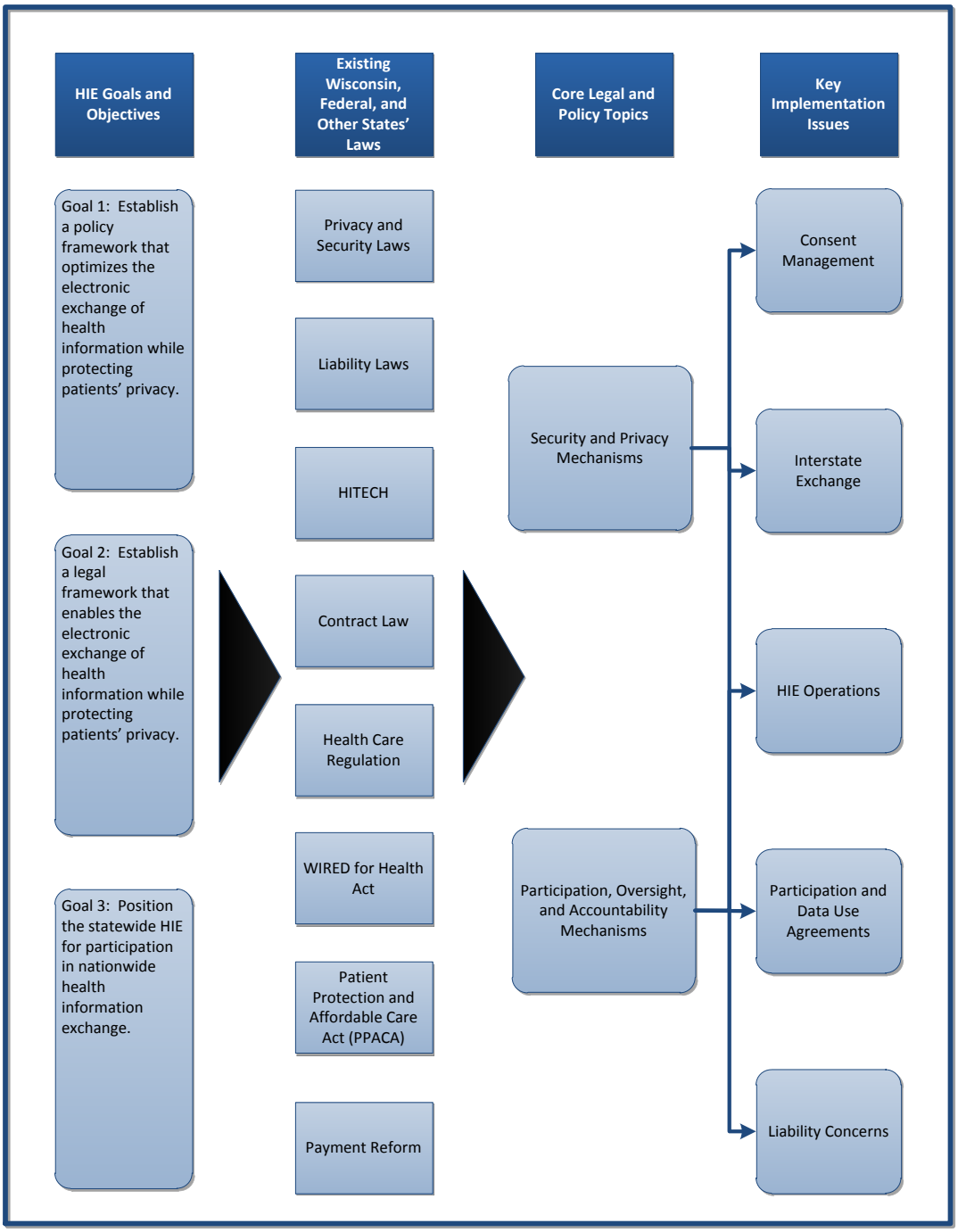

Figure 10.2.1 Legal and Policy Framework

The WISHIN Policy Advisory Committee and Policy workgroups, comprised of key HIE stakeholders, conducted analysis and provided recommendations to address the key implemenation issues listed in the illustration.

10.3 Security and Privacy Mechanisms

Strong mechanisms must be in place to ensure patient information is not inappropriately used or accessed to the detriment of the patient. Inappropriate use of patient information can be deterred using a combination of security measures and privacy measures. Security measures include administrative, technical, and physical safeguards designed to prospectively protect information from being misused, such as firewalls and data encryption, or to retrospectively deter and identify misuse, such as electronic audit trails. Privacy measures include procedural standards to protect information. Some privacy procedures, such as consent requirements, are intended to prospectively protect information from being misused by limiting access to information, while other privacy procedures, such as breach notification requirements and disclosure accounting requirements, are intended to retrospectively deter and identify misuse.

