State of Michigan - State Medicaid HIT Plan (SMHP)

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1. Purpose
The State Medicaid Health Information Technology Plan (SMHP) describes Michigan’s activities over the next 5 years relative to implementing Section 4201 Medicaid provisions of the American Recovery and Reinvestment Act (ARRA). These activities will fall into four main areas:

1. Administering the incentive payments to eligible professionals and hospitals;
2. Conducting adequate oversight of the program, including tracking meaningful use by providers;
3. Pursuing initiatives to encourage the adoption of certified EHR technology to promote health care quality and the exchange of health care information;
4. Promoting and enabling the meaningful use of EHRs.

This document will describe how Michigan intends to:

- Administer the Electronic Health Record (EHR) incentive payments to eligible health providers.
- Monitor EHR incentive payments to eligible health providers.
- Coordinate all ongoing Health IT (HIT) initiatives including; Medicaid EHR Incentive Program, Statewide Health Information Exchange (HIE) initiatives and Regional Extension Centers supported by the Office of the National Coordinator for HIT (ONC), and other programs.
- Outline various sources of funding for HIT initiatives including HITECH IAPD or a Medicaid Management Information System (MMIS) IAPD.

The SMHP consists of the following main sections:

- Michigan’s “As-Is” HIT Landscape
- Michigan’s “To-Be” HIT Landscape
- Michigan’s Medicaid EHR Incentive Program Implementation Plan and Audit Strategy
- Michigan’s HIT Roadmap

1.1. About this Document
The SMHP will be a “living” document and will be reviewed and updated as needed. Revisions will be submitted to Centers for Medicare and Medicaid Services (CMS) for their approval approximately once a year. The most current approved version will be available on the MDCH website and at www.MichiganHealthIT.org/smhp/.

1.2. Public Input
Public input is welcomed on this document. Comments will be accepted on an ongoing basis. Comments should be directed to MDCH-EHR@michigan.gov with the subject of SMHP Comment. Meaningful comments will be responded to and incorporated into the next version as appropriate.
2. Michigan “As-Is” HIT Landscape

Understanding that technology could have a revolutionary impact on health care, Michigan has been exploring and implementing Health Information Technology and Exchange (HIT/E) for several years. Michigan, both state government and other health care stakeholders, has a long and distinguished history of using HIT/E to improve quality of care and monitor population health. This history includes five years of Health Information Exchange (HIE) activities, over two years of encouraging ePrescribing, and over a dozen years of using technology to track and monitor population health issues. In recent years, both hospital and health care professionals have been achieving huge advancements in adopting Electronic Health Records (EHR) and improving interoperability between HIT systems and health care organizations.

2.1. HIT/E Stakeholders

Realizing the potential benefits that HIT could provide, Michigan’s health care leaders have been collaborating for many years. In addition to very active informal stakeholders groups, Michigan has two formal groups. Both groups have broad stakeholder involvement and are described below.

Stakeholders from both inside and outside the State government were involved in the drafting of this plan. State government included staff for all parts of Medicaid, public health and the HIT/E office inside Michigan Department of Community Health (MDCH), as well as, staff from the Michigan Department of Technology, Management and Budget (MDTMB). External stakeholders have been involved through individual or group meetings both with professional organizations or associations and individual providers. External stakeholder coordination included meeting with Michigan Tribal Health Directors Association, Michigan Primary Care Association (MPCA) representing Federally Qualified Health Centers (FQHC), Michigan Center for Rural Health (MCRH) representing Rural Health Clinics (RHC), Critical Access Hospitals (CAH) and other rural providers, and many others.

2.1.1. Michigan Health Information Technology Commission

The Michigan HIT Commission was created by an act of the state legislature in 2006. The HIT Commission is an advisory committee to the Michigan Department of Community Health (MDCH), and its mission is to facilitate and promote the design, implementation, operation, and maintenance of an interoperable health care information infrastructure in Michigan. Each of the 11 members of the Commission, appointed by the Governor, represents a different health care stakeholder. The Director of MDCH, also the Single State Agency, is a member of the HIT Commission. Staff from Medicaid participates in the meetings and provides status updates on a regular basis. These meetings are public, and many stakeholders attend these meetings. Currently the Commission is comprised of:

1 Learn more at [http://www.michigan.gov/mdch/0,1607,7-132-2946_44257--,00.html](http://www.michigan.gov/mdch/0,1607,7-132-2946_44257--,00.html)
• Gregory Forzley, M.D., of Grand Rapids represents doctors of medicine for a term expiring August 3, 2015.
• Joseph Hohner of Canton represents nonprofit health care corporations for a term expiring August 3, 2014.
• Toshiki Masaki of Canton represents purchasers and employers for a term expiring August 3, 2013.
• Mark Notman, Ph.D., of East Lansing represents schools of medicine in Michigan for a term expiring August 3, 2013.
• Olga Dazzo of East Lansing, Director of the Michigan Department of Community Health, is appointed for a term expiring August 3, 2012.
• Thomas Lauzon of Shelby Township represents health plans or other third party payers for a term expiring August 3, 2014.
• Dennis Swan of Okemos represents hospitals for a term expiring August 3, 2013.
• David Behen, State of Michigan CIO, is appointed for a term expiring August 3, 2012.
• Larry Wagenknecht, R. Ph., of Haslett represents pharmacists for a term expiring August 3, 2014.
• Michael Chrissos of Ann Arbor represents consumers for a term expiring August 3, 2015.
• Orest Sowirka, D.O., of Sterling Heights represents doctors of osteopathic medicine and surgery for a term expiring August 3, 2015.

2.1.2. MiHIN Workgroups

Building off the highly successful Michigan Health Information Network (MiHIN) Conduit to Care workgroups that met during 2006, in late 2009 MDCH reconvened similar workgroups to help guide the state HIE planning efforts. The Governance and Finance Workgroup developed an integrated governance approach involving key stakeholders in addressing the most important clinical, technical, financial, and performance measurement aspects of HIE. The Technical Workgroup was responsible for providing input towards the development of technical deliverables for the statewide HIE effort and collaborating with the other workgroups to ensure that clinical and measurement capabilities are built into the infrastructure. The Business Operations Workgroup focused on accelerating adoption of Health Information Technology in the State of Michigan in order to lower costs, improve quality, and increase the overall satisfaction with care.2 Medicaid was involved in these workgroups.

In December 2010, MiHIN became an independent public-private, non-profit collaboration among the Qualified Organizations (sub-state HIEs), insurers, providers, and the State of

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2 Learn more at www.michigan.gov/mihinworkgroups/
Michigan. MiHIN’s mission is to accelerate health information exchange, including meaningful use, within the State. MiHIN administers the technical and business operations of Michigan’s HIE cooperative agreement with the ONC.

2.2. State Health IT Systems

The state government has numerous IT systems that are directly and indirectly used in the health care environment. Health IT systems are primarily used in Medicaid and public health monitoring. This section outlines the current state of the state government HIT systems. Although there is some interaction between these systems now, this plan calls for acceleration of interoperability and interaction to improve efficiency and quality of care and support meaningful use.

2.2.1. Medicaid IT Systems

Medicaid has always been an early adopter of IT systems and is currently well positioned to leverage existing systems to advance HIT/E in Michigan. Michigan has two primary Medicaid systems: the Community Health Automated Medicaid Processing System (CHAMPS), the MMIS for Michigan Medicaid, and the Data Warehouse.

2.2.1.1. CHAMPS

In April 2006 the State of Michigan began a significant initiative to replace its 30+ year old Medicaid Management Information System (MMIS). The legacy system was a COBOL-based system originally written in 1972, with rewrites in 1975 and 1985 and HIPAA remediation completed in 2003.

The State partnered with software vendor CNSI for design, development, and implementation (DDI) of its state of the art web-centric, component based system. The new system, CHAMPS, was implemented in phases and as of June 2010 the major phases were complete. There are over 100 interfaces with other external systems responsible for data transmissions in and out of CHAMPS. MMIS certification was awarded in August 2011.
Figure 1 - CHAMPS Phased Implementation Timeline

**Web Portal – Major Release R-1**

The first major CHAMPS release occurred December 2006. It was a rewrite of the Department of Community Health (DCH) web site specific to the provider community. The effort restructured and reorganized the content of information pushed out to providers and prepared for the eventual capability of providers accessing CHAMPS, via the web portal, to conduct Medicaid business.

**Electronic Document Management System – Major Release R-2**

The second major release was implemented in July 2007. The enhanced Electronic Document Management System (EDMS) was designed to significantly decrease the volumes of paper generally required to manage a State Medicaid program, improve work flow, and improve customer service.

**Provider Enrollment – Major Release R-3**

The third release was the implementation of the first core CHAMPS subsystem, Provider. This provider enrollment functionality was available to Michigan Medicaid fee-for-service providers in March 2008.

The Provider subsystem facilitates storage of comprehensive provider information with an efficient means of accessing, viewing, and modifying the information.

The term “provider” is used to describe the full scope of the provider communities supported within the Medicaid program and its MMIS. This includes Managed Care Organizations (MCO) and health plans, billing agencies, clearinghouses, and other organizations supporting providers.

**Fee-for-Service and Managed Care Processing – Major Release R-4/5**

In September of 2009 the State implemented the largest of the releases. It included fee-for-service and managed care payment processing. This release activated the core functionality
of CHAMPS, utilizing the additional MMIS subsystems. Some of the key features and functionality of these subsystems are provided below.

**Benefits Administration and Reference**

The benefits administration functional component of CHAMPS supports a variety of customized benefit programs and modes of delivery of services. Each benefit plan encompasses a unique set of eligibility criteria, provider network, reimbursement rules, medical policy, and cost sharing components.

Reference and rate data are date and time specific and are never deleted. Reference and rate data are regularly sent to the Data Warehouse (DW) for analytical processing and reporting. Online functionality within the reference component allows an authorized user to inquire, add, and update individual codes, code attributes, and rates.

**Eligibility and Enrollment Subsystem**

The Eligibility and Enrollment (EE) business area is responsible for maintaining beneficiary eligibility and health plan enrollment, in accordance with State and Federal regulations, for eligibility verification and to ensure proper payment of claims processed in CHAMPS for Medicaid healthcare programs.

**Prior Authorization Subsystem**

The Prior Authorization (PA) subsystem is a key component of CHAMPS. PAs are used by the State to review, assess, pre-approve, or deny selected medical or other services prior to payment. The PA process serves as a cost containment and utilization review mechanism, and as quality assurance to support payment for treatments and services that are medically necessary, appropriate, or cost-effective.

**Claims Subsystem**

CHAMPS Claims subsystem processes claims from initial entry through final disposition and payment determination. Each transaction is edited against data maintained by other subsystems to ensure that the content is valid and can be fully adjudicated. The CHAMPS Claims subsystem provides enterprise-wide capabilities and is able to process an extensive variety of required transactions.

**Contracts Management Subsystem**

Contracts Management (CM) is the subsystem for managing direct services contracts; typically Managed Care and other contractually purchased services such as transportation, in-home care, and mental health and substance abuse services. The domain of these contracts is limited to contracts for services to eligible populations of the State of Michigan, as distinguished from administrative services contracts.
**Financial Services Subsystem**

The Financial Services subsystem includes a set of business processes to ensure that the CHAMPS business events are recorded in a timely and accurate manner, in accordance with Generally Accepted Accounting Principles (GAAP) in the State’s financial system.

**Customer Relationship Management/Member Services**

CHAMPS includes a Customer Relationship Management (CRM) system that provides Customer Service Representatives (CSRs) with a comprehensive view of the contact’s information. The system is capable of recording provider and beneficiary, and other contact interactions such as general inquiries, grievances and complaints, appeals, claim status, MiHealth card replacement requests, and protected health information requests.

**Common Components/General Services Subsystem**

Common Components/General Services provides the functionality for common services required by the various sub-systems. This functionality includes navigation/display, application security, backup and recovery and correspondence generation, Single Sign-On (SSO), application auditing, and system auditing. The application security and SSO elements were implemented with the Provider Enrollment R-3 release to facilitate R-3’s access and security requirements.

**Encounters – Major Release R-6**

The final major release of CHAMPS was implemented in June 2010. Encounters processing uses all of the functionality previously released. Encounters are processed through the claims processing stream and includes shadow pricing of claims. Managed care providers must submit encounter data using the electronic HIPAA X12 4010A 837 Health Care Claims transactions via the data exchange gateway.
Benefits

There have been many realized benefits of CHAMPS since implementation. The new technology uses Medicaid Information Technology Architecture (MITA) design standards, JAVA and XML in order to be object oriented, web-centered, and real-time. It is based on reusable JAVA components and is optimized for efficient performance and maximum functionality delivered to the user via the web browser. It has demonstrated improved customer service and support, reduced claims processing time, and allowed automation of many previously manual processes. As a result of CHAMPS, many policy changes are user maintained. For example, new programs or changes to programs or pricing that may be required as a result of State or Federal legislation can be implemented in the core system as a series of user maintained changes.

2.2.1.2. Data Warehouse

MDCH has developed an MMIS IT Architecture that provides the program required data to the analyst, manager, or end user. Michigan implemented a data warehouse solution as a component of the MMIS IT Architecture to meet the challenge of tracking individual clients and expand its decision support capability. It began in 1994 with a Medicaid-only database containing 36 months of Fee-for-Service (FFS) claims information, including providers and beneficiaries; 50 MDCH users had access to the data warehouse. The data warehouse was
organized into models for ease of use and retrieval of data. In 1998 when Michigan implemented its Managed Care Encounter System, the data warehouse was expanded to handle all encounter data processing and storage, enabling MDCH to conduct data quality reporting and health plan analysis. By 2001, 66 million encounters had been loaded into the data warehouse, and 100 MDCH staff had access to the data warehouse.

In 2002, the Unique Client Identifier (UCI) was implemented to integrate data from a range of data sources including immunization registry, WIC, and vital records data. The net result was a level of integration among the MDCH’s various program data sets that had never been achieved before. The assignment of a UCI to each individual loaded into the system enabled development – in a secure and confidential manner – of a comprehensive picture of service delivery and health outcomes among Medicaid clients. The UCI has been expanded over the years to integrate additional MDCH data sources (Medicaid and non-Medicaid), as well as data sources from other state departments and federal agencies.
Figure 3 – MDCH Data Warehouse Environment
MI Enterprise Data Warehouse
Data Sets

- Community Mental Health
- Children’s Special Health Care Services
- Early & Periodic Screening, Diagnostic, and Treatment (EPSDT)
- Habilitation Support Waiver
- HIV/AIDS (structure only; data deleted)
- Home Help Payments
- Lead Screening
- Long Term Care
  - Home Care
  - Nursing Home
  - OASIS
- Michigan Care Improvement Registry (MCIR)
- Medicaid Fee-for-Service
- Medicaid Beneficiary Eligibility
- Medicaid Managed Care
  - Payments
  - Encounters
  - Provider Networks
- Medicaid Provider
  - Eligibility
  - License
  - Network
  - DEA/CLIA
- MIChild
- MIHP (Maternal and Infant Health Program)
- MMA (Medicare Part D)
- Pharmacy
  - Claims
  - NDC
  - MAC
  - CMS rebate
- Substance Abuse
- Third Party Liability
- Vital Records - Death/Birth/Paternity
- Women Infants and Children
- Medicaid MI Choice Minimum Data Set

Other
- Human Services
- Corrections
- State Police
- Energy, Labor & Economic Growth
- Natural Resources
- Secretary of State
- Treasury
- State Courts
- Federal Data

Figure 4 – MDCH Data Warehouse Data Sets
An example of how the data warehouse allows integration of Medicaid and non-Medicaid data is illustrated below:

The MCIR application directly queries the data warehouse to access data needed to display the following:

- Lead results
- A high-risk indicator alerting that a child may be at risk for flu complications
- Well-child visits
- An indicator specifying whether services are up-to-date based on established schedules

The Data Warehouse Expansion project, begun in 2004, included: rewriting the data warehouse MMIS data model for HIPAA compliance (837 format); reengineering the Encounter System to integrate into the FFS structure; storing pended and rejected claims; and implementation of the NCPDP format for pharmacy encounters. By the end of this project in 2006, the data warehouse included six years of data, five additional data sources, and over 400 MDCH users had access to the data warehouse.

MDCH has incrementally expanded its capabilities through a series of targeted project implementations. Most recently, the State of Michigan embarked on the implementation of two major systems: MMIS and Eligibility Determination for all of Michigan's social service programs including
Medicaid, food stamps, and cash assistance. These initiatives resulted in significant changes to business processes, rules, and data sets. Because the data warehouse is a critical component of Michigan’s Medicaid program management, it required significant enhancements to accommodate data source changes. In 2010, MDCH completed a major project of integrating 12 separate health-related agencies and 34 data sources into a single integrated environment, and over 500 users have access to the MDCH data in the warehouse.

Table 1 – Growth of the Data Warehouse

<table>
<thead>
<tr>
<th>Statistic Description</th>
<th>1994</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program areas in data warehouse</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Data sources in data warehouse</td>
<td>3</td>
<td>34</td>
</tr>
<tr>
<td>Physical size of data warehouse</td>
<td>2,317 GB</td>
<td>3,521 GB</td>
</tr>
<tr>
<td>Claims in data warehouse (in millions)</td>
<td>210</td>
<td>472</td>
</tr>
<tr>
<td>Encounters in data warehouse (in millions)</td>
<td>0</td>
<td>272</td>
</tr>
<tr>
<td>Years of history in data warehouse</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Number of Departments with data on data warehouse (includes federal)</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Number of data warehouse users</td>
<td>50</td>
<td>515</td>
</tr>
</tbody>
</table>

MDCH is using the enterprise data warehouse to integrate related program data and conduct advanced data analysis. In so doing, MDCH is able to interpret patterns and gain insights into outcomes, or put another way, determine what has happened and why, and most importantly, what will happen in the future.

In short, the data warehouse has become a critical tool to help MDCH improve its delivery of health care services, evaluate program effectiveness, detect fraud and abuse, and prioritize opportunities to improve the health and well-being of the populations served by Medicaid.

2.2.2. Public Health Systems

Michigan has a long history of using health IT to improve public health. The Michigan Child Immunization Registry (MCIR, now called the Michigan Care Improvement Registry) started in 1998, and Michigan started work on the surveillance systems in 2004. These systems have been continually improved upon over the years and provide an excellent base on which to build the new meaningful use requirements.
2.2.2.1. Michigan Care Improvement Registry (MCIR)

The Michigan Care Improvement Registry (MCIR) is an Immunization Information System (IIS) developed in 1998 by the State of Michigan to assist immunization providers in their efforts to increase the immunization levels in Michigan and is currently maintained by the Michigan Department of Community Health Division of Immunization. A goal in this development process was to ensure the creation of a reliable, accessible software tool, which allows for the consolidation and assessment of immunization records of children on a state-wide basis. Consolidation and assessment of childhood immunization records provides the foundation for accurate assessment of current and future vaccine needs and has resulted in the reduction of missed vaccination opportunities.