Historically, Wisconsin policymakers have relied exclusively on privacy measures to prevent inappropriate use of patient information. Alternatively, through the federal HIPAA and HITECH laws and regulations, Federal policymakers have chosen to use a balance of security measures and privacy measures to protect a patient's health information.

Wisconsin's approach sufficiently served the era of paper health care records where electronic security was not possible. However, the federal approach better serves the digital era of electronic health care records by protecting patient health information from inappropriate use through security measures and by facilitating improved patient care through privacy measures that enable more rapid communication of needed health care information. Wisconsin is pursuing updates to its medical record policies and laws that will (1) strengthen statutory mechanisms to prevent patient information from being inappropriately used, and (2) facilitate improvements in patient care and reductions in patients' cost of care by encouraging health care providers to securely share patient information between patients' caregivers.

10.3.1 Consent Management

Wisconsin consent laws have been the principal legislative mechanism for preventing inappropriate use of patient information, but at the same time have been identified as a significant impediment for widespread provider participation in electronic HIE. For this reason, Wisconsin has spent significant time reviewing options for managing consent.

The WISHIN Policy Advisory Committee, with input from the WISHIN Technical Advisory Committee, considered WISHIN's options for designing and implementing a system of HIE in the event that Wisconsin's existing mental-health privacy laws remain in place.

These laws (hereinafter referred to as "51.30") impose state-specific consent barriers to the release of mental-health information beyond those required by the federal Health Insurance Portability and Accountability Act (HIPAA).

The Policy Advisory Committee considered the extent to which WISHIN could design its system of HIE to eliminate the 51.30 consent burden potential WISHIN clients might face

as a consequence of participating in WISHIN's patient-centered, bi-directional exchange. These design options included:

- Suppress or filter information so that information supplied in response to a query would not include any 51.30 information, to eliminate any need to obtain 51.30 consent.
- Implement a centralized consent process to document that consent to share the information has been obtained, to eliminate any need to suppress 51.30 information.

The Policy Advisory Committee, with the guidance of the Technical Advisory Committee, concluded that while EHR systems and HIE vendors can support certain information-management and consent-management functions that would mitigate 51.30 compliance concerns, it does not appear that WISHIN could implement:

- A technological solution that could ensure that all 51.30 information could be blocked from disclosure; or
- A centralized consent management process that would address the risk-management concerns of all potential WISHIN participants.

The committee therefore reiterated its strong preference for the enactment of HIPAA-harmonization legislation in Wisconsin that would allow mental-health information to be treated in the same manner as other general health information from a privacy and consent standpoint. WISHIN is aware of HIPAA harmonization efforts in Wisconsin and supports efforts to change 51.30 legislation. Changes in Wisconsin law will help facilitate improvements in patient care and reductions in patients' cost of care by encouraging health care providers to securely share patient information between patients' caregivers. In designing, procuring, and implementing a statewide system of HIE, WISHIN will take steps to mitigate the privacy-compliance concerns of potential participants (patients and providers) in the absence of a HIPAA harmonization law. However, given the complexity and vagueness of 51.30, WISHIN acknowledges that its ability to preempt any and all such concerns is limited and that potential participants will individually evaluate the risk and benefits of WISHIN participation.

WISHIN's patient-centered, bi-directional exchange RFP asks HIE vendors to explain their systems' capabilities with respect to filtering sensitive information and managing consent centrally. WISHIN will continue to gather information about patients and providers' potential consent-management concerns and workflows to inform its vendor-evaluation process.

10.3.2 Interstate Exchange

The Interstate Exchange Policy workgroup was convened to identify issues related to interstate HIE and discuss mitigation strategies for WISHIN. The workgroup included a broad group of stakeholders that represented patients and providers.

Since interstate exchange is a well-researched and documented topic, the workgroup leveraged materials prepared as part of the Health Information Security and Privacy Collaboration (HISPC) studies, materials available for review issued by the Upper

Midwest Health Information Exchange (UM-HIE) Consortium, and researched gathered by the WIRED for Health Board.

The workgroup identified the following Policy issues and mitigation strategies.

Priority	Identified Risk	Description	Mitigation Strategy
1	State Statutes for Consent	Numerous states, including Iowa, Minnesota, and Ohio, have consent laws that are more restrictive than HIPAA.	Wisconsin will pursue HIPAA harmonization. WISHIN supports HIPAA harmonization efforts in Wisconsin. Wisconsin will procure a robust consent management module and develop policies and procedures in compliance with existing state and federal statutes.
2	Exchange of Sensitive Health Information	Numerous states, including Wisconsin, Minnesota, Illinois, Michigan, and Ohio, have provisions around the transfer of sensitive health information, such as: Behavioral Health Records, HIV, Alcohol & Other Drug Abuse, Sexually Transmitted Diseases, and Genetics Testing.	Wisconsin will pursue HIPAA harmonization. WISHIN supports HIPAA harmonization efforts in Wisconsin. If legislation is not passed, Wisconsin is considering implementing technology that filters sensitive patient information.
3	Reciprocal Agreements between States	Providers (on the border) that see patients from other states would need to sign up for HIE services in multiple states unless coherent reciprocal agreements exist between states.	Wisconsin supports the proposed "Policy Statement Interstate Access" document discussed during the Upper Midwest Stakeholders meeting.

Table 10.3.1 Interstate Exchange Policy Issues

The workgroup identified the following Technical risks and mitigation strategies.

Priority	Identified Risk	Description	Mitigation Strategy
1	Technology Standards	Standards, such as HL7 and IHE, do not provide enough rigors in message formats to guarantee that data conforms for interstate exchange. This means a Continuity of Care Record (CCR) or Continuity of Care Document (CCD) may not be cross-border compatible.	WISHIN is cognizant of emerging standards approved by ONC and will create interface control protocols consistent with these standards.
2	Authentication	Interstate exchange will require authentication from the Provider that is making the query to receive patient health information. Without a common standard for secure token passing, as well as trusted identity, this is a large risk for the exchange. These types of conflicts are what sophisticated hackers will use to penetrate the system.	WISHIN is considering creating an interstate exchange identity management system in collaboration with other states.
3	Patient Identification	States may use different probabilistic matching algorithms to identify patients using demographic data. This could be an issue unless some Protected Health Information (PHI) is used to identify patients. The sharing of PHI for this purpose may violate consent laws in other states.	WISHIN will leverage lessons learned from existing state programs, such as Medicaid and FoodShare, to understand patient (customer) identification mechanisms currently implemented in the state. Additionally, WISHIN is cognizant of consent laws in other states when designing its Patient Identification system.
4	Provider Directories	States will construct provider directories in different manners, such as centralized lookup repositories for provider data. Technology must be developed to share provider information across state lines and map information to the agreed format.	WISHIN will closely monitor progress made by the Standards & Interoperability (S&I) Framework Provider Directory workgroup and leverage best practices and standards to the extent practicable.

Priority	Identified Risk	Description	Mitigation Strategy
5	Quality Measures	Different quality measures, (i.e., the detail of information exchanged, service level agreements like transmission time, and atomicity of data exchanged) will be used by states to evaluate quality. The underlying data may not be compatible which could lead to different results, especially in the consolidated repository.	WISHIN is aware of developments from the ONC related to data standardization.
6	Technology Limitations	Several statewide HIEs have identified that images cannot be exchanged due to internet bandwidth limitations. This implies healthcare organizations must enforce additional policies around the exchange of this information.	Edge servers may be used by WISHIN participants to introduce local caching to reduce download and bandwidth issues from the central server.

Table 10.3.2 Interstate Exchange Technical Risks and Issues

A comprehensive report from the Interstate Exchange workgroup can be found in Appendix 9.

10.4 Participation, Oversight, and Accountability Mechanisms

Since statewide HIE is an emerging field, WISHIN has created workgroups and retained legal counsel to provide advice and develop policies as needed. These policies address privacy, security, auditing, accountability, liability, and indemnification.

10.4.1 Liability Policy

The WISHIN Liability Issues workgroup was convened to discuss liability concerns and recommend mitigation strategies. The workgroup identified a number of liability concerns relevant to WISHIN and its participants, as well as to others who might be impacted. The workgroup also agreed upon recommendations for WISHIN to explore to address identified liability concerns. The following is a list of concerns identified by the workgroup:

- Negligence
- Products liability (WISHIN for its participants and vice versa)
- Products liability (IT vendors/providers)
- Contractual

The workgroup assessed the list of liability concerns and provided recommendations that WISHIN should consider to mitigate the risks. The comprehensive report from the Liability Issues Policy workgroup, including liability risks and recommended mitigation

strategies, can be found in Appendix 10. WISHIN will consider the workgroup's recommendations and incorporate in WISHIN's patient-centered, bi-directional exchange under the direction of WISHIN's legal counsel.

10.4.2 Participation and Data Use Agreements

The WISHIN Direct Rapid Implementation workgroup provided input into the drafting of the WISHIN Direct Participation Agreement that outlines the provisions for WISHIN customers participating in WISHIN Direct services. This workgroup also provided input into the drafting of the WISHIN Bridge participation agreement that outlines the provisions for vendors that participate in WISHIN Bridge.

The WISHIN Direct and WISHIN Bridge participation agreements were reviewed by the WISHIN Policy Advisory Committee and sent to WISHIN's legal counsel for final changes and approval. WISHIN Direct went live on August 26, 2011. The WISHIN Direct Participation Agreement is executed with WISHIN clients upon enrollment in WISHIN Direct. A sample WISHIN Direct participation agreement can be found in Appendix 11.

The same workgroup responsible for drafting the WISHIN Direct and WISHIN Bridge participation agreements will continue to assist WISHIN in the development of participation and data use agreements required as part of WISHIN's patient-centered, bi-directional exchange.