MCIR programming includes incorporation of the current immunization schedule. This provides for assessment of a child’s immunization status through analysis of the Advisory Committee on Immunization Practices’ (ACIP) recommended immunization schedule. This assessment feature has been well received by physicians, due in part to the increasing complexity of the immunization schedule. The immunization schedule continues to experience increases in complexity as additional vaccines and combination vaccines are introduced. MCIR is designed to afford immunization providers, both public and private, with accessibility to immunization records from anywhere in the state. MCIR is populated with birth data submitted directly from the State’s electronic birth certificate system. It should be noted that to ensure the availability of data retrieval for timely review as well as to facilitate receipt of data, MCIR is operational on a continual basis 24 hours a day throughout the calendar year.

MCIR has proven to be extremely effective as a centralized repository for all immunizations administered in the state. As of June 2010, the MCIR contains over 72 million shot records and 6.5 million patient records. MCIR consolidates immunization data from all providers for each patient into a single, easily accessible record. This data is highly useful in a variety of ways. There are currently approximately 5,100 healthcare facilities (hospitals, pediatric clinics, family practice clinics, OB/GYN, migrant and tribal clinics) 400 public health clinics as well as schools and daycares, which utilize the immunization information stored in MCIR. In 2005, MCIR was enhanced to allow schools and childcare centers access to the system and in 2006 adults records were added. These programs currently utilize MCIR to perform all required reporting of immunizations to health departments as required by the Michigan Public Health Code. As of January 2009, 4,587 (95%) of the schools and 3,787 (89%) of the childcare centers accessed MCIR to report immunizations.

A key component in the future development of MCIR is to improve the delivery of healthcare through movement of immunization histories from paper medical records to electronic files. Advantages of maintaining immunization data in an electronic format are numerous. Electronic storage of historical records allows a practice to print immunization histories without the necessity of physically retrieving and reviewing a paper-based medical chart. An electronic format allows for an automated appraisal of those immunizations that are currently due based on the child’s age, history, and ACIP
recommendations. Electronic storage also allows for immunization histories to be readily transportable. In circumstances in which an individual seeks care outside of the medical home, an electronic format allows for ease of access to the immunization history of the individual. An electronic format also facilitates a medical practice to assess immunization coverage levels and to generate recall notices at the practice level.

Use of MCIR is supported by Public Act 540 that requires healthcare providers to report to the registry childhood immunizations that they administer. At the 2003 National Immunization Registry Conference, the State of Michigan received two awards. In summary, MCIR is a highly-developed and accessed statewide immunization registry that is used on a daily basis by over 13,000 users accessing the immunization records of children as well as adults. MCIR affords generation of approximately 2.8 million reports annually concerning the assessment of key clinical data enhancing the health and wellness of Michigan citizens.

**Collaboration with Medicaid**

MCIR has a history of collaboration with Medicaid. In March 2001, an Advance Planning Document was approved by Medicaid for funding of the web application version of MCIR. Previously MCIR was a client/server software program that needed to be installed on individual computers. Users connected to MCIR using the state network or a dial-up modem.

MCIR currently coordinates with Medicaid, allowing the Michigan Department of Community Health (MDCH) to measure all Medicaid children immunization coverage levels by county and health plan and throughout the state. It also assists in ensuring that all Medicaid children are appropriately screened and documented as eligible for the Federal Vaccines for Children program so they are not overlooked or miss an opportunity for childhood vaccinations. MCIR provides a central collection of data for all Michigan health plans so they can report on Healthcare Effectiveness Data and Information Set (HEDIS) measures.

Lead data in the data warehouse is linked to MCIR. There is a pop-up window that informs immunization providers if lead screening should be done on their patients. It can be critical to children living in high-risk zip codes or who have Medicaid IDs.

Individuals under 20 years of age with a high-risk condition are identified using diagnosis codes from the Medicaid Data Warehouse. Currently MCIR will have the high-risk flag checked if a child has been diagnosed with asthma and is on Medicaid. A high-risk pop up window will appear on MCIR notifying the provider that this person should be vaccinated for influenza.

Another feature that has been added to MCIR is an influenza screening notification field under the new heading High Risk Condition. This feature is on the general information page. MCIR users may check the influenza screening notification box if a patient in their clinic has a high-risk condition and should be vaccinated for influenza. This activates the pop up window to notify MCIR users to vaccinate
this person for influenza vaccine. This flag notifies providers of the probable priority for vaccination, but does not provide any information about the type of health condition that resulted in the patient being identified. Seasonal reminder letters can be generated at the provider, local health department or regional level. Providers have the ability to generate lists of high-risk patients to facilitate appointment scheduling before the influenza season.

Other Partnerships and Data Integration

Woman, Infants, and Children (WIC) is another partner in immunization initiatives and an important population to capture in the MCIR. As with Medicaid, the MCIR allows MDCH to measure immunization coverage levels, and is an additional benefit at the WIC clinics when the MCIR is used on-site. WIC clinics can look up individual clients to assess immunization needs and avoid under/over vaccination of WIC children. Thereby, it directly reduces the disease burden of WIC children for vaccine-preventable disease.

In April 2009, the All Hazard function of MCIR was activated. This module is used during a pandemic outbreak situation. It was used to track administration of the 2009 Novel H1N1 Influenza vaccine and the distribution of antivirals from the state and national stockpile. Reminder letters were generated from MCIR and mailed to persons that Medicaid and/or providers flagged as being at high risk for influenza.

MCIR is also integrated with:

- Vital Records (Electronic Birth Certificates are loaded into the MCIR to populate it with birthdates 1/1/1994 to present)
- EPSDT (Early Periodic Screening Diagnostic Treatment): once a Medicaid beneficiary is located in the MCIR system, a tab will display the history of preventive services and corresponding dates of service. This prevents duplication of services. See the screen print below.

<table>
<thead>
<tr>
<th>Immunizations</th>
<th>NBS Makers</th>
<th>Other</th>
<th>EPSDT</th>
<th>ENHDI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age:</strong> 1 Year</td>
<td><strong>Months Between Visits:</strong> 3</td>
<td><strong>Last Notified:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Date</strong></td>
<td><strong>Code</strong></td>
<td><strong>Description</strong></td>
<td><strong>Date</strong></td>
<td><strong>Code</strong></td>
</tr>
<tr>
<td>10/06/2008</td>
<td>98391</td>
<td>Pmr pm reval, est pat, inf</td>
<td>10/06/2008</td>
<td>98391</td>
</tr>
<tr>
<td></td>
<td>V040</td>
<td>VACCIN FOR POLIOMYELITIS</td>
<td></td>
<td>V040</td>
</tr>
<tr>
<td></td>
<td>V061</td>
<td>VACCIN FOR DTP</td>
<td></td>
<td>V061</td>
</tr>
<tr>
<td></td>
<td>V202</td>
<td>ROUTIN CHILD HEALTH EXAM</td>
<td></td>
<td>V202</td>
</tr>
<tr>
<td>02/11/2008</td>
<td>99391</td>
<td>Pmr pm reval, est pat, inf</td>
<td>02/11/2008</td>
<td>99391</td>
</tr>
<tr>
<td></td>
<td>V038</td>
<td>VACCIN FOR BACT DIS NEC</td>
<td></td>
<td>V038</td>
</tr>
<tr>
<td></td>
<td>V0382</td>
<td>STREP PNEUMONIA (PNEUMOCOCCUS)</td>
<td></td>
<td>V0382</td>
</tr>
<tr>
<td></td>
<td>V202</td>
<td>ROUTIN CHILD HEALTH EXAM</td>
<td></td>
<td>V202</td>
</tr>
<tr>
<td>04/13/2008</td>
<td>7746</td>
<td>FETAL/NEONATAL JAUND NOS</td>
<td>04/13/2008</td>
<td>9431</td>
</tr>
<tr>
<td></td>
<td>99431</td>
<td>Initial care, normal newborn</td>
<td></td>
<td>V3000</td>
</tr>
</tbody>
</table>

Figure 6 – MCIR: Early Periodic Screening Diagnostic Treatment Screen
• Newborn Screening (NBS) provides a link to the Newborn Metabolic screening report that is mailed to the primary care provider. This helps to provide continuity of care, especially because the newborn does not often see the same primary care provider that the parent identified at birth, in the hospital. See screen print below:

![Figure 7 – MCIR: Newborn Screening Screen](image)

• Blood Lead Screening shows the results of blood lead tests performed by state laboratories on at-risk infants and children. It also provides a recommendation, based on the result, for next steps in the child’s care. See screen print below.

![Figure 8 – MCIR: Blood Lead Screening Screen](image)

• Early Hearing Detection & Intervention (EHDI) displays the results of newborn hearing tests that are performed at birth in every Michigan hospital.

![Figure 9 – MCIR: Early Hearing Detection & Intervention Screen](image)

**Interoperability**

In early 2012 MCIR became interoperable with EHRs. HL7 messaging was incorporated into MCIR to support the meaningful use requirements and allow interoperability with EHRs and HIEs. As part of the overall HIT plan, MCIR will continue to be improved and expanded.

2.2.2.2. Michigan Disease Surveillance System (MDSS)

The Disease Surveillance system is an integrated surveillance system that can transfer appropriate public health, laboratory, and clinical data efficiently and securely over the Internet. The MDSS gathers and analyzes information quickly and accurately. This improves the state’s ability to
identify and track emerging infectious diseases and potential bioterrorism attacks, as well as to investigate outbreaks and monitor public health trends. MDSS will need some improvements and additional capacity to handle the new meaningful use requirements.

2.2.2.3 Michigan Syndromic Surveillance System (MSSS)
The Syndromic Surveillance system rapidly detects unusual outbreaks of illness resulting from either naturally occurring or intentional events that pose potential public health threats and emergencies. The system provides state and regional epidemiologists with early detection alerts and opportunities for rapid intervention. The systems tracks chief complaints of emergency-care patients in an effort to identify public health threats before confirmed diagnoses are available. Detection algorithms run every hour and send alerts to state and regional epidemiologists when deviations are found. Emergency Departments securely submit data elements electronically via HL7 or FTP. MSSS will need some improvements and additional capacity to handle the new meaningful use requirements.

2.2.2.4 State Bureau of Laboratories Systems
The Michigan Department of Community Health Bureau of Laboratories (BOL) utilizes STARLIMS (a COTS product) as its Laboratory Information System (LIMS) for microbiologic and environmental testing. Various Federal and State guidelines and regulations require that public health laboratories are able to respond rapidly and exchange health information with other public health partners. This enables local, state, and federal level partners to protect residents during an epidemic or other public health event due to naturally occurring or intentionally released agents. STARLIMS web-based system creates a seamless LIMS environment between Michigan’s three Regional Reference Level LRN laboratory partners, located at local public health agencies, the Michigan Department of Agriculture and the Diagnostic Center for Population and Animal Health, enabling intra-network transfer of specimens and ability to track specimens and results during a surge incident. STARLIMS provides specimen tracking and management and real-time reporting of all Michigan reportable diseases (and influenza laboratory reports) to local, state, and federal public health officials to control and prevent illness, disease, and deaths. STARLIMS flags reportable disease conditions from all three of Michigan’s regional laboratories, located in local health departments throughout the state, plus the State Laboratory in Lansing and its branch in Houghton and transmits a regular ongoing flow of electronic messages to the state’s disease surveillance system (MDSS). STARLIMS was recently upgraded to the latest version, 10.0. But even with this upgrade, STARLIMS will need some other improvements and additional capacity to handle the new meaningful use requirements.

2.3 EHR Adoption

2.3.1 Current State of Health Care Providers
As part of the HIT P-APD activities, Michigan conducted a HIT survey of all Medicaid ambulatory practices. In addition to this survey, several other HIT surveys were reviewed. The details of these surveys, combined with the community feedback that was received from the outreach and listening sessions, is the basis for our assessment of HIT adoption by health care providers.
2.3.1.1. Hospitals

Most hospitals in Michigan have some level of HIT in their facility. This varies from a fully functional EHR to a limited EHR that may only be used in a few departments. An analysis of Michigan’s HIT and HIE environment was conducted by the HIT office within MDCH in the fall of 2009. Approximately 63 percent of those responding reported HIE to be one of the top five organizational priorities, and 57 percent are or are planning to participate in a Qualified Organization (sub-state HIE). An overwhelming 90 percent of respondents reported that they plan to participate in the Medicare and Medicaid EHR Incentive Programs. A very high-level analysis of technical capabilities showed that 57 percent of respondents were utilizing a Certification Commission for HIT (CCHIT) certified EHR. Nearly 64 percent of respondents indicated use of e-prescribing functionality. However, even the most technologically advanced hospitals have serious concerns about meeting meaningful use requirements as laid out in the proposed rule. (NOTE: the survey was conducted before the final rule was released; it is not known how the changes from the proposed rule would affect the results.) In a 2010 survey completed by the Michigan Health and Hospital Association, 90.7% of the respondents thought the HIT functionality requirements were moderately (50.7%) or significantly (40%) burdensome, and over 98% thought the clinical quality measures were moderately (32.3%) or significantly (66.2%) burdensome. The respondents ranged from small rural hospitals to large urban facilities, and all of them noted that they would have trouble meeting at least one of the proposed stage one meaningful use measures.

2.3.1.2. EPs

In the survey that was conducted as part of the HIT P-APD activities, the current state and future plans for EHRs used by Michigan’s ambulatory Medicaid providers were reviewed. The survey was designed to identify:

- How many providers might apply for the incentive
- The range of practice sizes and types of practices from which providers will apply
- The extent of current and future EHR use among responding practices
- The ways in which EHRs are currently being used by practices
- The major concerns about EHR implementation among practices that do not currently have an EHR system in place
Surveys were mailed to 9,994 providers and practices.³ Responses were received from 2,186 practices.

A full copy of the survey findings is available in Appendix A (the survey instrument is also attached as Appendix B); only a few highlights are included here. Of the EPs likely to apply (interest expressed in the survey) for the incentive and are likely to be eligible (indicated over 30% Medicaid and not hospital-based on the survey) the average practice size is 5 providers. The vast majority (90.1 percent) have ten or fewer providers. The top three types of practice are primary care (43.9%), single specialty (not primary care, 14.2%), and community health center (9.0%). In that same group, 67.9% currently use an electronic practice management system; 40.7% currently use an EHR system. Of those practices that use an EHR system, 43.6% report that it is certified by the Certification Commission for Health Information Technology (CCHIT).⁴ Smaller practices are less likely than larger practices to have either an electronic practice management system or EHR in place.

Table 2 - Practice Size to EHR Use

<table>
<thead>
<tr>
<th>Practice Size</th>
<th>Currently Use an Electronic Practice Management System</th>
<th>Currently Use an Electronic Health Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>One or two providers</td>
<td>56.0%</td>
<td>31.6%</td>
</tr>
<tr>
<td>3 to 10 providers</td>
<td>74.2</td>
<td>33.3</td>
</tr>
<tr>
<td>11 or more providers</td>
<td>85.0</td>
<td>50.0</td>
</tr>
</tbody>
</table>

About two-fifths of the practices that are likely to apply and be eligible for the incentive are planning to implement an EHR either in the next 12 months (26.4 percent) or the next 13 to 24 months (16.0 percent). Those practices that have an EHR in place were asked to indicate which EHR functions are available in their EHR system and which functions are being used. With the exception of submitting data electronically to public health agencies, all of the functions listed in the table below are available and being used in a large majority of the EHR systems.

³ Two important items of note: (1) Providers and practices located outside of Michigan were included in the mailing list, and (2) individual practices may have received more than one survey due to the structure of the database. That is, if a provider is listed in the database as a sole proprietor and is also part of a group, a letter would have been mailed to both the provider’s sole proprietor address and group address. However, the survey instructions clearly stated that only one survey should be completed per practice.

⁴ Survey was completed before details on the new ONC Certification were available.
Table 3 - EHR Functions Currently in Use

<table>
<thead>
<tr>
<th>Function</th>
<th>Is the function available?</th>
<th>Is the function used?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Conduct drug-drug, drug-allergy, and drug-formulary checks</td>
<td>65.4%</td>
<td>25.9%</td>
</tr>
<tr>
<td>Generate lists of patients by specific condition</td>
<td>71.6%</td>
<td>19.8%</td>
</tr>
<tr>
<td>Generate patient reminders for guideline-based interventions and/or screening tests</td>
<td>62.5%</td>
<td>17.5%</td>
</tr>
<tr>
<td>Submit data electronically to public health agencies</td>
<td>37.3%</td>
<td>34.9%</td>
</tr>
<tr>
<td>Generate and transmit permissible prescriptions electronically</td>
<td>69.1%</td>
<td>28.4%</td>
</tr>
<tr>
<td>CPOE* for medications, labs, radiology/imaging, or referrals</td>
<td>58.2%</td>
<td>31.6%</td>
</tr>
<tr>
<td>Generate a clinical summary of office visits for patients</td>
<td>80.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Maintain up-to-date problem list of active diagnoses</td>
<td>76.3%</td>
<td>21.3%</td>
</tr>
<tr>
<td>Maintain active medication allergy list</td>
<td>93.8%</td>
<td>5.0%</td>
</tr>
<tr>
<td>Maintain active medication list</td>
<td>82.7%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Check insurance eligibility</td>
<td>63.8%</td>
<td>25.0%</td>
</tr>
<tr>
<td>Submit claims</td>
<td>78.6%</td>
<td>13.1%</td>
</tr>
</tbody>
</table>

The practices that do not currently have an EHR system in place were asked to indicate to what degree they are concerned with several issues related to EHR implementation. The primary concerns among those without an EHR system relate to the cost and potential for disruption to practice workflow.

- For 94.3 percent of those without an EHR, the initial costs of implementation are either a major (81.4 percent) or medium concern (12.9 percent).
- For 91.3 percent of those without an EHR, the recurring costs of an EHR system are either a major (56.8 percent) or medium concern (34.5 percent).
- For 79.4 percent of those without an EHR, disruption to practice workflow is either a major (48.2 percent) or medium concern (31.2 percent).

In addition, these practices have significant concerns about which EHR system to purchase and are worried that the EHR they choose will become obsolete. The table below provides a detailed look at the concerns among practices that do not currently have an EHR.

Table 4 - EHR Concerns

<table>
<thead>
<tr>
<th>Issue</th>
<th>Major Concern</th>
<th>Medium Concern</th>
<th>Minor Concern</th>
<th>Not a Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial costs of implementation</td>
<td>81.4%</td>
<td>12.9%</td>
<td>2.1%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Recurring costs of EHR system</td>
<td>56.8%</td>
<td>34.5%</td>
<td>5.0%</td>
<td>3.6%</td>
</tr>
</tbody>
</table>
Disruption to practice workflow & 48.2 & 31.2 & 13.5 & 7.1 \\
Unsure which EHR system to purchase & 47.9 & 17.4 & 14.6 & 20.1 \\
Worry that EHR choice will become obsolete & 32.4 & 23.0 & 23.0 & 21.6 \\
Familiarity with computer technology & 13.7 & 36.0 & 34.5 & 15.8 \\
Patient privacy & 18.4 & 22.0 & 37.6 & 22.0 \\
Internet access availability and reliability & 12.2 & 27.3 & 23.7 & 36.7 \\
No clear business value & 14.2 & 21.3 & 19.1 & 45.4 \\

In addition to the survey, during the Medicaid HIT Forums and other outreach events, providers expressed similar concerns about EHR costs and functionality. There was, and still is, a lot of confusion among the EP community about the incentive programs and certified EHR technology.

A second, follow-up survey was conducted in the fall of 2011. Surveys were mailed to 3,500 practices (not providers). Responses were received from 434 practices, a 12.4% response rate. Of these practices, 161—representing 552 providers—were deemed eligible for the Medicaid EHR Incentive Program. A full copy of the survey findings and the survey instrument are attached as Appendices C and D, respectively. A summary of key findings follows.

Increased knowledge of EHR systems gained over the last year appears to have reduced the level of concern in most areas (e.g., initial cost of implementation, disruption to workflow practice, and worry that the EHR choice will become obsolete) but heightened it in other areas (e.g., recurring costs of an EHR system and patient privacy). Nonetheless, by ranking, the top four provider concerns did not change from 2010 to 2011:

- Initial costs of implementation
- Recurring costs of the EHR system
- Indecision about which EHR system to purchase
- Disruption to practice workflow

Regarding achievement of meaningful use, the survey showed that those practices that have already applied for an incentive were far ahead of those planning to apply for the Medicare incentive and even farther ahead of those likely to apply for a Medicaid incentive. Regarding the availability and use of EHR functions, the survey results showed a contradiction: from 2010 to 2011, the availability of functions increased while their use decreased. This might be explained by the 2011 responses being more “informed” than the 2010 responses, i.e., by higher levels of knowledge about EHR systems. The data would also make sense if, due to the Incentive Programs, EHRs are being implemented but their full functionality has not yet been explored.

2.3.1.3. Federally-Qualified Health Center

Michigan has two HRSA funded Health Center Controlled Networks (HCCN); both have ongoing HIT/EHR initiatives. The Michigan Primary Care Association (MPCA) has two current Health Resources
and Service Administration (HRSA) grants for EHR use and adoption. Through their HIT Network project (HRSA H2LIT16865) they have been assisting Federally Qualified Health Centers (FQHCs), FQHC ‘Look-Alikes’, and other community-based providers adopt and use EHRs. MPCA handles the hosting and other technical aspects of implementing an EHR. As part of their HIT Innovation Project (HRSA H2LIT16631), they are bringing technology and continuous quality management together through a point-of-care clinical tool. The goals of the project are to increase the number of chronic disease patients that are monitored and managed, achieve Healthy People 2010 objectives for the patient population, increase data accuracies by eliminating manual entry of data, and increase efficiencies within Health Centers that maximize personnel, revenue, and time spent with patients. Details on all the projects can be found in Appendix E.

2.3.1.4. Veterans Administration and Indian Health Service
Veterans Health Administration (VHA) has 4 medical centers, 13 outpatient clinics, and 5 vet centers in Michigan. It is believed that all are using the VHA’s EHR but there is little to no interaction with state systems or other health care providers. It is hoped that the integration of MiHIN with NwHIN will help improve this information gap.

There are 12 federally recognized tribes in Michigan. There are no Indian Health Services (IHS) facilities in Michigan; however there are 14 tribal health clinics throughout the state. The level of HIT adoption ranges widely between tribes, with all health centers having some level of electronic practice management system but very few with a fully functioning EHR.

2.3.2. EHR Adoption Encouragement
Medicaid has seen the benefits of its providers using HIT in the care of patients and has been actively encouraging adoption for several years.

2.3.2.1. ePrescribing
ePrescribing is one of the most cost-effective HIT options for early adoption. Medicaid has been encouraging e-prescribing since 2008. According to SureScripts’ 2012 “National Progress Report,” Michigan routed 11.3 million prescriptions electronically in 2009; 16.2 million in 2010; and 22.6 million in 2011, making it a national leader in ePrescribing. Those percentages represented 20%, 29%, and 38% of eligible volume in each year, respectively. According to the same study, 33% of Michigan’s physicians routed prescriptions electronically in 2009, with that figure jumping to 71% by year-end 2011. The following initiatives have played key roles in advancing ePrescribing in Michigan.

- **Southeastern Michigan ePrescribing Initiative (SEMI):** SEMI is a purchaser initiative aimed at increasing the adoption of ePrescribing in Southeast Michigan. Begun in 2005, it is sponsored and funded by the local auto industry, Blue Cross Blue Shield of Michigan (BCBSM), Health Alliance Plan, Henry Ford Medical Group, CVS, and others. By early 2012, 7,500 physicians had been enrolled in the program. Since 2005, more than 40 million prescriptions have been submitted electronically, with the average volume surpassing 1 million per month in July 2011. Since the program’s inception, over 6.2 million severe or
moderate drug-to-drug alerts have been sent to physicians, resulting in 1.8 million cancellations or modifications.

- **ePrescribing in Michigan Medicaid**: In 2008, the Michigan Legislature enacted legislation requiring MDCH to develop a three-year strategic plan for the implementation of electronic prescribing within the state’s Medicaid program. The department’s resulting plan focused on two goals: (1) increasing ePrescribing awareness and use in the Medicaid provider community, and (2) developing system capabilities to track and report Medicaid ePrescribing transactions.

2.3.2.2. **ARRA Related Projects**

2.3.2.2.1. **M-CEITA**

The Regional HIT Extension Centers (REC) are focused on assisting priority primary care providers with adopting and meaningfully using EHRs. Medicaid and the MDCH HIT/E office recognized the potential benefits the REC could provide to Medicaid providers and has been involved with Michigan’s REC, the Michigan Center for Effective IT Adoption (M-CEITA), since the beginning. This high level of involvement continues, as both Medicaid and the MDCH HIT Coordinator serve on the M-CEITA executive committee. There is ongoing coordination between the two projects. The Medicaid Incentive Program and M-CEITA have shared speaking engagements at conferences and have participated in several joint educational and outreach sessions throughout the state. M-CEITA presented at all of the HIT forums that Medicaid hosted around the state in April and May of 2010. Medicaid EHR Incentive Program team members have spoken at many of the M-CEITA events in the summer of 2010. Medicaid and M-CEITA worked jointly on informing and educating the health care community on both the incentive programs and meaningful use.

2.3.2.2.2. **Coordination of ARRA Projects**

The three main ARRA-related HIT initiatives, the Medicaid EHR Incentive Program, the Michigan Health Information Network (MiHIN), and Michigan’s regional extension center (M-CEITA), are being closely coordinated. As noted in section 2.4.1., Medicaid was heavily involved in the MiHIN planning workgroups and will have a seat on the MiHIN Shared Services board (Section 2.4.1.1). In order to ensure that all of Michigan’s HIE-HIT projects are working together, a Michigan HIT Coordination workgroup has been established. The workgroup meets monthly and includes the project leadership from the Medicaid EHR Incentive Program, MiHIN, M-CEITA, the Southeast Michigan Beacon Community (SEMBC), the State of Michigan’s internal HIE efforts (SOM HIE), HIT Workforce Development efforts within the State, the Michigan HIT Commission, broadband infrastructure efforts within Michigan, et al. As part of the workgroup’s coordination efforts, many of the projects are partnering on outreach activities.

2.3.3. **Broadband**

Access to reliable, affordable and high-speed Internet access still presents an issue for some of Michigan’s providers. This is primarily a problem for rural providers, but some urban providers have
also reported issues with reliability and affordability. As more professionals and even some smaller hospitals adopt EHRs through the Software as a Service (SaaS) model, a reliable connection is required. Health care providers utilizing a SaaS EHR cannot lose their Internet connection. If lost, they lose all access to their medical records. In the 2010 Medicaid EHR Provider Survey mentioned above, 61.3% of the respondents reported Internet access availability and reliability as a concern when implementing an EHR system, although this concern diminished somewhat in the 2011 survey.

The State of Michigan has been working to coordinate projects to successfully secure funds from the two ARRA Broadband programs. To date, over $180 million ARRA dollars are dedicated to Michigan to expand broadband infrastructure and public computing centers. The infrastructure that is put in place as a result of these investments will enable data to be moved and shared at higher rates of speed between health care providers where bandwidth has been limited in the past, as well as help make it possible for more citizens to monitor health care from within their homes.

The State of Michigan has worked with many partners on a $24 million FCC Rural Health Care Pilot Project. The Project will connect 118 mostly rural health care sites via an affordable fiber connection to help foster the movement of health data to and from their clinics. The ability to reach the most rural clinics will help to improve the health care and reduce the costs of offering specialized care in rural and remote areas of the state. The project is currently in the construction stage.

2.4. Health Information Exchange (HIE)

2.4.1. MiHIN

The Michigan Health Information Network (MiHIN) is the state of Michigan’s initiative to improve health care quality, cost, efficiency, and patient safety through electronic exchange of health information. The MiHIN is a joint effort among MDCH, the Michigan Department of Technology, Management and Budget (MDTMB), and a broad group of stakeholders from across the State of Michigan.

The MiHIN is essential to ensuring that Michigan's health care providers can utilize Electronic Health Records or EHRs in a meaningful way that allows for a patient’s health information to be available when they need it most - at the point of care. The MiHIN is fundamentally the infrastructure that mobilizes existing electronic health information in a manner that allows healthcare providers to access and exchange it regardless of individual technology choices.

The MiHIN Conduit to Care report of 2006 represented the first iteration of a Strategic Plan by establishing a vision of HIE across Michigan that continues to hold true today: reducing the overall cost of care while increasing quality and patient safety.

The MiHIN Strategic Plan, submitted to ONC in spring of 2010, seeks to close the gap between the Conduit to Care report and the guidelines from the State HIE Cooperative Agreement, as well as update Michigan’s plan for statewide HIE that leverages the progress of Qualified Organizations (sub-
state HIEs) in Michigan. The MiHIN Strategic Plan describes the incremental approach for advancing appropriate and secure health information exchange, implements a model that encourages public private partnership, and develops a scalable open technology approach that would complement the activities of the Qualified Organizations. The MiHIN Strategic Plan, the MiHIN Operational Plan, Strategic and Operational Plan Amendment 1.4, and the State of Michigan’s June 8, 2012, ONC-HIE-PIN-002, as submitted to ONC, are available at Appendices F through I of this document and at http://www.michigan.gov/mihin.

To accomplish these goals, a series of evaluations and environmental analyses were undertaken to assess HIE capacity in Michigan that can be leveraged, to identify HIT resources that can be used, and to determine opportunities for collaboration. This information was also used to inform the work of the stakeholders involved in a comprehensive workgroup process that formulated this Strategic Plan. More than 100 stakeholders have been involved with planning and developing the approaches to implementation and evaluation activities by serving on workgroups that are directly aligned with the five domains: governance, finance, technical architecture, business/technical operations, and legal/policy. There was Medicaid representation on the majority of the MiHIN planning work groups. The Director of Medicaid Program Operations and Quality Assurance, an executive steering committee member of the MiHIN Program Office, served as co-chair of the MiHIN Business Operations Work Group and was a voting member of the MiHIN Governance Work Group. The Director of Medicaid Data Management Division was a member of the MiHIN Privacy and Security Work Group and other Medicaid staff were members of the MiHIN Technical Work Group.

These activities were complemented by integration of the MiHIN planning work with Medicaid; Medicare; and other federally funded, state-based programs, particularly public health surveillance and other ARRA programs, including M-CEITA, workforce development initiatives, and broadband mapping and access initiatives.

This approach has resulted in a strategy that uses the State HIE Cooperative Agreement funding in a comprehensive public/private partnership to advance the stakeholder organizations toward obtaining meaningful use.

2.4.1. MiHIN Governance
Michigan’s approach to governance was to create a coordinated governance model that emphasizes public/private partnerships. Toward that end, a coordinated Governance model was developed that uses the existing legislatively mandated Health Information Technology (HIT) Commission to set broad statewide policy initiatives. In addition to leveraging the HIT Commission, a separate not-for-profit entity called the MiHIN Shared Services was created to act as the State Designated Entity. The governing board of this entity consists of stakeholders from the Qualified Organizations (sub-state HIEs), payer organizations, the HIT Commission, and the State of Michigan. The State members are a representative from Michigan Medicaid and a representative from Michigan Public Health.
The MiHIN Shared Services Governance Board is responsible for governing the business and technical operations of the statewide HIE technology infrastructure. It has authority over the shared services, including the financing structures required to enable MiHIN Shared Services to be self-sustaining.

The MiHIN Operations Advisory Committee (MOAC) was formed in June 2012. The MOAC oversees working groups that advise the MiHIN Associate Director on matters related to MiHIN operations and also makes recommendations directly to the MiHIN Board. MDCH, MiHIN, and each Qualified Organization each receive a seat on the Advisory Committee. The MOAC appoints members to working groups, which are comprised of Michigan HIE Model partners and stakeholders (sub-state HIEs/Qualified Organization, MiHIN, MDCH, and DTMB representatives). There are five working groups.

1. **Operations / Production Support Working Group (Ops WG).** The Ops WG is responsible for the timely resolution of issues that impact production and the immediate or near-term matters affecting routine operations. Another major portion of this group’s efforts will be to insure that scheduling new services or functionality is accomplished with the minimum of disruption and maximum coordination among the parties affected. This group will be responsible for determination of the key metrics (recommendations can be submitted by the Use Case Work Group) utilized to document performance of the overall environment.

2. **Integration and Architecture Working Group (IA WG).** The IA WG is responsible for technical and architectural recommendations. It investigates solutions to technical issues and explores alternative architectural options to resolve systemic challenges, establish new functionality or scalability, or mitigate potential threats to operations and environmental integrity. The Security and Privacy Workgroup may request that the IA WG assist them in the design of solutions that enable compliance with policies and procedures or provide analysis of the trade-offs or feasibility required to fulfill such requirements. It is anticipated that this group shall routinely be called upon by the Use Case Workgroup to define the technical specifics of standards that need to be implemented. In addition, the IA WG makes technical or architectural recommendations on the evolution of the MiHIN Health Information Services Cloud architecture to support robust integration among the qualified organizations seeking to adopt Use Cases.

3. **Security & Privacy Working Group (S&P WG).** The S&P WG is responsible for the development of MiHIN’s privacy and security policies and procedures and for keeping them up-to-date with industry best-practices. This incorporates the broad range of topics such as authentication, authorization, access controls, identity management, intrusion detection monitoring, vulnerability assessments, and audits. This group is also charged with aiding the establishment of the necessary operational and environmental processes to support these policies or procedures and the alignment with the evolving regulatory framework that will enforce them. Once the Use Case WG has defined a Use Case or related sub-
components, the S&P WG shall inherit the responsibility for supporting the relevant security and privacy aspects accordingly.

4. Governance, Rules & Dispute Resolution Working Group (Governance WG). The Governance WG resolves impasses, conflicts, and issues, or takes them to the MiHIN Board if necessary and appropriate. It reviews anything that is submitted for the Board’s consideration. This workgroup is responsible for clarifying the scope or charter of the MOAC and its workgroups. It is also charged with the resolution of impasses among workgroups. In the event that a conflict persists, the Governance WG is accountable for documenting the concern and advancing the issue to the MiHIN Board if necessary and appropriate.

5. Use Case Working Group (UC WG). The UC WG is responsible for the definition and authorship of the MiHIN Use Case library. This group shall serve as the focal point for integration of well understood data sharing scenarios as well as incubation efforts, such as demonstration pilots. The UC WG is responsible for distilling the relevant components of each Use Case, including the development of implementation specifications and instructions (implementation roles and responsibilities) for the Ops WG. Each Use Case will incorporate the necessary language to fully describe the associated functionality, limitations on usage, legal content, cost, content standard specifications, transport standard specifications, security requirements or provisioning attributes, privacy restrictions, and overall service level expectations. This group is expected to interact with the other workgroups to ensure overall compliance and to account for the complexities associated with scheduling and support once each Use Case is handed off to Operations for production.

2.4.2. State of Michigan HIE (SOM HIE)

In an effort to facilitate the meaningful use reporting requirements to state public health and Medicaid systems, MDCH, in partnership with MDTMB, is connecting all the state systems that are part of the meaningful use requirements to a State mini-HIE. By bringing all the state “meaningful use” health systems into an HIE environment, all of the systems can leverage the same HIE technology, and providers will have a single gateway to access or report to these systems. The State of Michigan Health Information Exchange (SOM HIE) will allow complete interoperability based on national standards, easily share information within the state in a secure way and leverage technology investments made by other programs and departments. In addition to the two main Medicaid systems, CHAMPS and the Data Warehouse, all of the other state government health related systems would be connected to SOM HIE. The SOM HIE will provide Michigan an efficient, streamlined system architecture for managing the Medicaid program.

2.4.3. Other HIE Activities

The state has been encouraging HIE activities for several years and several HIEs or HIE-like organizations are currently active in Michigan. There are six Michigan Qualified Organizations, one northern Indiana sub-state HIE, and several other regional initiatives that are implementing key
functions including e-prescribing, laboratory ordering and results delivery, prescription-fill status and medication-fill history, clinical-care coordination, and quality reporting.

- **Great Lakes Health Information Exchange (GLHIE):** GLHIE is a coalition of public and private community members, including physicians, health systems, businesses, health plans, and academic institutions from the Clinton, Eaton, and Ingham tri-county area of mid-Michigan. GLHIE has selected Axolotl Corp. of San Jose to deploy its sub-state HIE and has begun implementation with data being exchanged in the initial phase. See [http://www.glhie.org](http://www.glhie.org).

- **Upper Peninsula Health Information Exchange (UPHIE):** UPHIE serves the 319,000 residents of Michigan's Upper Peninsula. Collaborative efforts among the network include sponsorship of the Upper Peninsula Poison Crisis Network, joint purchasing, mobile MRI services, education, publication of the physician directory, the U.P. Medical Library Consortium; the U.P. Teleradiology, Teleconferencing and Telemedicine Networks, and a reference lab network. UPHIE continues to develop the Upper Peninsula–wide sub-state HIE to connect the U.P. hospitals, providing a cost-effective mechanism to access patient information and streamline patient care delivery. See [http://www.uphcn.org](http://www.uphcn.org).