10.5 Mechanisms to Refresh Legal and Policy Framework

The overall objective of the legal and policy framework is to establish clear parameters for the collection, access, use, and disclosure of personal health information by all individuals and organizations that participate in WISHIN and engage in the exchange of health information through WISHIN. In addition, patients must be provided with access to and reasonable controls over their personal health information and security safeguards and controls must be adopted. Several legal- and policy-related activities need to occur over the long-term to help promote the adoption and sustained use of HIT and HIE and keep Wisconsin's legal and policy framework robust and meaningful in the years to come.

WISHIN's Policy Advisory Committee will continue to incrementally develop and implement uniform privacy and security strategies, policies, procedures, and practices for the SHIN that ensure health information is protected in accordance with state and federal law. The development and implementation of strategies, policies, procedures, and practices will continue to be prioritized beginning with those items that need to be in place in order for the SHIN to "go live." Other items are and will continue to be developed and rolled out depending on where they fit into the overall project timeline and milestones.

The legal and policy framework outlined in this section will be continually evaluated and updated as part of the required annual program evaluation and more often if necessary. As a result of that process, we anticipate recommending changes to Wisconsin health laws and regulations for both intrastate and interstate HIE, advocating for the continued harmonization of existing federal and state laws to enable HIE

services, and developing new and revising existing strategies, policies, procedures, and practices for the SHIN. All of this work will continue to be undertaken in a comprehensive and consistent manner that reflects current as well as emerging health care information policies, practices, standards, and technologies.

10.6 Alignment with Federal HIE Efforts

In parallel with the development of state-based HIE capabilities, the federal government is developing a national HIE identified as the NwHIN. The Federal government's intent is that the NwHIN would connect to all 50 state-level HIEs in order to:

- Improve the health and healthcare of patients throughout the country, whether receiving care locally or when traveling throughout the nation.
- Enhance access to additional human services. For example, the SSA and the Marshfield Clinic Research Foundation have been working together to improve the speed, accuracy, and efficiency of the federal disability application process through electronic exchange of medical evidence to adjudicate disability claims using the NwHIN Exchange.
- Safeguard the privacy and security of protected health information—by fostering adoption of innovative technologies that are explored, developed, and tested in the open government environment.
- Provide providers and consumers with access to vital federal health and human service partners including, but not limited to, CMS, the SSA, the Department of Defense Military Health System, the VA, the Indian Health Service, and the Centers for Disease Control and Prevention.

WISHIN will establish necessary interfaces and alignments with the emerging NwHIN. Accordingly, WISHIN will leverage and comply with the policies, standards, and services required for statewide HIEs established and by the ONC. When new nationwide policies, standards, protocols, specifications, and services are adopted, WISHIN will maintain awareness of and will prioritize HIE policy and system updates to ensure appropriate compliance.

11 Implementation Plan

(Implementation Plan was Section 10 in the 2010 SOP)

WISHIN's WIRED for Health Implementation Plan describes an overall timeline for the activities, milestones, and tasks associated with the Strategic and Operational Plan. In Appendix 19, a detailed proposed project plan is included. WISHIN continually updates and reviews the plan.

The Implementation Plan is divided into 11major sections, including:

1) **Ongoing Activities** – Key project management tasks around monitoring and communicating the project's status and assisting with Board and Committee meetings, including:

    a. Budget updates
    b. Work plan updates
    c. Federal reporting and data requests
    d. ONC progress and projection reporting
    e. SOP updates
    f. Monthly activity and expense reports

2) **WISHIN Start-Up Activities** – This section includes all the initial activities that were needed for WISHIN to start its work to take over SOP and the duties of the WIRED Board. These activities are all now complete; however, they included:

    a. Development of WISHIN's staffing plan
    b. Creation of WISHIN's procurement policies and procedures
    c. Establishment of WISHIN's advisory committees
    d. Development of WISHIN's initial strategy
    e. Initial work to develop WISHIN's sustainability model

3) **WISHIN 2011** – This section includes activities WISHIN planned and completed in 2011, including:

    a. The engagement of WISHIN's advisory committees to plan for and launch WISHIN Direct (participation agreements, procurement of a HISP vendor, marketing of WISHIN Direct) and WISHIN Bridge (participation agreements, process definition, marketing)
    b. Activities needed to operationalize WISHIN Direct and WISHIN Bridge
    c. Activities needed to gather data, analyze results, plan outreach, and execute mechanisms to reduce Wisconsin's white space in all three PIN priority areas
    d. Committee work to plan for query-based exchange services
    e. Marketing activities to brand WISHIN and WISHIN services

4) **WISHIN Direct Pilots** – This section includes planning and ongoing activities related to each of the WISHIN Direct pilots.