- **Jackson Community Medical Record (JCMR):** JCMR, another sub-state HIE, is a joint venture of Allegiance Health and the Jackson Physicians Alliance. It was formed to improve the quality of patient care through IT and lower the total cost of ownership of an EHR system. JCMR currently connects 140 Jackson county physicians, who represent more than 80,000 patients. See [http://www.jcmr.org](http://www.jcmr.org).

- **Michiana Health Information Network (MHIN):** MHIN is a sub-state HIE that serves more than 600 physicians and 2,500 clinical health care providers in northern Indiana and southern Michigan. MHIN provides secure, single-source access to patient clinical information, and connects health care providers with a clinical data repository, results delivery, clinical messaging, interfaces, and a fully integrated EHR. NOTE: MHIN spans state lines. See [http://www.mhin.net](http://www.mhin.net).

- **MSMS Connect:** MSMS Connect is an electronic portal that was released in January 2009 by the Michigan State Medical Society (MSMS). This convenient, single-sign-on portal is a free benefit to MSMS members that securely connects physicians to patient information and each other for referrals and consultations, as well as to labs, patient registries, and other resources. See [http://www.msms.org](http://www.msms.org).

- **Ingenium (formerly My1HIE):** Based in southeast Michigan, this sub-state HIE enables physicians to share vital patient information and collaborate on patient care with other providers.
Ingenium connects users to multiple clinical applications, including electronic prescribing, patient registry tools, e-labs, document managers, health plans, and more. All of these applications are interconnected and can be accessed with a unique user ID and password from any location with an Internet connection. Currently, 1,000 physicians use Ingenium. See http://www.my1hie.com.

- **Michigan Health Connect (MHC):** A nonprofit corporation founded by Spectrum Health, Trinity Health, Metro Health, Lakeland Health System, and Northern Michigan Regional Health System, this sub-state HIE was founded to advance the delivery and coordination of health care through collaboratively leveraging Medicity's information technology and clinical data exchange platform. Currently the organization connects 54 of the State's 134 medical-surgical hospitals. See http://www.michiganhealthconnect.org.

- **Southeast Michigan HIE (SEMHIE):** SEMHIE is a multi-stakeholder consortium of diverse stakeholders, inclusive of six (6) major health systems, payers, employers, providers, quality organizations and safety net providers. SEMHIE will leverage existing and additional emerging technologies to innovate and improve information process flow for the secure sharing of data across networks within healthcare settings. The goal is to accelerate improvements in the quality and safety of care by using a continuity of care document (CCD) and other standards as a vehicle for the sharing of discrete data elements and values within the healthcare community. See http://semhie.org.

  Additionally, several of Michigan’s health systems and hospitals have made considerable progress in the development of IT systems that form integrated delivery networks.

2.5. **Miscellaneous**

2.5.1. **Other Activities**

There are several other on-going and planned activities that might influence the EHR Incentive Program. These include:

- **Michigan Provider Credentials Center**

In 2008 the Federal Government awarded MDCH a Medicaid Transformation Grant to implement a one-source credentialing service for providers. The first phase of the project was to develop, in collaboration with the Bureau of Health Professionals, a one-source credentialing solution for professional licensing. The second phase of work was to include on-line licensing and renewals for licensing through the Bureau of Health Professionals. A third phase would enhance CHAMPS’ Medicaid provider enrollment functionality. The earliest phases of this project were completed--see Section 2.5.3.6. However, work on subsequent phases was terminated in March 2012.

- **HIPAA 5010/ICD-10**
In January 2009, The United States Department of Health and Human Services enacted the rule for adopting X12 Version 5010 for HIPAA transactions. The compliance date for Version 5010 for all covered entities was January 1, 2012. Michigan Medicaid transitioned its existing X12 Version 4010A1 transactions (837 claims and encounters, 835 remittance, 276/277 claim status request and response, 278 prior authorization request and response, 270/271 eligibility request and response, 834 enrollment, 820 capitated payment, and TA1 acknowledgement) and adopted the new 999 acknowledgement transaction. MDCH was compliant by January 1, 2012.

In addition, the Department of Health and Human Services (HHS) announced in August 2008 that it is transitioning the health care industry to the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) and the International Classification of Diseases, Tenth Revision, Procedural Classification System (ICD-10-PCS) for coding and billing. The implementation was originally set to be done by October 1, 2011. However, the Centers for Medicare and Medicaid Services (CMS) has proposed extending the date of ICD-10-CM into the HIPAA mandated code set to October 1, 2014. This initiative will have a huge impact on Medicaid business operations. In terms of system impacts, CHAMPS must have the capability to accept and process the new structure of the code set. Additionally, Michigan anticipates business rule changes that will be required to facilitate accurate claims adjudication. The degree of specificity of the codes themselves will make CHAMPS a rich source of healthcare data that can be used toward care management and substantiation of meaningful use.

- **Data Warehouse**
  After CHAMPS was implemented, data warehouse activities were also completed so the MDCH could continue to use the data warehouse for comprehensive, complex analyses. The data warehouse interacts with other applications and systems and is an integral component of the MMIS.

  The integration of data within the warehouse provides MDCH the ability to monitor the cost and care associated with a single individual across multiple programs, and has been instrumental in: improving the administration of health care services; conducting advanced data analysis to determine patterns; assessing which programs are most effective; detecting and reducing fraud and abuse; improving and interpreting disease management and epidemiological patterns; and Health Information Exchange.

  Michigan submitted an Advanced Planning Document – Update (APD-U) to its regional CMS office on August 9, 2010, to enhance the State’s Decision Support System (DSS). Under this APD-U, Michigan included fifteen (15) new projects to enhance the DSS related to implementation of new CHAMPS projects, HIPAA 5010, ICD-10, and the Medicaid EHR Incentive Program.

  The implementation of new technology creates opportunities to improve efficiency and reduce costs. Completed Data Warehouse improvements include:
• Analysis of CHAMPS data warehouse usage in order to identify areas for improvement. Solutions were identified, developed, and implemented. For example, queries were rewritten, statistics were added, indexes were modified to align with user access to data, and databases were compressed.

• The Unique Client Identifier (UCI) was replaced with a COTS product, IBM’s Initiate. While the UCI has been reliable and stable over the years, its replacement by a COTS product better enables it to work with HIE initiatives and improves MDCH’s ability to maintain this functionality in the future.

• The Data Warehouse Security form/process was completed using a web-based security application. This significantly shortened the approval/denial processing time and provides a strong audit trail of all approvals and other access changes. There are plans to add additional programs requiring security approvals.

• CHAMPS finalization and certification
Michigan’s new Medicaid Management Information System (MMIS) called CHAMPS is the first completely web-based system of its kind in the U.S., and is revolutionizing Medicaid in Michigan.

Since going live with its major system components in September 2009, CHAMPS has exceeded expectations, handling millions of dollars a day in reimbursements for doctors, dentists, hospitals and nursing homes across the state. The system has not missed a single payment cycle and is expected to process 56 million claims and encounters, totaling $10 billion in payments on an annual basis for both fee-for-service and managed care recipients.

Michigan’s MMIS certification was awarded in August 2011.

2.5.2. Changes to State Laws
There have been no recent state laws or regulations that will affect the implementation of the EHR Incentive Program. There are no foreseen changes to state laws or regulations required to implement the EHR Incentive Program. However, there may be some minor changes required to fully implement MiHIN.

2.5.3. Other HIT-Related Grants
There are a few other HIT-related grants that should be noted.

2.5.3.1. HIE Cooperative Agreement

Through the American Reinvestment and Recovery Act of 2009, the Office of the National Coordinator (ONC) for HIT allocated $14,993,085 for the MiHIN project to facilitate the creation of a statewide technical infrastructure supporting health information exchange (HIE) services. In February of 2010, Michigan entered into a cooperative agreement for State Health Information Exchange with the ONC.

In April of 2010, the MiHIN Shared Services Strategic and Operational Plan were completed. The strategic plan identifies the vision, goals, objectives, and strategies for addressing statewide health
information exchange (HIE). The strategies outlined in the plan are designed to execute on the vision of developing an open architecture that complements the progress made by the Qualified Organizations (sub-state HIEs), and leverage statewide shared services to accelerate health information exchange.

The MiHIN Shared Services Operational Plan will serve as the State of Michigan’s roadmap for statewide health information exchange. The plan outlines the activities, timelines, and financial aspects of implementing the strategic plan over the next four years.

2.5.3.2. CDC-Enhancing the Interoperability of EHR and Immunization Information Systems (ISS)

In September of 2010, the CDC awarded the Michigan Department of Community Health $1,050,000 to support the development of a data exchange environment between the Michigan Care Improvement Registry (MCIR) and EHRs. MCIR is an immunization information system developed by the State of Michigan to assist immunization providers with increasing immunization levels in Michigan. The funding for this two year project provided the resources needed to enhance the MCIR’s electronic data exchange capability. The project will be completed by the end of 2012.

MDCH Division of Immunization partnered with the Michigan Health Information Network (MiHIN) to create an ONC-endorsed, standards-based test environment for certified EHR vendors supporting meaningful use. MCIR also implemented a quality assurance certification process for EHR vendors messaging with the registry. These efforts resulted in an increase in the number of practice-based EHR interfaces with the registry, an increase in the number of immunization transactions reported to the MCIR, and an improvement in the timeliness of immunization reporting.

2.5.3.3. CDC - Enhanced Electronic Laboratory Data Exchange

In September of 2010, the Michigan Department of Community Health Bureau of Laboratories entered into a cooperative agreement of $587,680 with the Centers for Disease Control and Prevention (CDC) to enhance the electronic data exchange between health partners and public health. Funding for the two-year project provided the resources needed to enhance the State’s laboratory information management system, STARLIMS, and the Michigan Disease Surveillance System (MDSS).

STARLIMS provides specimen tracking and management and real-time reporting of all Michigan reportable diseases and influenza laboratory reports to local, state, and federal public health officials to control and prevent illness, disease, and deaths. STARLIMS flags reportable disease conditions from all three of Michigan’s regional laboratories, located in local health departments throughout the state, plus the State Laboratory in Lansing and its branch in Houghton and transmits a regular ongoing flow of electronic messages to the state’s disease surveillance system (MDSS).

MDSS is the State of Michigan’s system used to identify and track emerging infectious diseases and potential bioterrorism attacks. It allows for the investigation of outbreaks and the monitoring of public health trends at a local, regional and state level. MDSS also enables physicians and clinical
laboratories to electronically report the occurrence or suspected occurrence of disease, conditions or infection required by the Michigan Communicable Disease Reporting Rule.

STARLIMS will implement the nationally recognized standards of the Public Health Laboratory Interoperability Project (PHILIP) enabling bi-directional communication between the CDC and other local and state agencies. MDSS will be enhanced to allow for an increase in the number of laboratories and electronic health record (EHR) systems reporting through the current process and for the transition of reporting through the Michigan Health Information Network (MiHIN) infrastructure.

2.5.3.4. Southeast Michigan Beacon Community Collaborative

The Southeast Michigan Beacon Community (SEMC) is one of seventeen communities in the United States established by The Office of the National Coordinator for Health Information Technology (ONC). SEMC’s mission is to use Health Information Technology (HIT) and Health Information Exchange (HIE) to enable patient-centered care and novel clinical intervention strategies that promote improved diabetes care and self-management.

SEMC initiatives are intended to encourage the meaningful use of electronic health records (EHRs) and other technology, deliver important information at the point of care through HIEs, and ultimately, reduce the cost of health care while increasing the quality of care and improving healthcare outcomes. SEMC’s activities set forth a scalable foundation for care and management of other disease types and populations in the future. SEMC is governed by a multi-stakeholder board, including those who pay for care (e.g., MDCH has two seats, one an ex-officio, and CMS has one seat, also an ex-officio), those who purchase care (e.g., automotive firms, Chambers of Commerce), those who provide care (e.g., all major health systems, physician representatives), and those who receive care (e.g., consumer advocacy groups, Michigan’s Peer Review Organization).

SEMC is working with approximately 50 practices, including all Federally Qualified Health Centers and other free and private hospital-affiliated clinics, in Wayne County, Michigan, which includes the City of Detroit and surrounding areas. Work includes workflow assessment and redesign; data assessment and targeted quality improvement, including both electronic and non-electronic clinical decision support deployment; assistance with meaningful use; connecting existing practice EHRs to health information exchange efforts (BeaconLink2Health) and other technology tools (including a consumer-facing tool using cell phones); augmenting care support through a community health worker initiative; and other interventions. SEMC also has an existing emergency department (ED) intervention in a number of health system locations connecting pre-diabetics and patients diagnosed with diabetes (through HbA1c screening at the ED) with regular care and other community resources.

HIE and community-level data repository efforts are being deployed through a multi-stakeholder effort. As efforts are deployed now and into the future, SEMC aims to bring together the meaningful use of existing EHR technology and new care management tools at the point of care, along with relevant data through the HIE (augmenting existing data sources at the point of care.) SEMC’s work on the technical side is wrapped in a focus of clinical transformation and care integration toward care and health improvement. Making programs like Medicaid and Medicare (which constitute a high percentage of the population SEMC serves) work requires a strong focus on care integration, managing medical costs and working closely with providers, which is what SEMC aims to do moving forward. SEMC is driving this work through initiatives encouraging the adoption and use of EHR technology augmented through HIE.

2.5.3.5. Medicaid Transformation Grant – Vital Records

2006-7 CMS Medicaid Transformation Grant Award - $3,929,317

The current database (BRS) has been developed to contain birth data for Michigan births, to issue official certified copies of vital records, to enable official amendments to the recorded data, and to generally serve as the official source of legal “prima facie” information on the facts of each birth. The database currently contains full or partial records on nearly 9 million Michigan live births. This large database has been constructed by uploading legacy data that had been captured over a nearly 50-year
period under 13 different data file formats and four distinctly different processing systems. This significant effort to standardize these data into a single and uniform database has been very successful, but has important limits. These limits do affect the value of the data and the ability to rely on the database to make appropriate administrative decisions on Medicaid cases.

The major goals of this project are to address the following database issues:

- Birth record data prior to 1989 contains only limited “index” information on the birth. This can significantly reduce the likelihood of a case worker positively locating a birth record.
- Records have been identified that are missing within the database. This means an unsuccessful search of the file is not conclusive evidence that the birth facts supplied are incorrect.
- The birth records within the files are not all properly linked to corresponding death record data.
- The current birth data interface screens were designed prior to the significant upgrades to the BRS, and were not originally designed to be used by Medicaid staff. This upgrade will enhance the ability of a case worker to perform citizenship validation online and avoid unnecessary effort and expense by the recipient or applicant.

The project had four specific outcomes and objectives relative to database improvement:

1. **Improve DHS Citizenship Validation Capability** – Revising the DHS Medicaid eligibility intake worker interface to BRS to improve birth fact validation from approximately 70% to 90-95%.
2. **Improve the reliability of Medicaid BRS search results** – Identifying and resolving missing BRS birth data will raise DHS online case verification rates and ensure reliable search results.
3. **Link Death Records to Birth Records** – Provide Medicaid intake and quality improvement staff a source of death information to identify applicants using false identity.
4. **Upgrade Interface Screens** – Increase the ability of Medicaid staff to properly locate and confirm birth facts in BRS.

This project has been completed.

**2.5.3.6. Medicaid Transformation Grant – One Source Credentialing**

2006-7 CMS Medicaid Transformation Grant Award: $5,208,759

The focus of this project was to utilize available technology to optimize capture, processing, and management of health care provider data (credentials, licenses, sanctions, disciplinary actions). This provided administrative simplifications by reducing processing time and costs associated with redundancies, provided the ability to electronically share health care provider information, and increased the overall quality of the state healthcare provider pool through more accurate assessment of healthcare provider eligibility using continuously monitored information.

The project targeted manual, repetitive, redundancies involving the capture, processing, management, and sharing of Michigan healthcare provider data. The concept began with the understanding that health care providers are, on average, credentialed by 12 different entities, all of
which used unique and often paper-based application forms; requested similar or the same information; follows manual, paper-based processes; and provided limited to no ability to quickly and efficiently share information.

**The OneSource Credentialing Project and Sub-Components**

The Credentialing Service: Michigan Provider Credentials Center (MiPCC)

This vendor-based solution (Medversant Technologies LLC) offered an off-the-shelf service that utilizes technology and standard practices to manage health care provider data. The service is NCQA certified as a CVO, URAC certified, and adheres to The Joint Commission guidelines. The service utilizes existing licensing data captured by the Bureau of Health Professions database. The initial pilot included Fee-for-Service Medicaid healthcare providers.

**Subcomponent: Disciplinary Documents File Conversion**

This subcomponent was designed to establish and implement processes and procedures to share public health care provider disciplinary documentation electronically to state agencies (through IRMA) and to the public (via the web). The scope included:

**Phase 1:** Conversion of historical documents (FY2000 to present) from paper to electronic form; and development and implementation of ongoing processes and procedures for conversion. (Completed and Closed)

**Phase 2:** Posting public disciplinary documents to the website: Verify a License

This was designed to reduce costs associated with manual, labor intensive processing of Freedom of Information Act (FOIA) requests as well as reduce the time to surface (find and/or share) this information both internally and to the public. (Completed and Closed)

**Subcomponent: Michigan Health Care Provider Records Enhancement**

This subcomponent was designed to ensure that existing health care provider records in the licensing database contain all the required data, this component included: 1) identification of essential data elements; 2) analysis of existing records/data for accuracy and completeness; and 3) update of health care provider records as necessary. (Completed and Closed)

This project has been completed.
3. Michigan’s “To-Be” HIT Landscape

In general, Michigan has always been an early adopter of technology to improve health care, simplify health administration and monitor public health. MCIR is a state-of-the-art registry that has expanded to include tracking health information beyond immunizations and has received numerous awards and national recognition. Michigan was one of the first states to develop and utilize a data warehouse to consolidate disparate data sources into one system and use that system to assist program effectiveness and quality-of-care. Michigan also has some of the most advanced public health surveillance systems in the nation and uses them to monitor and track all public health issues statewide. Building on this history will be vital to moving Michigan forward and achieving the state’s HIT/E goals.

3.1. HIT/E Initiatives

Medicaid will focus on two administrative initiatives and four HIT/E initiatives. The administrative initiatives are the pending ICD-10 conversion and the Affordable Care Act related-initiatives. Although the ACA-related initiatives are not directly related to this plan, they will have an impact on the plan, as all have some technology components, will require changes to Medicaid systems, and will require substantial staff resources. The four HIT/E initiatives are administration of the Medicaid EHR Incentive Program including encouraging the adoption of EHRs, increasing the interoperability of state systems to support meaningful use and HIE, encouraging and facilitating HIE in Michigan, and engaging the consumer.

Michigan’s MMIS, CHAMPS, is the state’s second largest health insurance entity, providing health care to one in five Michiganders. Michigan envisions CHAMPS becoming fully integrated with all other Michigan community health care systems. Michigan consider these other systems – immunizations, labs, disease surveillance, syndromic surveillance, the Medicaid EHR Incentive Program, the associated REC efforts, the Beacon initiative, the State’s HIE infrastructure, et al. – to be extensions of CHAMPS. As such, all work on Michigan’s MMIS and these other systems, including the Medicaid EHR Incentive Program, is framed and guided by the goal of developing a totally interoperable, fully integrated statewide community health system, with CHAMPS at its core. This vision will guide all work to be funded under Michigan’s September 2012 HIE IAPD and set up CHAMPS to manage Medicaid beyond HITECH.

3.1.1. Encouraging the Adoption of EHRs

The adoption and meaningful use of EHRs across all care settings has the potential to achieve national improvements in the quality and value of health care through financial incentives for providers. It will be vital to encourage all eligible providers to adopt EHRs and utilize them in a way that will improve care. Michigan will encourage providers to adopt EHRs in three ways.
First, the Medicaid EHR Incentive Program will provide financial incentives to providers. It is the state’s intention to make information about the incentive program available to all providers through a wide-reaching outreach program. This outreach program will include information on www.MichiganHealthIT.org, mailings to providers, and live and web-based training on Medicaid EHR Incentive Program registration. Additionally, the registration process for the Medicaid EHR Incentive Program will be as streamlined as possible to lessen the burden on the providers. Registration will occur through the CHAMPS system that many provider practices access on a daily basis.

The second method to encourage adoption is to provide general information and education to all providers in Michigan on the benefits of an EHR and how it can improve all aspects of their practice. This will include continued updates on www.MichiganHealthIT.org, speaking at meetings and conferences, informational mailings and coordinated efforts with M-CEITA and other provider organizations.

Lastly, the state will improve several key systems to ensure the data in them is available to providers at the point of care. This will include informing the providers what data is available, the benefits to care that can be realized through access, and how to access the different sources. At the same time, these systems will be enhanced to improve secure access to the systems and interoperability with EHRs. More details on these improvements are below in section 3.2.

The last two efforts started as informational and educational and have migrated to a more direct support role. Once Medicaid providers are aware of the benefits of EHRs, they will need additional support and technical assistance around adoption and meaningful use of certified EHR technology. All of these efforts will be closely coordinated with M-CEITA and MiHIN, as well as key health care stakeholders from across the state.

M-CEITA was originally subsidized by ONC to deliver direct assistance to 3,724 Priority Primary Care Providers (PPCPs) in Michigan. As of mid-2012, M-CEITA was actually able to recruit 4,000 PPCPs, some of whom have been wait-listed. The M-CEITA effort has been deemed successful, and the Michigan Department of Community Health hopes to utilize this momentum and expertise to expand M-CEITA’s services to 600 specialists eligible for the Medicaid EHR Incentive Program. This will increase and accelerate specialist participation in the Incentive Program.

3.1.2. Increasing the Interoperability of State Systems to Support Meaningful Use & HIE

Many of the state’s systems will need improvements and enhancements before they can support both meaningful use and HIE. Michigan’s approach is to establish a mini-HIE for all state systems to connect to. This State of Michigan HIE (SOM HIE) will then connect to MiHIN and through that to both NwHIN and the sub-state HIEs that are being developed. Building HIE technology internal to the state will ensure that all state systems are interoperable using the national standards, will enable the State to easily share information among systems in a secure way, will leverage technology
investments made by other programs and departments, and will make state systems securely available to providers to assist in meeting the meaningful use requirements. SOM HIE will also be vital in tracking and verifying providers’ meaningful use status.

In addition to the two main Medicaid systems, CHAMPS and the Data Warehouse, all of the other state government health-related systems will be connected to SOM HIE. These state systems are referred to as State of Michigan Systems (SOM Systems), and the systems that are included in round-one integration with SOM HIE are:

- **Medicaid Systems**
  - CHAMPS (MMIS)
  - Data Warehouse

- **Public Health Systems**
  - MCIR (MI Care Improvement Registry)
  - MDSS (MI Disease Surveillance System)
  - MSSS (MI Syndromic Surveillance System)
  - STARLIMS (State Labs Laboratory Information Management System)
  - Vital Records (birth and death)
  - Cancer registry
  - Chronic disease registry

- **Administrative Systems**
  - MDCH Bureau of Health Professions licensing database

Figure 9 below is an early draft conceptual design of how SOM HIE would streamline interoperability and interface with MiHIN. More detail is contained in Section 3.2.5.
3.1.3. Encouraging and Facilitating HIE in Michigan

As one of the largest payers and sources of health information in the state, Medicaid will take a very active role in encouraging and facilitating HIE activities in Michigan. Medicaid clearly sees the benefits to wide-spread adoption of HIE by the health care professionals who serve Medicaid beneficiaries. Medicaid is engaged with MiHIN at the state-wide level and the sub-state HIEs. Medicaid has a seat on the MiHIN governing body. Federal funding and provider, payer, and other contributions have established and enhanced HIE functionality in Michigan. In a future HIT I-APD, Michigan will seek funds to support these activities. These funds will be used by the MiHIN Governing Board, under the supervision of Medicaid, to establish and enhance HIE activities that would directly benefit Medicaid beneficiaries and providers.

3.1.4. Engaging the Consumer

Stage 2 of meaningful use requires providers and consumers to interact electronically. Therefore, CMS and the ONC want to “engage the consumer” in their own health care and in health
information technology. But the health IT community still lacks consensus on how to do it. With CMS funding, Michigan proposes to take a three-pronged approach to engaging the consumer:

- Hiring a full-time professional to become a consumer engagement expert who will research and enact plans that encourage consumers to engage in their own health care, especially through health IT
- Conducting a statewide survey to learn about Michiganders’ engagement in their own health care and knowledge and understanding of HIT
- Establishing a very thin core directory service that will enable patients to provide information on emergency contacts, the location of their personal health information, where such information should be sent, the location of their advanced directive or living will, the identity of providers to automatically notify, etc.

3.1.4.1. Consumer Engagement Expert

Michigan’s consumer engagement expert will be a full-time, statewide resource. The expert will participate in and collaborate with national efforts to study approaches to consumer engagement and engage Michigan stakeholders in plans to advance such efforts within Michigan. An example of national efforts is the “Consumer Consortium on eHealth 2012 Action Plan” and the “Consumer Consortium on eHealth Engagement Summit” held in Washington, DC, on July 16, 2012. The consumer engagement expert will research, network and collaborate, develop a project plan, educate, promote, launch initiatives as appropriate, evaluate and report, and, to the extent possible, take a leadership role in consumer engagement within the State of Michigan.

3.1.4.2. Statewide Survey

A statewide survey would be conducted under the supervision of the Statewide Consumer Engagement Expert. The purpose of the survey would be to inform the development of an appropriate consumer engagement strategy, the planning and conduct of which are the Expert’s raison d’être and mission.

The statewide survey would interview approximately 2,500 adults, which would provide statistically significant samples in each of the state’s nine (9) medical trading areas (MTAs). Smaller—and less expensive—sample sizes were considered, but they would not produce the granularity of analytical results that may prove particularly useful, e.g., regional comparisons and comparisons by race and socioeconomic status. Regional comparisons are particularly important in Michigan, which runs the gamut from highly urban Detroit to the extremely rural Upper Peninsula.

The survey will serve four purposes: (1) to determine Michigan’s level of consumer engagement in health IT, statewide and regionally, by various demographic cuts; (2) to determine Michiganders’ awareness of specific health IT issues such as privacy and security, as well as positive, healthy behaviors
(e.g., those espoused in The Michigan Health and Wellness 4 x 4 Plan\textsuperscript{5}), again statewide and regionally; (3) to gauge Michiganders’ engagement with their personal health care and electronic health records, again statewide and regionally; and (4) to inform the development of an appropriate, statewide (and perhaps regional) consumer engagement strategy.

3.1.4.3. Mi-Way Consumer Directory

In order for the true value of consumer engagement to be achieved, consumers must have access to their semantically coded data, and they have to be able to trust that health care providers and other stakeholders will honor their individual preferences. Currently, there is no consistent or predictable place where consumers can state their preferences or participate in an electronic dialog regarding their health. Equally challenging is that providers and other stakeholders have no identified location where they can reliably query to retrieve consumer preferences. A statewide solution to these voids will parallel the State’s plans to create a state-level Master Person Index (MPI) and a state-level Health Provider Directory (HPD).

The State of Michigan, working with the Michigan Health Information Network (MiHIN) Shared Services as the contractor, proposes to establish a very thin core directory service that will enable patients to state their preferences for the following: emergency contact information; the primary location(s) where their personal health information is stored; the location(s) where they want copies of their coded medical information sent; the location of their advanced directive or living will; the identity of their profile editor (custodian); the identity of providers to automatically notify; preferences for communication methods regarding breach notification; and opt-out preferences related to non-treatment payment or aggregation of health care operations data (such as Accountable Care Organization (ACO) participation or quality analysis research/reports). The possibility of using the Mi-Way Consumer Directory as a mechanism for patient expression of HIE opt-in or opt-out decisions will also be explored.

SOM HIE will leverage MiHIN’s legal liability infrastructure and growing operational mechanisms. The Mi-Way patient directory would link with and parallel the State’s MPI and HPD. It would also exploit the legal and monetization framework developed to address participants’ liability and service level expectations. To evaluate the Mi-Way Consumer Directory as an accelerant for consumer engagement, Michigan proposes to conduct a State of Michigan-MiHIN pilot to establish the Directory in a way that allows Medicaid patients and a select set of Medicaid providers, first responders, living will registries, and other stakeholders to participate.

\textsuperscript{5} See http://www.michigan.gov/documents/healthymichigan/Michigan_Health_Wellness_4x4_Plan_387870_7.pdf
and Medicaid HMOs or Pioneer ACOs to validate the utility of such a directory service. The final technical component would be establishment of a Continuity of Care Document (CCD) gateway as a standardized service for receiving and routing messages. The gateway and Mi-Way Consumer Directory would make it easier for providers or data publishers to transmit CCDs to the consumers’ preferred location(s). Working in conjunction with the proposed statewide survey on consumer engagement, the Mi-Way Consumer Directory would help inform the development of the State’s consumer engagement strategy.

3.2. Future State IT System Architecture

3.2.1. Changes to CHAMPS

Managed care (MC) providers are not currently fully enrolled in CHAMPS; only Fee-For-Service (FFS) providers are currently required to complete the full enrollment process. However, many of the MC providers do have some limited information pre-populated in CHAMPS from a feed provided by the Managed Care Organizations (MCO). Non-FFS providers who wish to participate in the EHR Incentive Program have to complete an additional provider registration step before completing the EHR Incentive Program registration and attestation. This provider registration step closely follows the existing FFS provider enrollment process. This was done for three reasons. First, the provider demographic information items required for Medicaid EHR Incentive Program registration are almost identical to the demographic information items required for the FFS provider enrollment process, and this allowed Michigan to reuse and leverage the extensive development that went into the FFS provider enrollment subsystem in CHAMPS. Secondly, the FFS provider enrollment subsystem in CHAMPS already automatically does all of the provider verifications and good-standing steps that are required by the Incentive Program, and, reusing this sub-system was the easiest approach to accomplish this. Lastly, by collecting the same information that is required for an FFS provider, if a non-FFS provider wants to enroll as a FFS provider, it will be easy to accommodate. That being said, non-FFS providers (such as an MC provider) are not required to become FFS to participate in the Medicaid EHR Incentive Program. These providers are flagged in CHAMPS with an EHR-only indicator that prevents any FFS claims being paid to non-FFS providers. Michigan is expecting several hundred non-FFS providers to participate in the Incentive Program. It is not clear how many will elect to become FFS providers or remain flagged as EHR-only. Completing either application only takes about 10 to 15 minutes. Once completed and submitted, it takes less than 30 days for approval or denial. Providers will not be able to enter the Incentive Program registration and attestation modules until they are approved.
Changes to CHAMPS will continue to be made to implement the Medicaid EHR Incentive Program; see Section 3.4.1 below.

3.2.2. Changes to Data Warehouse

The Data Warehouse is a vital system for most Medicaid operations and will continue to be improved and enhanced. MDCH has started the process of replacing the UCI, its current, primary method of integrating data sets (from different sources) within the data warehouse, with a “Master Person Index” (MPI) that will be able to integrate data scattered across various State systems. The MPI is based on IBM’s Initiate Master Data Services software solution. Initiate uses an algorithmic process to match records contained in different systems (“derived relationship”) and then establishes a permanent link between those records. Relationships may also be declared. The algorithmic process optimizes data for statistical comparisons, finds all of the potential matches, scores matches using probabilistic statistics, and then establishes matches using custom threshold settings. IBM Initiate maintains privacy and security, enables trusted and un-trusted data to work in tandem, and significantly improves data quality. The keys to successful conversion to the MPI will be data governance—establishing policies and matching thresholds—and ongoing, bidirectional data stewardship.

In addition to the MPI replacement, and as part of the SOM HIE implementation, the data warehouse will be mined for data to create a new Continuity of Care Document (CCD) based on the HL7 standards. This CCD will combine all the items known to the state about a patient in a single, easy-to-use and standard-based document that can be shared with EHRs and HIEs.

The Data Warehouse’s architecture will be enhanced to align with MITA by developing secure data exchanges with other State systems to promote efficient and effective data integration and sharing. The intention is to improve health care outcomes for Medicaid beneficiaries. These data exchanges will advance Michigan’s HIE initiatives.

The data warehouse will also be expanded to include data needed to support the Medicaid EHR Incentive Program and HIE.

3.2.3. MCIR (Michigan Care Improvement Registry)

FY12 saw the implementation of the VXU HL7 message Use Case. Providers are submitting messages via a Qualified Organization (sub-state HIE) or through a Single-Authentication direct connection that was built as a stopgap measure to enable the achievement of MU. In FY13 the Single-Authentication route will be discontinued, and providers will have to use a sub-state HIE or adopt Mutual Authentication. During FY13, the MCIR system will be integrated with the Master Person Index (Initiate product) as MDCH’s first real-time system, and the Query Forecast/History Use Case will be planned and implemented. It is anticipated that this Use Case has dependencies with regard to the implementation of the Provider Index/Health Provider Directory (PI/HPD). Modifications to the VXU may also be needed in order to receive BMI (Body Mass Index) information directly from EHRs. Audit Logging is also planned during the next two years. Risk mitigation efforts will focus on establishing separate development, test, and production environments; addressing hardware, software, and platform end-of-life issues; and high
availability and disaster recovery. MCIR’s goal is to begin using DIRECT Messaging by FY14 to receive immunization messages from out-of-state providers (e.g., those in IN, OH, and WI, which share physical borders with the state) who serve Michigan residents.

3.2.4. **MDSS (Michigan Disease Surveillance System)**
In FY13, the transfer of received HL7 messages from a staging area to the MDSS system will be automated. Additionally, Simple Object Access Protocol (SOAP) will be used to migrate PHINMS (Public Health Information Network Messaging System) systems to SOM HIE. Integration with the XDS repository is also being considered. Risk mitigation efforts will focus on addressing hardware, software, and platform end-of-life issues; high availability; and disaster recovery.

3.2.5. **MSSS (Michigan Syndromic Surveillance System)**
In FY13, the Use Case for receipt and process of incoming HL7 messages by MSSS will be implemented. Syndromic reporting is currently done by hospitals, but MU will also require that HL7 messages be received from professional office settings. Audit Logging and integration with the PI/HPD are also planned during the next two years. Risk mitigation efforts will focus on addressing hardware, software, and platform end-of-life issues; high availability; and disaster recovery.

3.2.6. **STARLIMS (State Labs Laboratory Information Management System)**
In 2012 work began to identify the model and system changes needed to allow State Labs to send lab results via HL7 messaging. It is anticipated that the Lab Order Use Case has dependencies with regard to the implementation of the Provider Index/Health Provider Directory (PI/HPD), as a lab order received from a single source may be distributed to multiple providers as well as the CDC and/or MDSS (disease surveillance). Audit Logging and integration with the XDS repository and MPI are also planned during the next two years. Risk mitigation efforts will focus on establishing separate test and production environments; addressing hardware, software, and platform end-of-life issues; and high availability and disaster recovery.

3.2.7. **Vital Records**
To enhance the MPI and PI/HPD functionality, the integration of the birth and death records from the MDCH Vital Records unit is planned for FY13. Vital Records may be the first system to test the integration with the Messaging Enterprise Service Bus Use Case.

3.2.8. **Cancer Registry**
Planning for receipt of HL7 messages by the Cancer Registry is scheduled for FY13. Cancer Registry is another candidate for the integration with the Messaging Enterprise Service Bus Use Case. Audit Logging and integration with the MPI and PI/HPD are also planned during the next two years.
3.2.9. Chronic Disease Registry

This registry provides a centralized repository for capturing and storing data related to chronic diseases (e.g., birth defects, dementia, and cardiac). This data will be used for HIT-related analysis and integrated with other data sets to create a “big picture” understanding of factors that may be impacting individuals with specific diseases. The data will also be used to identify interventions that may improve outcomes of individuals with chronic diseases and others in the same household. Requirements gathering is planned for FY13 and implementation/development work for FY14.

3.2.10. Electronic Death Registration System (EDRS)

The Michigan Vital Records office holds records of deaths within Michigan dating back to 1867. Heretofore, the only way to record a death was to complete a paper document. Recently, Michigan Vital Records launched a new, web-based application, the Electronic Death Registration System (EDRS). The EDRS system was built to decrease the time it takes for a death record to be completed, decrease the error rate on death records, and enable the State to cross-reference individuals in multiple state programs (e.g., Medicaid) to more quickly eliminate the overpayment of benefits. Now that EDRS has been launched, Michigan plans to roll it out to each of the State’s 83 counties. Funeral Directors, Medical Certifiers, Medical Examiners, and Local Registrars will be taught how to complete death records on-line.