5) **Procurement and Planning for HIE** – This section includes all of the activities needed to develop the RFP and procure a contractor for WISHIN's patient-centered, bi-directional HIE.

6) **WISHIN HIE Planning and Policy Development** – This section includes all of the planning activities related to WISHIN's patient-centered, bi-directional HIE, including:

    a. Conducting clinic and laboratory assessments
    b. Communications, education, and marketing activities
    c. Clinical data-related activities, including establishing a minimum data set for participants
    d. Criteria for selecting pilot communities for HIE use cases
    e. Policy development

7) **Standing Up HIE Services** – This section includes all of the technical activities necessary to stand up HIE services, including the configuration of WISHIN's consent management policies.

8) **Migrating WISHIN Direct into HIE service offering** – This section includes the activities needed to quickly migrate the existing WISHIN Direct service into the new HIE vendor environment to ensure no interruption of services by existing WISHIN Direct customers.

9) **HIE Services – Segment 1** – This section includes all of the activities needed to implement the HIE services identified for "Segment 1" rollout, including the implementation of two pilot communities and integration of SureScripts data into the longitudinal patient record (called a "community health record").

10) **HIE Services – Segment 2** – This section includes all of the activities needed to implement the HIE services identified for "Segment 2" rollout, including:

    a. NwHIN connectivity to SSA
    b. Adding immunization data to the community health record
    c. Allowing image viewing through the community health record
    d. Interfaces and connectivity for electronic lab reporting (ELR)
    e. Capability for nursing homes to complete transitions of care through a form (this is expanded further in Segment 3)
    f. Continued expansion of Segment 1 services to additional HIE participants and for additional use cases.

11) **HIE Services – Segment 3** – This section includes all of the activities needed to implement the HIE services identified for "Segment 3" rollout, including:

    a. NwHIN connectivity to other states
    b. Development of an Enterprise Service Bus (ESB) for future services
    c. HIE connectivity for Wisconsin's quality organizations (scope to be defined)
    d. Capability for nursing homes to complete transitions of care through the push of a CCD
    e. Launching an EHR-lite application for physicians

f. Continued expansion of Segment 1and Segment 2 services to additional HIE participants and for additional use cases.

11.1 Project Work Plan

The following figure shows the high-level project timeline and identifies key milestones for WISHIN. The detailed project plan can be found in Appendix 18. The project work plan was created with dependencies between tasks in mind.