3.2.11. Conversion of Systems to ICD-10

The U.S. Department of Health and Human Services (HHS) has ruled that all HIPAA-covered entities must convert their health IT systems to accept both ICD-9 (9th Revision) and ICD-10 codes by HHS’ proposed deadline of October 1, 2014. As a result, the Michigan Department of Community Health (MDCH) and the Michigan Department of Technology, Management, and Budget (MDTMB) are required to (1) review all of MDCH’s health IT systems to determine the impact of the conversion to ICD-10 and then (2) actually revise those systems to enable them to accept ICD-10 codes. As information flows from EHRs via health information exchange to SOM HIE and the State’s community health systems, those systems must be able to accept and understand the data (e.g., ICD-10 diagnostic and procedure codes) that is being submitted.

3.2.12. Establishment of SOM HIE

The State of Michigan Health Information Exchange, or SOM HIE, will continue to add MDCH community health systems and allow connectivity with non-state systems. In effect, it will function as the State’s internal HIE, which will enhance the interoperability of the Medicaid Enterprise. SOM HIE incorporates all national HIE standards, as outlined by the ONC, to insure that it is interoperable with certified EHRs and other HIT systems. SOM HIE connects to MiHIN using these same standards. MiHIN, in turn, connects to Qualified Organizations (sub-state HIEs) and providers and ultimately NwHIN.

SOM HIE is operated by the Michigan Department of Technology, Management and Budget (MDTMB). MDTMB works closely with MDCH and Medicaid to insure that SOM HIE meets the needs of the various systems and State departments. SOM HIE is housed in the State’s data centers with
appropriate security, both physical and network, and redundancy to ensure secure and continual operations.

In FY11 and FY12, MDCH developed the initial HIE plans; created a use case template; identified the highest-value use cases; and incorporated national standards into SOM HIE’s Enterprise Architecture. Implementation work focused on two areas: Messaging Service and Security Service.

- **Messaging Service.** The State validated the design of a messaging backbone that would enable machine-to-machine, automated, HL7 messaging (industry standard for HIE). Work included selection of an appropriate integration engine (Orion Rhapsody) and design of an always-on, robust service platform. The message pathway/flow from external sources was designed, implemented, configured, and tested. The internal route for the distribution of HL7 messages to end point systems was also designed.

- **Security Services.** Special attention was paid to the security design for external transport, resulting in a Mutual Authentication model relying on industry standard X.509 certificate methodologies. A secure SOM HIE-to-MiHIN VPN connection will be implemented during 4Q FY12. Internal message handling, routing, queuing, and disposition solutions were designed from the ground up to adhere to federal guidelines, industry best practices, and relevant state rules. The review and improvement of security measures throughout the solution design is a standing task and subject to ongoing scrutiny and enhancement.

The following work on SOM HIE infrastructure is planned for FY13 and FY14.

**3.2.12.1. XDS (Cross-Enterprise Document Store) Integration**
The State, as a top-level HIE entity operating in conjunction with MiHIN Shared Services, will need to design, implement, and operate an approved XDS repository. While MiHIN will provide the XDS registry service and a Record Locator Service (RLS), it is only allowed to transport data, not store it. The State will house the XDS repository that stores information on queries of State systems. Along with MiHIN and Michigan’s sub-states, the State will become part of a federated community of XDS repositories. Product selection, planning, and acquisition will comprise the bulk of the activities in this phase.

**3.2.12.2. Auditing/Logging**
The State will focus on identifying the infrastructure and software solutions necessary to meet the Audit Trail and Node Authentication (ATNA) requirements, ensuring that all operations conform to state and federal guidelines and laws. ATNA relies on the existence of an XDS repository.

**3.2.12.3. Master Person Index (MPI) Integration**
Existing health information systems in Michigan rely on a variety of legacy identification solutions, with little coordinated exchange between systems, and each requiring a custom set of de-duplication and maintenance routines. The common adoption of a single Master Person Index and the use of automated, machine-to-machine transactions for identity-matching and routine functions will allow MDCH to start down a path of greater efficiency, fewer errors, faster response times for codified transactions, and enhanced detection and reduction of
fraud. The MPI has been “stood up” with data from multiple source systems; however, that data has to be “worked” by the Data Stewards to identify the primary record. Now that a governance structure has been established and the primary records identified, over the next two years existing systems will be integrated and critical use cases will be implemented using the new MPI. In FY13, the State Courts system data and Third Party payer data will be added to the MPI. The latter will enhance Michigan Medicaid’s efforts to identify Third Party liability. Also in FY13, efforts will begin to include household information in the MPI. MPI risk mitigation efforts will focus on high availability and disaster recovery.

3.2.12.4. Provider Index/Health Provider Directory (PI/HPD) Integration
The approved scope of work for MiHIN Shared Services includes standing up and operating a Provider Index (a.k.a. Health Provider Directory – HPD) for the entire Michigan HIE community. The State will integrate the Provider Index with relevant systems to augment the PI, reduce errors, improve efficiency, and facilitate accurate message exchange between health care entities throughout Michigan. Where possible, common interfaces will be designed and deployed to achieve the greatest economies of scale. As a contributor to the MiHIN Shared Services model, the State will be involved in the design of the PI, design of its operational rules and procedures, and keeping the health care provider information current.

3.2.12.5. Messaging Service - Enterprise Service Bus (ESB)
In order to facilitate the rapid integration of HIE across disparate systems within MDCH and across other State government departments (and thereby help manage the Medicaid and HIE programs), an ESB will be used. An ESB allows for rapid interface development. Planning, development, and deployment of an ESB are scheduled for FY13.

3.2.12.6. Security Services
As stated earlier, the review and improvement of security measures throughout the solution design is a standing task and subject to ongoing scrutiny and enhancement. Migration of single authentication providers to mutual authentication is planned for those not yet able to join an active Qualified Organization (sub-state HIE). As the MPI and PI/HPD are implemented and integrated into the existing state systems, security of data flow will be a major concern. Three major security service projects are planned.

3.2.12.6.1. Oracle Security Solution
In addition to providing the tools needed to meet audit requirements, the purchase of this solution will enable the following:

- Encryption of database data that is “at rest”
- Masking of confidential/sensitive data so that it will be de-identified in all environments except when it is in production
- Implementation of data logging and monitoring that will enable tracking of all data access
3.2.12.6.2. Identity Management (IDM)

Identity management is the foundation for a number of other critical infrastructure operations. In particular, the efficient operation of the MPI and PI/HPD will depend on robust identity management. The Michigan HIE community is aggressively pursuing the potential of a federated identity management solution to obtain economies of scale, incorporate industry best practices, and achieve increased efficiency through distributed identity proving and maintenance. The State’s goal is to employ a single enterprise system to be used by the MiHIN community and by state systems requiring secure access and authentication. There are several benefits to this approach:

- The ability to establish and manage user identity (both internal to the State and external)
- A single source of truth and management for all user identity authentications
- The centralized synchronization and provisioning/de-provisioning of users of the State of Michigan (SOM) systems
- The ability to verify and validate the credentials of users who are requesting access to SOM systems and restrict them to areas to which they have been granted access

3.2.12.6.3. Identity Exchange Hub (IEH) Demonstration/Pilot

Michigan plans to collaborate with MiHIN to conduct a pilot of an “identity exchange hub.” The IEH pilot will permit Medicaid to use a single sign-on services portal to access various State systems, e.g., licensure, public health, and Medicaid EHR Incentive Program registration and meaningful use attestation systems. The activity will eventually be expanded to allow providers to authenticate to each of Michigan’s Qualified Organization (sub-state HIEs), the various provider portals to Michigan’s major insurance companies, and a few of Michigan’s largest health systems. The use of a federated identity management infrastructure will help reduce both the burden associated with logging in to multiple portals and the risk of unauthorized disclosure. Other potential benefits of the pilot include:

- Jumpstarting the employment of trusted, strong authentication technologies
- Establishing a means and value proposition for providers to keep their data current
- Leveraging the SOM HIE infrastructure and eventually integrating with other, non-State organizations’ identity management solutions
- Addressing the Family Educational Rights and Privacy Act (FERPA), the Health Insurance Portability and Accountability Act (HIPAA), and the Individuals with Disabilities Education Act (IDEA)
- Demonstrating interoperability across multiple solution stacks that incorporate biometrics, one-time passwords, and soft tokens

3.2.12.7. Analytics Service

The State will implement functionality that will assist with monitoring transactions that flow into and out of SOM HIE and the State’s systems (volume, timing, etc.). This capacity analysis data will enable load balancing.
3.2.13. MITA SS-A

CMS requires that MDCH conduct a MITA SS-A (Medicaid IT Architecture State Self-Assessment). The physical output of the process will be documentation that demonstrates the Medicaid Enterprise’s current level of maturity with regard to its systems and business processes, the envisioned state, and a road map for making the desired improvements. The objectives of this Michigan MITA SS-A project are to: (1) maintain compliance with CMS requirements; (2) maximize MMIS and Medicaid Enterprise enhanced funding opportunities; (3) formalize the Medicaid Enterprise Strategic Planning process; (4) translate the Strategic Plan into discrete projects that advance the maturity levels of the Medicaid Enterprise business, technology and information architectures; and (5) ensure that the Contractor that performs the initial SS-A (in accordance with Version 3.0 of the MITA Framework) transfers the necessary knowledge, methodology, tools, and systems to State of Michigan staff, who will maintain and conduct future iterations of the SS-A.

Early in FY11, Michigan had planned to obtain the services of an outside contractor in order to conduct a MITA SS-A (Version 2.0). However, Michigan had replaced its MMIS system in 2009, and MMIS Certification was not awarded until August 2011. By that time, CMS had announced that the MITA Draft Version 3.0 was to be released in the second or third quarter of FY12, and it forbade states to proceed with MITA SS-A activity until Version 3.0 had been released. MDCH plans to release a MITA SS-A RFP in late summer 2012 to procure a contract to conduct a Version 3.0 Self-Assessment.

3.3. Populations with Unique Needs

Medicaid, working closely with M-CEITA has been and will continue to do targeted outreach to providers who care for patients with unique needs. These include pediatricians, rural providers, providers in FQHC and Rural Health Clinics, and others. Both Medicaid and M-CEITA are working closely with the Michigan Primary Care Association (MPCA) to leverage their experiences deploying EHRs in FQHCs from their HRSA HIT/EHR funding. MPCA has a wealth of knowledge and lessons learned from all the years of EHR work, and have been and will continue to be a resource for Michigan Medicaid.

Medicaid also works closely with M-CEITA to define “other underserved” option for priority primary care providers to help ensure that providers who serve populations with unique needs receive M-CEITA assistance in selecting, implementing and achieving meaningful use of EHRs. See Appendix J for the full definition as approved by ONC.

3.4. Goals and Outcomes

Health IT and the EHR Incentive Program have an enormous potential to improve care and outcomes. Medicaid has identified several key areas, along with related goals and outcomes.
**3.4.1. EHR Incentive Administrative Goals and Outcomes**

Michigan estimates that approximately 4,800 of its providers are eligible to participate in the Medicaid EHR Incentive Program. A primary goal is to ensure that as many of these providers as possible participate. Michigan is committed to achieving this goal by providing educational and outreach activities, minimizing the barriers to participation, streamlining the registration process, and providing registration training and assistance to providers. It is anticipated that 4,787 EPs will participate in the Medicaid EHR Incentive Program. As of Fiscal-Year-End 2012, 2,921 EPs and 106 EHs had registered, and 1,549 and 81, respectively, had been paid.

**Table 5 - EP Registration Goals**

<table>
<thead>
<tr>
<th>Year</th>
<th>EP Registration Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>1,466 Actual</td>
</tr>
<tr>
<td>2012</td>
<td>1,455 Actual</td>
</tr>
<tr>
<td>2013</td>
<td>776</td>
</tr>
<tr>
<td>2014</td>
<td>570</td>
</tr>
<tr>
<td>2015</td>
<td>360</td>
</tr>
<tr>
<td>2016</td>
<td>160</td>
</tr>
<tr>
<td>Total</td>
<td>4,787</td>
</tr>
</tbody>
</table>

It is anticipated that approximately 133 of the acute care hospitals in the state will participate in the Medicaid EHR Incentive Program.

**Table 6 - EH Registration Goals**

<table>
<thead>
<tr>
<th>Year</th>
<th>EH Registration Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2012</td>
<td>106</td>
</tr>
<tr>
<td>2013</td>
<td>17</td>
</tr>
<tr>
<td>2014</td>
<td>7</td>
</tr>
<tr>
<td>2015 and later</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>133</td>
</tr>
</tbody>
</table>

Once a provider is registered and has completed implementation or upgrade of an EHR, the next major goal is to achieve meaningful use. Medicaid, in partnership with M-CEITA and other health care stakeholder groups, intends to ensure that the majority of the providers achieve meaningful use in a timely manner. Medicaid, with its partners, will continue to provide education, training, and outreach activities to assist providers in achieving meaningful use. These activities will also help to ensure that providers maintain meaningful use.
Table 7 - Meaningful Use Achievement Goals

<table>
<thead>
<tr>
<th>Years to Meaningful Use</th>
<th>Meaningful Use Achievement Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>70%</td>
</tr>
<tr>
<td>2</td>
<td>80%</td>
</tr>
<tr>
<td>3</td>
<td>90%</td>
</tr>
</tbody>
</table>

The following administrative and timeline goals have been met:

- Completion of national Registration and Attestation System testing – December 2010
- Program year 1 EP and EH registration go-live – January 2011
- First EP payment – July 2011
- First EH payment – August 2011
- Program year 2 EP registration system go-live – April 2012
- Stage 1 meaningful use collection and tracking system go-live – April 2012
- First MU EP and EH payments – August 2012

The next goals to be pursued are:

- Stage 2 meaningful use collection and tracking system for EHs go-live – October 2013
- Stage 2 meaningful use collection and tracking system for EPs go-live – January 2014
- Program year 3 EP registration system go-live – February 2014
- Planning for Stage 3 meaningful use – January through September 2014
- Program year 4 EP registration system go-live – February 2015

**3.4.2. EHR Incentive Oversight Goals and Outcomes**

Program oversight is broken into three categories for the EHR Incentive Program. The first is provider eligibility verification that includes random eligibility verification audits. This process kicked off concurrently with registration. The second category is meaningful use verification. This process will begin when providers start to apply for their second participation year. As with any new program, general program integrity will naturally lag behind kick-off. This third category includes several related goals, including monitoring for waste, fraud, and abuse. One main factor that is outstanding is the sampling rate for program integrity. The goal is to have this finalized once clearer participation levels are available and no later than 18 months after registration opening.

**3.4.3. Encouragement of EHR Adoption Goals and Outcomes**

The numerous benefits of EHRs are only realized if the majority of the health care providers utilize the technology. Medicaid, in partnership with M-CEITA and other health care stakeholder groups, intends to ensure that all eligible Michigan health care providers understand the benefits of adopting an EHR and know what resources are available to assist them, such as M-CEITA. Medicaid will also work to
ensure that all eligible providers understand both the Medicare and Medicaid EHR Incentive Programs. This will be accomplished through an intense educational and outreach plan. Michigan will continue aggressive outreach efforts, as providers who were not previously eligible will become eligible over time, and maximum participation is the goal.

As mentioned above, M-CEITA was originally subsidized by ONC to deliver direct assistance to 3,724 Priority Primary Care Providers (PPCPs). M-CEITA actually recruited 4,000 PPCPs, some of whom were wait-listed. In December 2012 Michigan was awarded CMS funding to expand M-CEITA’s services to 600 specialists eligible for the Medicaid EHR Incentive Program.

3.4.4. HIT/E Related Goals and Outcomes

There are several foundational items that have to occur to ensure that Michigan’s health care community is ready and able to securely exchange electronic health information. Medicaid has an important role in these efforts. One of the first items that must happen is to increase the interoperability of State systems to support meaningful use and HIE. Many of the State systems are either required for meaningful use, vital for HIE, or both. These systems need to be made interoperable and accessible to providers. This will be enabled by SOM HIE and the new MPI. SOM HIE will be phased in over time. SOM HIE’s goal is to integrate all systems by September 30, 2014.

There is a lot more to HIE then just the state systems. Here again, Medicaid, as one of the largest payers in the state, has an important supporting role in encouraging and facilitating HIE development. MiHIN will enable and support the ability of Michigan’s providers to accomplish and demonstrate meaningful use by advancing cross-community exchange. Starting mid-2012, Qualified Organizations (sub-state HIEs) will be connecting to the MiHIN Shared Services allowing health information exchange to occur within and across state borders.

Just like EHR adoption, the benefits of HIE are only realized when the majority of the health care providers utilize the technology. So in addition to sub-state HIE connectivity to the MiHIN Shared Services, Medicaid is also focusing on minimizing barriers to providers connecting with sub-state HIEs.

3.5. Funding Outline

Several sources of funding have been identified and will be used to implement this plan. These include HIT IAPD funding (that includes both HIT and MMIS funding), CDC funding for the public health systems, and State funding for the required matches and other items.

EHR Incentive Program administrative items will be CMS-funded, with the required state match. Changes to CHAMPS and the Data Warehouse will flow through updates to the MMIS APDs. This will include changes for registration, payments of incentives, interoperability upgrades, and other items required for providers to achieve meaningful use, as well as for Medicaid to track and verify meaningful use. Creation of SOM HIE interfaces to State community health systems and the related HIE infrastructure (master person index, provider index, security, messaging, data audit/logging, analytics, et
al.) will be funded via the HIT IAPD (MMIS funds). Staffing and general administrative tasks for Medicaid EHR Incentive Program administration will fall under the HIT IAPD funding mechanism. Outreach and educational activities for the Incentive Program, and encouragement of EHR adoption will be included in the HIT IAPD. Last, “engaging the consumer” efforts will also be funded through the HIT IAPD mechanism.
4. Michigan’s Medicaid EHR Incentive Program Implementation Plan and Audit Strategy

4.1. EHR Incentive Program Registration and Verification

Michigan Medicaid uses CHAMPS to register providers for the EHR Incentive Program. By utilizing this existing system, we have accelerated go-live, leveraged existing information and processes, kept a user interface that most providers are familiar with, and streamlined the verification and payment processes.

4.1.1. Eligible Professional

Eligible Professionals (EPs) will be directed to the Medicare & Medicaid EHR Incentive Program Registration & Attestation System to start their registration processes. Once Michigan Medicaid receives a valid EP request from the national system, CHAMPS will automatically generate a letter that invites the provider to log into CHAMPS and enter information that is required. Existing fee-for-service providers will be given an opportunity to update any demographic information and then directed to complete the new EHR information modules (described below). Non-fee-for-service providers (such as providers who only provide care under one or more of the Medicaid managed care organizations) will be instructed how to gain access to CHAMPS, complete the provider enrollment process (to collect demographic information), and access the new EHR information module. This is required because non-fee-for-service providers currently have limited information in CHAMPS and do not access CHAMPS. As part of the provider enrollment process, all providers are subject to a thorough review. This includes a license check, death records check and sanction check. The system will check all providers on a routine basis to ensure that any recent changes are flagged. Once flagged, the system will not allow any payments of any kind, including EHR incentives, to be made to the provider until the flag is removed. Providers registering for the EHR Incentive Program will also be required to complete a base-line survey on general EHR issues and concerns. They will also be required to complete an annual update survey when they re-register each program year.