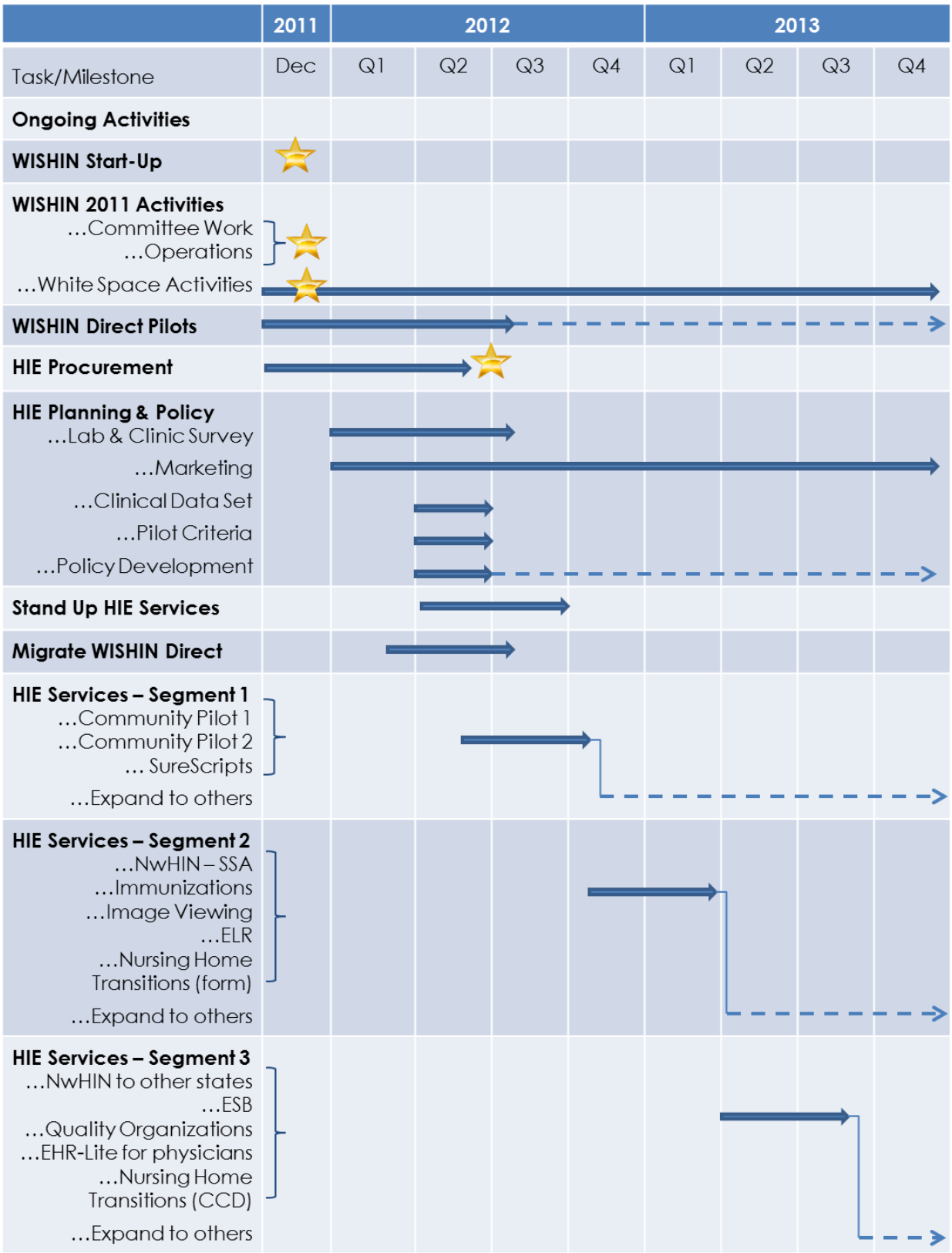

Figure 11.1.1 High-level implementation plan

12 WISHIN Evaluation Plan

The following section outlines the WISHIN Evaluation Plan.

12.1 Executive Summary

Section 3013 of the HITECH Act requires ONC to conduct a national-level program evaluation. As part of the national-level evaluation, states must provide ONC with annual state-level evaluations. ONC will provide documented lessons learned, technical assistance, and program guidance based on the results.

12.2 Aims of Wisconsin's Program Evaluation

WISHIN will use CAP funding to facilitate a program evaluation in Wisconsin that will:

1) Describe the approaches and strategies used in Wisconsin to facilitate and expand HIE. These approaches and strategies will include the priority areas as noted in the 2010 PIN as well as other areas appropriate for Wisconsin.

2) Identify conditions that support and hinder implementation of Wisconsin's strategies.

3) Analyze HIE performance for each of the PIN priorities.

4) Assess how the approaches and strategies, including policy and purchasing levers, used in Wisconsin contributed to progress toward the goals, including lessons learned.

WISHIN will outsource the refinement of this evaluation plan and the execution of the evaluation itself.

12.3 Success for WISHIN and HIE in Wisconsin is…

WISHIN's vision provides the framework for Wisconsin's program evaluation:

> **Vision:**
> To promote and improve the health of individuals and communities in Wisconsin through the development of information-sharing services that facilitate electronic delivery of the right health information at the right place and right time, to the right individuals.

The four key goals that will be evaluated include:

1) Ensuring health care providers in Wisconsin are exchanging health information electronically.

    a) Reducing the number of prescribers in Wisconsin that cannot accept electronic prescriptions.

    b) Reducing the number of laboratories in Wisconsin that cannot electronically deliver structured lab results.

c) Providing all physicians in Wisconsin with an option for electronically exchanging clinical summary information with other health care providers.

2) Providing value to our customers in a way that promotes and ensures WISHIN sustainability and, thus, the sustainability of HIE services statewide.

3) Protecting patient privacy while implementing HIE.

4) Removing barriers to HIT and HIE adoption and use by Wisconsin health care providers and consumers.

WISHIN has another long-term goal for ensuring that data exchanged via WISHIN from EHR systems statewide will be available to authorized entities for measurement of health care quality, determinants of health and trending/magnitude measures of health disparities. Evaluating this goal will not be possible in the early years of the statewide HIE; however, it will be important to keep this long-term goal in mind as we conduct evaluations in the early years.

12.4 Approach

WISHIN will be using a Balanced Scorecard approach to evaluating the HIE program in Wisconsin. This approach allows WISHIN to establish success criteria and associate specific measures with those success criteria. It also allows WISHIN to establish annual targets and track progress toward success.

The Balanced Scorecard approach offers several advantages:

1) It allows for both financial and non-financial measures.

2) It provides consistency in how success is measured.

3) It allows for a repeatable process.

4) While the Scorecard itself records annual progress toward the goals, the measures can be collected more frequently, allowing WISHIN leadership to quickly respond if a "course adjustment" is needed.

5) It is agile enough to accommodate changes in direction, new information, new technologies, etc., without compromising the overall criteria for success.

The process that WISHIN will follow for continuous evaluation using the Balanced Scorecard is as follows:

- Step 1: Identify success criteria for all evaluation areas.
- Step 2: Identify specific indicators for each success criterion.
- Step 3: Identify measures for each indicator.
- Step 4: Set targets for the next year.
- Step 5: Continually collect measures toward the targets (see Evaluation Methods below).
- Step 6: Record end-of-year actual measures.