Michigan Medicaid will qualify providers as defined in the Final Rule Medicare and Medicaid Programs; Electronic Health Record Incentive Program. As specified under section 1903(t)(2)(A) of the Act, Medicaid participating providers who wish to receive a Medicaid incentive payment must meet the definition of a “Medicaid Eligible Professional.” The EP definition (1903(t)(3)(B) of the Act) lists five types of Medicaid professionals: Physicians, dentists, certified nurse-midwives, nurse practitioners, and physician assistants practicing in an FQHC or RHC that is led by a physician assistant. As of mid-2012, Michigan optometrists are also eligible. EPs enrolling in Michigan Medicaid EHR Incentive Program must have a practice physically located within Michigan or have more than 30% of the Medicaid encounters covered by Michigan Medicaid.
CMS does not define the EP, “pediatrician” referenced in the patient volume section of the Final Rule. Pediatricians in the Final Rule are allowed to receive two-thirds of the incentive payment if the Pediatrician meets a Medicaid patient volume of only 20 percent. For the purposes of the EHR Incentive Program, Michigan Medicaid defines Pediatrician as:

Medical doctors who diagnose, treat, examine, and prevent diseases and injuries in children. A pediatrician must hold a four-year Doctor of Medicine (M.D.) or Doctor of Osteopathy (D.O.) degree.

AND

Hold a current and in good-standing board certification in Pediatrics through either the American Board of Pediatrics (ABP) or the American Osteopathic Board of Pediatrics (AOBP).

OR

Focuses on treating patients 18-years old and under, and at least 50% of the EPs total patient population is 18-years old and under.

4.1.1.1. New EHR Modules in CHAMPS

To implement the EHR Incentive Program, an EP EHR module was created in CHAMPS. This module collects the required information and attestations for the EHR Incentive Program based on the type of registering provider and the setting(s) in which the services were provided. This data includes:

- Provider Demographic Information – This will largely be pre-populated by the national Registration and Attestation System and provider enrollment data
  - Name
  - NPI
  - Address
  - Provider type
  - Email
- Medicaid Volume Information
  - Reporting Period
  - Practice Setting and Volume Information
    - Ambulatory setting (i.e., private practice, clinic, etc.)
      - Medicaid encounter volume
      - Total encounter volume
    - Hospital inpatient setting
      - Medicaid encounter volume
      - Total encounter volume
    - Emergency department/room setting
      - Medicaid encounter volume
      - Total encounter volume
    - FQHC/RHC
      - Medicaid encounter volume
• Other Medical assistance (SCHIP, etc.) encounter volume
• Uncompensated care encounter volume
• Sliding scale encounter volume
• Total encounter volume

• Certified EHR Technology Information
  o ONC Certification Number – this will be confirmed with the ONC web service
  o Vendor/Company
  o Product
  o Version

• Attestations
• Supporting documentation (uploaded)

Additional Items for Participation Year 1
• Adopt, Implement or Upgrade Information
  o What status the provider is claiming

Additional Items for Participation Years 2 to 6
• Meaningful Use Information – this will adapt as meaningful use changes

4.1.1.2. Verification

In order to ensure that only eligible providers receive EHR incentive payments, a series of verifications will take place. Wherever possible, existing systems and processes will be used.

Good Standing Verification: Providers will be checked on a nightly basis to ensure that they remain in good standing. They must have a current and valid license. They must not have been sanctioned by the Michigan Bureau of Health Professions. They must not appear on any state or federal death list. And they must not have been sanctioned by Medicare or Medicaid. This check occurs automatically through CHAMPS, and any provider that is flagged is “end-dated” so that no payments are released and Medicaid staff can investigate the issue(s).

Hospital-based Provider Verification: CHAMPS will automatically check the provider reported volume information and flag any providers that exceed the hospital-based provider threshold (90%). A statistically valid sample of all registering EPs will go through an additional review of claims history to ensure program integrity. This review will pull all of the claims, including fee-for-service and managed care encounters\(^6\) that contain the provider’s NPI, under place of service (POS) Codes 21 (Inpatient Hospital) and 23 (Emergency Department) and compare those results to the provider-reported numbers. A small margin of error will be allowed to adjust for incompleteness of the information available to

\(^6\) Both fee-for-service and managed care encounters are available and will be used.
Medicaid. For 2013 onward, hospital-based EPs who can demonstrate that they have funded the acquisition, implementation, and maintenance of certified EHR technology (CEHRT), including supporting hardware and interfaces needed for meaningful use—without reimbursement from an eligible hospital or critical access hospital—and use such CEHRT at a hospital in lieu of using the hospital’s CEHRT, can be determined to be non-hospital-based and, therefore, eligible for incentive payments.

**Medicaid Volume Verification:** Incentive Program personnel verify the provider reported volume information with claims and encounters data residing in the Data Warehouse. They contact any providers that do not meet the Medicaid volume threshold to request additional data, if necessary, and resolve discrepancies. The review pulls all claims that list the provider’s NPI(s) and compare those results to the provider reported numbers. A small margin of error is allowed to adjust for incompleteness of the information available to Medicaid.

**Practices Predominately in FQHC/RHCs Verification:** Incentive Program personnel verify the provider reported volume information and flag any providers that report more than 50% of their total encounters in the FQHC/RHC setting. These provider NPIs are compared to a list of NPIs collected from the FQHCs and RHCs who participate in Michigan Medicaid. FQHCs and RHCs who participate in Michigan Medicaid will be asked to provide a list of all the providers who practice in their organizations along with an estimated full-time equivalent for each provider. A statistically valid sample of all registering EPs who meet the FQHC/RHC threshold, based on provider-reported numbers, will go through an additional review of claims history to ensure program integrity. This review will pull all of the claims that list the providers NPI and compare those results to the provider reported numbers. A small margin of error will be allowed to adjust for incompleteness of the information available to Medicaid.

**Certified EHR Verification:** In addition to the automatic verification that CHAMPS will do comparing the provider reported ONC Certification Number to the ONC web service, a statistically valid sample of all registering EPs will be asked to provide written proof of what certified technology they are using.

**Adopt, Implement or Upgrade Verification:** A statistically valid sample of all registering EPs in participation year 1 will be asked to provide written proof of adoption, implementation or upgrade.

**Meaningful Use Verification:** A statistically valid sample of all EPs will be audited. These audits will take two forms. The first will be an offsite review where only items that can be verified without a site visit will be conducted. This will include checking with state systems, MiHIN and other state department and/or programs to verify meaningful use elements. The second will be an in-depth onsite audit. The onsite audit will only be conducted in cases where the offsite audit turned up issues or when there are other indications of issues.
**Out-of-State Volume Inclusion**: EPs will be asked if they want to include any non-Michigan Medicaid data for eligibility consideration. The inclusion of out-of-state encounters will initiate an eligibility verification audit so Medicaid staff can contact the other state(s) to confirm data.

4.1.1.2.1. **Eligibility Verification Audits**

As mentioned above, a statistically valid sample of all EPs will be audited for eligibility verification criteria. The sample size will be finalized once the participation level becomes apparent but will not be less than 1 out of every 100 registrations. If randomly selected, the provider will be processed through additional verification steps and asked to provide additional items. Medicaid reserves the right to conduct on-site inspections as needed. These eligibility verification audits will be conducted by Medicaid EHR program staff.

4.1.1.3. **Encounter Calculation**

As noted in Section 4.1.1.1., each EP will have to provide and attest to eligible patient volume based on provider type and the setting(s) in which services were provided. The data includes:

- Ambulatory setting (e.g., private practice, clinic)
  - Medicaid encounter volume (Title XIX programs and certain Title XXI Medicaid expansion programs)
  - Total encounter volume
- Hospital inpatient setting, where EP is servicing or discharging provider
  - Medicaid encounter volume (Title XIX programs and certain Title XXI Medicaid expansion programs)
  - Total encounter volume
- Emergency department/room setting, where EP is servicing or discharging provider
  - Medicaid encounter volume (Title XIX programs and certain Title XXI Medicaid expansion programs)
  - Total encounter volume
- FQHC/RHC setting
  - Medicaid encounter volume (Title XIX programs)
  - Other medical assistance encounter volume (Title XXI programs)
    - Limited to Children’s Health Insurance Program (CHIP, known as MiChild in Michigan) or a CHIP demonstration project approved under section 1115 of the Social Security Act
    - Uncompensated care encounter volume
    - Sliding scale encounter volume
    - Total encounter volume

By collecting each of these items individually, all the various encounter thresholds can be calculated. For example, comparing total encounters in the FQHC/RHC setting to the sum total in all settings will establish if an EP is practicing predominantly in the FQHC/RHC setting. It will also allow for the Medicaid encounters in the FQHC/RHC setting to still be counted in the EP’s Medicaid encounters if the EP fails to meet the predominantly threshold. This approach also allows for identifying hospital
based providers, by collecting both the hospital inpatient emergency department/room setting encounters. EPs will also be asked if they are including any out-of-state encounters, and if so, what state(s). The inclusion of out-of-state encounters will initiate an eligibility verification audit so Medicaid staff can contact the other state(s) to confirm encounter data. EHR Project staff would contact the Medicaid agency in that/those states and work with the other states on a case by case basis. For other states that need to contact Michigan Medicaid to verify Michigan encounter data, contact information will be available at www.MichiganHealthIT.org.

4.1.1.3.1.  Encounters by Patient Panel Assignments

Only EPs who are Primary Care Providers (PCP) and who see Medicaid managed care patients will be allowed to use the encounter by patient panel assignment calculation. The numerator of the encounter calculation is the sum of:

- The total number of Medicaid managed care patients who (a) were assigned to the provider as a PCP during the 90-day eligibility reporting period and (b) were actually seen by the provider during the 24 months preceding the eligibility reporting period
- The total number of unduplicated Medicaid patient encounters during the eligibility reporting period

The denominator of the encounter calculation is the sum of:

- The total number of patients (a) assigned to the provider as a PCP by any payer during the eligibility reporting period and (b) actually seen (encountered) during the previous calendar year
- The total number of unduplicated patient encounters during the eligibility reporting period

For EPs in a FQHC or RHC, both the panel-assigned and unduplicated encounters in the numerator may also include charity care, sliding-fee-scale, and other medical assistance patients.

4.1.1.3.2.  Encounter – Special Cases

Not every episode of care in all health care settings results in an easily identified “encounter.” Several special cases of encounter have already been identified and will be addressed in pending policy. These include mass charity care by a non-profit health care provider outside an FQHC or RHC. For example, local public health agencies in Michigan routinely run mass vaccination clinics where they do not charge any payer or even track patient insurance coverage. In these cases, Michigan will not count this as an encounter, neither in the Medicaid nor total encounter categories. Similarly, not every payer pays for the same care in the same way. An example of this is prenatal care. Some payers pay for the individual prenatal care office visits, while others, including Medicaid, roll these costs up into the delivery payment. In these cases, Michigan will allow each episode of care (i.e., office visit) that occurs during the eligibility reporting period, even if the resulting “rolled-up” payment happens at a later date. This must be applied uniformly against all payers.

4.1.1.3.3.  Encounter Volume by Practice/Organization Proxy

EPs will be allowed to use the encounter volume of organizations in which they practice as a proxy for their own individual encounter volumes. EPs that elect this option will be required to provide
the group NPI(s) of the practice(s) that they are using as a proxy. This will facilitate verification and later audit, if needed.

In order to use this proxy option, all of the following criteria must be met:

1) The clinic or group practice’s eligible patient volume is appropriate as an eligible patient volume methodology calculation for the EP.
2) There is an auditable data source to support the clinic’s or group practice’s eligible patient volume determination.
3) All EPs in the group practice or clinic must use the same methodology for the payment year.
4) The clinic or group practice uses the entire practice or clinic’s eligible patient volume, and does not limit eligible patient volume in any way.

4.1.1.4. Annual Re-Registration and Reporting

All participating EPs will have to re-register with CHAMPS every year. This will ensure the EPs report on meaningful use and re-attest to volume information and other administrative information. They will also be required to complete an annual survey that will address general EHR issues and concerns. This, combined with the base-line survey taken at initial registration, will allow Michigan to track additional EHR usage, issues and concerns in addition to the required meaningful use and reporting elements. This data will be used by the state for HIT planning.

4.1.1.5. Communication with EPs

Once Medicaid receives notification from the federal Registration and Attestation System (RAS) of an EP’s interest in the Michigan program, a letter will be mailed to the address that is provided in the Registration and Attestation System feed. This first letter will invite the EP to complete the additional information in the new EHR modular in CHAMPS, provide information on how to complete the registration process, and indicate where additional information can be found. Providers will be able to log back into the EHR module at any time to see the status of their application. Going forward, e-mail will be the primary means of correspondence, as an e-mail address is required as part of the state-level registration process. Providers will receive notification of EHR incentive payments through the normal remittance advice process.

A call center for the EHR Incentive Program has been set up for general information and assistance. An email list will be created as new providers register and will be used to send updates and program changes to all participating providers. A program website, www.MichiganHealthIT.org, has been created and will house all program information and updates.

Training on how to register for the EHR Incentive Program will be available to the providers. This training will be available in three forms. The first is a written instruction guide, and the second is a pre-recorded webcast of an instructor-led session. Both of these are available on the Program website,
www.MichiganHealthIT.org. The third type of training will consist of in-person training sessions conducted around the state. Training sessions were concentrated in the spring of 2011 and the spring of 2012. Depending on the level of interest, they may be conducted in the future as well.

4.1.1.6. EP Timeline
Michigan gives each provider 90 days from notification by the RAS to complete the EHR registration and attestation. Michigan will review and issue an approval or denial of an EP’s EHR incentive registration as soon as administratively possible. Once an EP is deemed eligible and the duplicate payment check is complete with the RAS, a gross adjustment will be issued in the next payment cycle.

Providers who are not already established in the CHAMPS system, and those who are selecting a TIN that is not established in CHAMPS and the Michigan Department of Treasury systems, must complete these tasks within the aforementioned 90-day period. A prepared provider should be able to complete their provider enrollment registration in roughly ten minutes. Provider enrollment staff will then make a provider registration determination within 30 days. Upon approval, the provider will be notified that they need to now enter the EHR module in CHAMPS to complete their EHR enrollment. Michigan intends to encourage providers to pre-complete these prerequisite elements before submission to the RAS in order to minimize possible delay. EPs that choose to include out-of-state encounters may also take longer than 30 days to process through the review and approval process.

4.1.1.7. Appeal Process
EPs will be able to appeal provider eligibility determinations; adopt, implement, or upgrade, and meaningful use determinations; and incentive payments through the existing appeal process. Providers will also be able to request an administrative review, short of a full appeal, to correct or submit corresponding/supporting information or documentation to address any provider eligibility determinations; adopt, implement or upgrade and meaningful use determinations; and incentive payments. The administrative review can be initiated within the EHR module. An appeal can be initiated using the existing appeal process.

4.1.2. Eligible Hospital
Eligible hospitals (EHs) will be directed to the RAS to start their registration processes. Once Medicaid receives a valid EH request from the RAS, the Medicaid hospital staff will pull the relevant information from its sources (namely the Medicaid Cost Reports and Quarterly Updates) and start the review process. EHs will also have to log into CHAMPS and provide a few additional items including information specific to certified EHR technology. Only hospitals that file a cost report with Michigan Medicaid will be allowed to apply for the Michigan Medicaid EHR Incentive Program.

4.1.2.1. Verification
In order to ensure that only eligible providers receive EHR incentive payments, a series of verifications will take place. Wherever possible, existing systems and processes will be used.
**Good Standing Verification:** Hospitals will be validated on a nightly basis to ensure that they remain in good standing. This will include no sanctions by the Michigan Bureau of Health Professions and no sanctions by Medicare or Medicaid. This validation occurs automatically in CHAMPS. Any provider that is flagged is “end-dated” so no payments are released and Medicaid staff can investigate the issue(s).

**Certified EHR Verification:** In addition to the automatic validation that CHAMPS performs comparing the provider reported ONC Certification Number to the ONC web service, a statistically valid sample of all registering EPs will be asked to provide written proof of what certified technology they are using.

**Adopt, Implement or Upgrade Verification:** A statistically valid sample of all registering EHs in participation year 1 will be asked to provide written proof of adoption, implementation or upgrade.

**Meaningful Use Verification:** A statistically valid sample of all EHs will be audited. These audits will take two forms. The first will be an offsite review where only items that can be verified without a site visit will be conducted. This will include validation with state systems, MiHIN and other state department and/or programs to verify meaningful use elements. The second will be an in-depth onsite audit. The onsite audit will only be conducted in cases where the offsite audit turned up issues or when there are other indications of issues.

4.1.2.2. **Eligibility Verification Audits**

As mentioned above, a statistically valid sample of all EHs will be audited for eligibility verification criteria. The sample size will be finalized once the participation level is understood, but will not be any less than 1 out of every 25 registrations. If randomly selected, the provider will be processed through all the additional verification steps and asked to provide the required additional items. Payment will be withheld until eligibility verification audit is complete. Medicaid would reserve the right to conduct an on-site inspection as needed.

4.1.2.3. **Medicaid Volume Calculation**

MDCH will utilize data derived from the Medicaid Quarterly Hospital Reports to verify qualifying patient volume thresholds for the Medicaid EHR Incentive Program. The Quarterly Hospital Report will provide information specific to a ninety day continuous period, including total number of Medicaid patient encounters and all patient encounters within the described period. MDCH proposes to use total number of patient discharges or inpatient days when calculating hospital encounters. To verify hospital eligibility as an acute care hospital, MDCH will verify the CCN number listed on the Medicaid Quarterly Report. To calculate hospital average length of stay eligibility, data derived from line S3, Part 1 of the most recently filed Michigan Medicaid Forms/CMS 2552 Cost Report will be utilized.

4.1.2.4. **Annual Re-Registration and Reporting**

All participating EHs will have to re-register within CHAMPS each year. This will ensure the EHs report on meaningful use and re-attest to volume information and other administrative information. Medicaid-only EHs will report meaningful use measures within the state-level registration, while dual-eligible hospitals will report measures to Medicare, and that information will get passed to the State.
4.1.2.5. Communication with EHs

Due to the largely manual process that EHs will go through, Medicaid staff will contact each EH once notification is received via the RAS. EHs will be kept informed of their application status and be able to contact Medicaid staff directly with any issues.