- Step 7: Repeat Steps 4-6 at the end of every year.

As noted above, WISHIN will outsource (either through a competitive procurement or through strategic partnering) the refinement of this evaluation plan and the execution of the evaluation itself. The balanced scorecard described in the following section will serve as a starting point for discussions with Wisconsin's HIE program evaluation team, which we expect will be a workgroup of our advisory committees. Targets and actuals will be completed as the plan is refined and the evaluation is executed.

12.5 Evaluation Methods

The evaluation methods used, including study design, study population, data sources, and analysis, will be outsourced by WISHIN to an entity skilled in planning and conducting program evaluations. However, WISHIN currently has two efforts underway that may be leveraged as part of the evaluation process:

1) WISHIN has contracted with a market research and marketing firm to evaluate the HIE market in Wisconsin. Collection methods currently under consideration include focus groups and surveys.
2) WISHIN has contracted with the University of Wisconsin Survey Center to conduct two surveys:
    a) A survey of Wisconsin's CLIA-Certified and Accredited laboratories to determine capacity for electronically sending structured lab results and collecting additional information on laboratory orders, standards, and HIE barriers.
        i. There are more than 780 CLIA Certified and Accredited laboratories in Wisconsin.
        ii. The survey will be distributed via paper, with follow-up phone calls to encourage survey participation.
        iii. A laboratory workgroup has been established by WISHIN and will help to analyze the survey results.
    b) A survey of Wisconsin's office-based physicians (via clinics) to determine HIT adoption, HIE participation and capacity (care summary, lab orders/results, e-prescribing), information on their EHR system, and HIE barriers.
        i. There are more than 2,600 office-based physicians in Wisconsin.
        ii. The survey is still being developed and the survey distribution method has not been determined.
        iii. A clinical advisory workgroup has been established by WISHIN and will help to analyze the survey results.

WISHIN will review the existing survey and assessment efforts with the organization contracted to complete evaluation planning and execution, making adjustments and conducting additional assessments as needed. In addition, WISHIN stakeholders will play an important part in helping to determine success criteria and assessing the results and determining "course adjustments" that may be needed to fill any identified gaps.

12.6 Wisconsin's Balanced Scorecard

1. Ensuring that data exchanged between EHR systems statewide using WISHIN services will be available to authorized entities for measurement of health care quality, determinants of health, and trending/magnitude measures of health disparities.				
Indicators	**Measure**	**2012 Target**	**2012 Actual**	**2013 Target**
1a: Quality organizations in Wisconsin are receiving data for quality measures through WISHIN.				
	Number of Wisconsin quality organizations connected to the SHIN.	0	TBD	TBD
	Number of entities sending data via WISHIN to connected quality organizations for measurement of health care quality.	0	TBD	TBD
1b: Public Health reportable lab results are being sent to Wisconsin's Division of Public Health electronically.				
	Percentage of Public Health reportable lab results sent via the SHIN.	0%	TBD	TBD
	Percentage of Public Health reportable lab results sent to the Division of Public Health electronically.	75%	TBD	TBD
1c: Public Health syndromic surveillance data is being sent to Wisconsin's Division of Public Health electronically.				
	Percentage of hospital EDs electronically sending syndromic surveillance data to Public Health via the SHIN.	40%	TBD	TBD

	Percentage of office-based providers/clinics electronically sending syndromic surveillance data to Public Health via the SHIN.	0%	TBD	TBD
1d: Immunization data is being sent to the Wisconsin Immunization Registry (WIR) electronically.				
	Percentage of immunizations being sent to WIR electronically (not via data entry through the WIR user interface or via flat-file data load and uploaded to the WIR website – must be HL7 batch messages directly from a EMR system or HL7 real-time transactions directly from an EMR system).	60%	TBD	TBD
	Percentage of Immunization data being sent to WIR via the SHIN.	0%	TBD	TBD

Key Questions/Considerations:

1) Is WISHIN helping Wisconsin's quality organizations measure health care quality throughout the state?
2) Are health disparities being identified more efficiently and more effectively because of WISHIN?
3) Does using the SHIN for quality reporting simplify the quality reporting process for physicians and hospitals?
4) What role and impact has HIE governance and policy or purchasing levers had in enabling the quality reporting process using HIE?

2. Protecting patient privacy while implementing health information exchange.				
Indicators	**Measure**	**2012 Target**	**2012 Actual**	**2013 Target**
2a: WISHIN's HIE operations will have no HIPAA privacy breaches.				
	Number of breaches.	0	TBD	TBD

Key Questions/Considerations:

1) Are consumers adequately informed about HIE? Can more be done to better inform them?

2) What do consumers see as the benefits of HIE?

3) What concerns do consumers have about HIE?

3. Ensuring health care providers in Wisconsin are exchanging health information electronically.				
Indicators	**Measure**	**2012 Target**	**2012 Actual**	**2013 Target**
3a: Pharmacies in Wisconsin can accept electronic prescriptions.				
	Percentage of pharmacies in Wisconsin that can accept eRx.	99%	TBD	TBD
	Percentage of pharmacies in Wisconsin that can accept eRx of controlled substances.	0%	TBD	TBD
3b: Physicians in Wisconsin can send electronic prescriptions.				
	Percentage of physicians in Wisconsin that can send eRx.	74%	TBD	TBD
	Percentage of physicians in Wisconsin that can send eRX of controlled substances.	0%	TBD	TBD

3c: Reference labs in Wisconsin can send structured lab results electronically to physicians.				
	Percentage of reference labs in Wisconsin that can deliver structured lab results electronically to physicians.	Survey[13]	TBD	TBD
3d: Physicians in the state are able to receive lab results electronically and incorporate those results as discrete data into their EHR systems.				
	Percentage of physicians who are able to receive lab results electronically and incorporate those results as discrete data into their EHR system.	Survey	TBD	TBD
3e: Physicians in Wisconsin have an HIE option available (whether it is by affiliating with one of the existing health care entity-related HIEs or by using WISHIN Direct) to exchange a care summary with a physician not associated with their organization (legal entity).				
	Percentage of physicians who have an HIE option available to exchange a care summary with a physician outside their legal organization.	100%	TBD	TBD
	Percentage of physicians who have an HIE option available to exchange a care summary with a physician outside their legal organization that is using a different vendor's EHR technology.	100%	TBD	TBD
3f: Providers in Wisconsin are exchanging health information electronically.				

[13] WISHIN's ONC-approved 2012 strategy for laboratories includes a laboratory and clinic/physician assessment that will provide important data to inform these targets.

	Number of providers using WISHIN Direct.	435	TBD	TBD
	Number of WISHIN Connect HISPs.	2	TBD	TBD
	Number of physicians participating in an existing sub-state HIE in Wisconsin.	8,350	TBD	TBD
	Number of existing sub-state HIE's connected to the SHIN.	1	TBD	TBD
	Number of physicians (MDs and DOs) participating in the SHIN.	500	TBD	TBD
	Number of hospitals participating in the SHIN.	51	TBD	TBD
	Number of eligible professionals (non-MDs and non-DOs) participating in the SHIN.	0	TBD	TBD
	Number of laboratories participating in the SHIN.	10	TBD	TBD
	Number of pharmacies participating in the SHIN.	0	TBD	TBD

Key Questions/Considerations:

1) Are providers accessing medication history information via the HIE? If so, how often?

2) Can pharmacies derive value from accessing medication history before dispensing to a customer and provide clinical consultation to the patient.

3) What is the discrepancy rate (or effectiveness) between what was prescribed and what was dispensed? What are the causes of the discrepancy or the effectiveness?

4) Has the HIE contributed to a reduction in the number of duplicate laboratory tests? If so, how?

5) Has the HIE contributed to a reduction in hospital emergency department and inpatient admissions and re-admissions?

6) Are providers satisfied with the ease of use of the HIE?

7) Are providers satisfied that the HIE integrates with their existing workflow?

8) Do providers believe they are able to provide better care as a result of the information they can access through the HIE?

9) If a provider is not participating in the HIE, why not? What are the barriers? What would be needed to encourage the provider to participate?

10) Do providers have concerns about the security of the HIE?

11) Do providers have concerns about the quality of the data in the HIE?

4. Support the development of a sustainable business model for building and maintaining health information exchange in Wisconsin.				
Indicators	**Measure**	**2012 Target**	**2012 Actual**	**2013 Target**
4a: Have the appropriate policies and procedures, including government policy or purchasing levers and legislation, been developed to support the exchange of data via a statewide HIE in Wisconsin.				
4b: Is the technical infrastructure in place, and in a maintainable state, to support the exchange of data via a statewide HIE in Wisconsin.				
4c: Does the HIE workforce have sufficient training and skills in health information technology to support the development, rollout, and ongoing maintenance and promotion of a statewide health information network.				

Note: Evaluation area #4 (above) requires subjective measures, therefore no targets have been set. The key questions/considerations noted below will be tracked and evaluated further to determine if objective measures can be established for this evaluation area.

Key Questions/Considerations:

1) Are policies set by the state-level governing board or state government (including legislation passed) encouraging or discouraging participation in HIE and to what extent?

2) Are the governance processes of WISHIN transparent and inclusive?

3) How engaged is the state-level HIE governing board in advocating and championing HIT and HIE adoption and use by Wisconsin health care providers?

4) Do participants feel involved in the policy-setting and governance processes of the WISHIN?

5) Do participants find the HIE reliable?

6) Do participants feel they get value out the HIE (benefits vs. cost)?

7) Do WISHIN staff feel adequately trained to support the HIE? If not, what areas need further development?