An email list will be created as new providers register, and will be used to send updates and Program changes to all participating providers. A Program website, www.MichiganHealthIT.org, has been created and will house all Program information and updates.

4.1.2.6. EH Payment Calculation

Once an EH is deemed eligible and the duplicate payment check is complete with the RAS, a gross adjustment will be issued for the incentive amount. The payment will go out in the next weekly payment cycle.

4.1.2.6.1. Calculation

Medicaid staff will use information from the Medicaid Cost Reports to calculate the incentive payment amount according to the final rule formula. The Medicaid Cost Reports and Quarterly Updates represent the most accurate information available on which to base this calculation. Other payment processes also use this data, which further increases the level of assurance about the data’s accuracy.

MDCH will utilize data derived from Michigan Medicaid Forms/Medicare CMS 2552 Cost Report to calculate Medicaid aggregate EHR hospital incentive amounts. As required in the EHR Incentive Program Final Rule, MDCH will use hospital data from the hospital fiscal year that ends during the Federal fiscal year prior to the fiscal year that serves as the first payment year. Data elements used to calculate hospital discharges and the Medicaid Share will be derived from the appropriate Michigan Medicaid Form or CMS 2552 Cost Report.

4.1.2.6.2. Draw-Down

EHR incentive payments will be paid over a three-year period, not to exceed the amounts outlined in section 1903(t)(5)(A) of the statute that requires that no more than 50 percent of the hospital’s aggregate incentive payment be paid in any one year. Likewise, over a two-year period, the State will pay no more than 90 percent of the aggregate incentive. Therefore, the first-year amount will be 50% of the total hospital EHR amount, the second-year amount will be 40% of the total hospital EHR amount, and the third-year amount will be 10% of the total hospital EHR amount. Medicaid staff, using historical information, will ensure that the amount does not violate the draw-down previsions in the final rule and does not exceed the total hospital EHR amount.

4.1.2.7. EH Timeline

All possible EHs are already established in CHAMPS and already receive payments through the CHAMPS system. All of the EHs will also file cost reports with Michigan Medicaid which is the key source of information to determine eligibility. A specific timeline for EH registration has not been established, as a number of external factors could influence the amount of time EHs need to register. Michigan
Department of Community Health staff will work closely with EHS to ensure timely and accurate registration.

### 4.1.2.8. Appeal Process
EHs will be able to appeal provider eligibility determinations; adopt, implement or upgrade and meaningful use determinations; and incentive payments through the existing appeal process. Providers will also be able to request an administrative review, short of a full appeal, to correct or submit corresponding/supporting information or documentation to address any provider eligibility determinations; adopt, implement, or upgrade and meaningful use determinations; and incentive payments. The administrative review can be initiated within the EHR module. An appeal is initiated using the existing appeal process.

### 4.2. Meaningful Use and Quality Reports Collection
All providers were enrolled in the Medicaid EHR Incentive Program under Adopt, Implement or Upgrade (AIU). The only exception to this was dually enrolled (Medicaid and Medicare) EHS that were deemed meaningful users by CMS under the Medicare program. MU measures are being collected in 2012 through an enhancement to the existing EHR module inside of CHAMPS. This MU system is designed to be flexible and expandable as the MU requirements change over time. In later years (2014 and later), this collection will move from a manual process of providers reporting to a more automatic collection and reporting using HIE technology.

Building on the past success of the data warehouse, all MU measures will be loaded into the data warehouse for analysis. This analysis will advise and inform Medicaid leadership and will help understand current trends and areas of possible improvement.

### 4.3. Changes to Medicaid Systems to Implement the EHR Incentive Program
Many of the state systems will need to be modified and improved to fully implement the EHR incentive program. The two main Medicaid systems, CHAMPS and the data warehouse, will need to be enhanced to support their new direct roles in implementing the incentive program, and they will also need upgrades to insure they are interoperable with EHRs and other HIT systems.

#### 4.3.1. Changes to CHAMPS for EHR Incentive Program
CHAMPS, Michigan’s MMIS, is the system used to register providers for the Medicaid EHR Incentive Program, allow them to attest, and make incentive payments. CHAMPS interfaces with the RAS to facilitate file transfers between the State and RAS. In addition, interfaces had to be built between CHAMPS, the data warehouse, and the new Incentive Program module to facilitate proper Program administration. CHAMPS is also a major part of the meaningful use collection and tracking systems used in year two and subsequent years of the Incentive Program.
4.3.1.1. Interaction with the Federal Registration and Attestation System

CHAMPS interacts and interfaces with the RAS via an existing connection used for similar transfers. These are automated interfaces that link the RAS to CHAMPS and facilitate provider registration, provider approval/denial reporting, duplicate payment checks, payment reporting, and a few other administrative functions.

4.3.2. Changes to Data Warehouse for EHR Incentive Program

The data warehouse is playing an essential role in the administration and oversight of the EHR incentive program and will become one of the primary sources of information for HIEs in Michigan. The data warehouse stores all of the EHR sub-system data inside of CHAMPS and will be used for quality and program integrity activities. This has required some changes to the interface between CHAMPS and the data warehouse. The data warehouse is also a major part of the meaningful use collection and tracking systems in years two and later. The planned MPI implementation and data mining from the CCD summary are two of the major planned initiatives.

4.4. Changes to Meaningful Use

Michigan does not intend to make any changes to the meaningful use requirements. Michigan will use MCIR to enable the immunization meaningful use items and MDSS and MSSS to enable the public health reporting meaningful use items. These systems will be updated to the correct standards to enable meaningful use.

4.5. Reporting of Federal Funds

4.5.1. 90% Federal Financial Participation (FFP) for HIT Administrative

Separate account codes within the state’s accounting systems have been established to track all expenses and relate the expenses back to the correct APD funding source. This includes correlating staff reported hours to the appropriate APD funding source.

4.5.2. 100% FFP for Incentive Payments

Separate account codes inside of CHAMPS will be established to track all incentive payments. These funds will be reported to CMS in the appropriate means.

4.6. Role of existing SMA contractors

The state intends to continue to use several existing contactors and bring on a few additional new contractors. CNSI will continue to be utilized as the principal MMIS contractor and will oversee all the changes to CHAMPS. OptumInsight will be utilized as the principal Data Warehouse contractor and will oversee all the changes to the Data Warehouse. MPH will continue to be utilized and will provide program assistance for the EHR Incentive Program. This will include project management and subject matter experts. Additionally it is likely that additional contractors will be needed. In particular, contractors will be needed in relationship to SoM HIE and other technical aspects.
4.7. Audit Strategy

4.7.1. CMS-approved Comprehensive Audit Plan
A Comprehensive Audit Plan submitted by the Michigan Department of Community Health on Dec. 1, 2011, and approved by CMS is attached as Appendix K.

4.7.2. Methods to identify suspected fraud and abuse
At enrollment and prepayment, all standard provider screenings will be applied to program participants. Providers will need to be in good standing with the program, be licensed with the state, have no sanctions reported on any of the national databases or other state licensing boards. Leveraging our investment in our Michigan Data Warehouse (MDW), we will look at the information we have requested from the provider regarding their practice volumes and do a reasonableness test using claims data for fee for service for medical and pharmacy claims. We will look at Primary Care Provider (PCP) assignments on our managed care populations supplementing encounter data from the MCO as necessary. In the upcoming years, we will look to our Michigan Care Improvement Registry (MCIR) for compliance with applicable Meaningful Use indicators. Currently, MCIR contains information on Immunization, lead screening, newborn screening, hearing and vision, sickle cell, ESPDT, smoking status, and BMI. This information has been moved to the data warehouse. The MMIS and data warehouse are tightly integrated, with the data warehouse producing most of the MMIS reports. Because of this integration, we will be able to run analytical reports on EHR payments by various demographic profiles, NPI, Name, Provider Number, Tax ID, address, dollar amounts, just to mention a few, to be able to find trends or outliers.

4.7.3. Tracking of payments
All payments will be tracked by NPI and Tax ID and can be cross-checked and linked to other identifiers and identification numbers. All payments under this program can be tracked via accounting and payment coding.

4.7.4. Actions when Fraud and Abuse is Detected
When fraud or abuse is suspected per normal protocol, the provider will be flagged and a file opened in program integrity unit. All relevant data on the provider and any other suspected provider entity connected with the suspected F&A will be collected. If the pursuant investigation determines F&A exists, several actions will be taken and all payments to the provider will be suspended for potential recovery. Other activity by that provider would be reviewed. The Attorney General’s (AG’s) office would be advised of the situation for a determination of an action on their part. At the conclusion of the investigation, the provider would be notified of the findings and the actions being taken and what their rights are. They would then be reported to all appropriate agencies and all avenues to recover monies owed the program would be pursued. Michigan can impose a summary suspension (i.e., in high-dollar or otherwise egregious cases of fraud) that temporarily abrogates the existing Medicaid provider agreement and freezes all Medicaid payments until a provider has exhausted all administrative remedies or has been convicted in a court of law. The passage of a State Whistleblower Law in 2005, which offers incentives to the public to report serious cases of fraud and abuse directly to the MFCU, has enhanced the State’s ability to combat fraud, waste, and abuse.
4.7.5. Data Sources for Meaningful Use Verification
As described above, Michigan is in a unique position because of the investments made in the Data Warehouse. Many systems interface into the warehouse allowing us to identify outliers across many different programs and indicators. The concept is similar to your IDS with a different data set.

4.7.6. Sampling Methodology
The sample size is based on the size of the Incentive Program population. The current audit plan (Appendix K) requires sampling no less than 1 out of every 100 EPs. As of August 2012, 1,182 EPs had been paid. At that time, 12 EPs were randomly selected. Most were members of a group practice, a situation that required auditing all of the other EPs within the group. As a result, 138 providers—or 11.67% of the total population—actually underwent a post-payment audit. As of early 2013, most of the post-payment audits had been concluded; no fraud, waste, or abuse had been detected.

4.7.7. Methods to reduce provider burden and maintain integrity & oversight
As indicated above, we will use our MDW to do analysis to validate information reported by provider and we will also look at where and to whom payments are being made. We will cross-check that with how many providers we have at that location and cross-check with NPI, license, and tax ID numbers.

4.7.8. Program Integrity Operations
Per executive Order no. 2010-1, starting 10/1/2010, the Program Integrity Unit will move out of the Medical Services Administration department into the newly created Office of Health Services Inspector General. This new office is outside of the Medical Services Administration department but still within MDCH. Program Oversight will be shared between Program Integrity Unit and a new unit created under this plan to specifically oversee this program.

4.8. Miscellaneous

4.8.1. Disbursement of Incentive Payments through Medicaid Managed Care Plans
At this point in time, Michigan does not intend to disburse incentive payments through Medicaid managed care plans.

4.8.2. Entity Promoting the Adoption of Certified EHR Technology
At this point in time, Michigan does not intend to designate any entities who could receive incentive payments on behalf of a provider for promoting the adoption of certified EHR technology.

4.8.3. Payments Directly to Providers
Pending policy will assure that Medicaid provider payments are paid directly to the provider (or an employer or facility to which the provider has assigned payments) without any deduction or rebate. Any violation of this policy will be investigated through normal processes and may result in administrative action.
5. Michigan’s HIT Roadmap

In order to implement the EHR Incentive Program, encourage the use of HIT/E to realize its benefits and ultimately improve outcomes for all Medicaid beneficiaries, several state systems will have to be upgraded and enhanced, new processes and procedures will need to be put in place and a major shift in operations, both inside Medicaid and within the health care provider community, must be undertaken. These activities fall into five major categories. With the four initial categories all being foundational to the fifth and final goal of improving outcomes.

![HIT Roadmap Diagram](image)

**5.1. Conduct EHR Incentive Program Administration and Oversight**

Implementing the EHR Incentive Program is a major undertaking. Systems have to be designed, built, and tested; Medicaid staff and the provider community have to be informed and educated; new policies, procedures and audit plans have to be developed, tested and implemented. Section 3.4.1 covers the EHR incentive administrative goals and outcomes.
5.1.1. Registration and Meaningful Use Tracking

Michigan’s registration and meaningful use (MU) tracking system is operational and will continue to be updated in accordance with MU stage releases.

5.1.2. Program Oversight

Program oversight is broken into three categories for the EHR Incentive Program. The first is provider eligibility verification, which includes random eligibility verification audits. This process will begin as soon as administratively feasible. The second program oversight category is meaningful use verification. This process will begin once providers start to apply for their second participation year. Both of these verifications require polling other systems to verify the information. For eligibility verification, the main system that will be used is the historical information in the data warehouse. For meaningful use, several systems, including the data warehouse, MCIR, HIE(s) and others, will have to be searched to verify information. All of these activities will require additional staff and resources. Both SOM HIE and MIHIN will become vital in tracking meaningful use.

As with any new program, general program integrity will naturally lag behind implementation. This is the third program oversight category and includes several related goals. One main factor that is outstanding is the sampling rate for program integrity. The goal is to have this finalized once the probable level of participation is apparent, which should be approximately 18 months after payment go-live. Program integrity will provide an independent review of incentive activities and monitoring for fraud and abuse.

5.2. Encourage EHR Adoption

History has shown that health care providers need to be shown that there are clear benefits of any change to the practice of medicine; this is particularly true when the change involves new technology. Providers will need encouragement to adopt EHR, information on the benefits and support on the EHR journey. Medicaid, in partnership with M-CEITA and other health care stakeholder groups, intends to ensure that all Michigan health care providers understand the benefits of adopting an EHR, what resources are available to assist them, such as M-CEITA, and know of and understand the EHR Incentive Programs, both Medicaid and Medicare.

5.2.1. Outreach Activities

Despite federal and State efforts, some providers may still be unaware, confused or concerned about the EHR Incentive Programs. Continued outreach activities are needed to ensure that as many providers who are eligible, participate in the EHR Incentive Program and realize the benefits of EHR adoption. This will include an intense educational and outreach plan. The plan calls for a combination of direct mailings, training and educational sessions, speaking at professional conferences and online activities. Outreach staff will be available to speak to provider groups on the EHR Incentive Program, meaningful use, and the benefits of EHR adoption. Early efforts will focus on EHR Incentive Program information, with continuing efforts on meaningful use and the benefits of EHR adoption throughout the life of the program.
5.2.2. Partnership with M-CEITA
Both Medicaid and M-CEITA are working very closely to promote the ARRA funding projects and the benefits of an EHR.

5.3. Enable Meaningful Use
Many of the state’s systems will need improvements and enhancements before they can support both meaningful use and HIE. These systems will be brought up to the new interoperability standards and incorporated into SOM HIE to both enable providers to achieve meaningful use and facilitate tracking of providers’ meaningful use status. The early focus is on the main Medicaid systems and the public health systems that are required for meaningful use. In many regards, SOM HIE development will parallel MiHIN with SOM HIE activities getting the state systems up-to-speed, and MiHIN linking the systems out to the provider community. The initial timeline calls for:

- Complete design and requirements – completed
- Implement security and messaging service to receive immunization meaningful use information – completed
- MDSS to receive notifiable laboratory results via Qualified Organizations (sub-state HIEs) – FY13-FY14
- Implement XDS repository to send immunization histories via MiHIN Shared Services – FY13-FY14
- STARLIMS send lab results via MiHIN Shared Services – FY13-FY14
- Full MPI integration – FY13-FY14
- Full Provider Index integration – FY13-FY14
- State data CCD available – late 2013
- All currently planned SOM systems integrated – early 2014
- Additional systems will be added to increase information and value in the HIE and to comply with future meaningful use requirements (stage 2 and 3 of meaningful use), additional details will be in future versions of the SMHP

As mentioned above, these systems upgrades will help Medicaid facilitate tracking of provider meaningful use status. To accomplish this, advanced analytics will be incorporated into SOM HIE to enable Medicaid staff to query, verify, and monitor provider meaningful use compliance.

5.4. Enable Health Information Exchange
Good information leads to good care. Providing health care providers with accurate, timely, organized and complete information at the point of care will lead to better outcomes. Health Information Exchange, with its ability to securely move and compile health information, is vital to moving health care forward. As one of the largest payers in the state, Medicaid has an important role to play in encouraging and facilitating HIE in the state. HIEs have been proven to reduce unneeded duplicative labs and other studies, thus reducing costs that Medicaid would incur. This is just one of the many ways Medicaid will benefit from state-wide HIE adoption. Medicaid is also one of the largest sources of health information in the state. It is important to make this information available through HIE to ensure that a patient’s complete history is captured and made available to the provider.
5.5. Improve Outcomes

The wide-spread use of HIT systems, including EHRs and health information exchange, has the potential to dramatically improve health outcomes. There is emerging evidence that use of HIT systems can have a profound impact on quality of service and patient outcomes if implemented in concert with recommended health improvement processes. The use of EHR systems permits participants to measure and report externally on a number of quality indicators and, more importantly, to use these results internally to continually improve care delivery by more readily conforming to evidence-based clinical best practices. Use of an EHR system facilitates measurement of outcomes and evaluation of interventions in real-time rather than a retrospective environment, facilitating continuous improvement of the workflow and processes of clinical activities. It also facilitates communication and coordination of care among care team participants and allows tracking of patient health indicators over time (facilitating health indicator trending through charts and graphs).

Medicaid will be evaluating the possible areas that could see the most benefit from the use of HIT, and developing plans on how to maximize the improved outcomes for the Medicaid population.

5.6. Future Activities

Medicaid is already looking for additional ways to use HIT/E to improve the quality of care and administrative efficiencies. Additional state systems, such as the Maternal Infant Health Program (MIHP) data, health records of released prisoners from the Department of Corrections EHR, and the planned Public Health and Prevention Registry, can be leveraged as another source of information, but also can benefit from having access to more complete information by being included in SoM HIE. Planning for these items will begin soon with additional details on in later versions of the SMHP.
Appendix A: August 2010 Findings of the Medicaid Provider Survey
Findings of the Medicaid Provider Scan

August 2010

Prepared For
Medical Services Administration
Michigan Department of Community Health

Prepared By
Public Sector Consultants Inc.
Lansing, Michigan
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Introduction

The Medical Services Administration (MSA) in the Michigan Department of Community Health (MDCH) engaged Public Sector Consultants (PSC) to conduct a survey of Medicaid providers in order to identify the extent to which these providers intend to apply for the Medicaid incentive for adoption of an electronic health record (EHR) system. Surveys were mailed to 9,994 practices of current Medicaid providers using a mailing list pulled from the Community Health Automated Processing System (CHAMPS). The practices included in the list were identified based on the likelihood that providers in the practice would fit into an eligible provider category (i.e., physician, pediatrician, dentist, nurse practitioner, physician assistant, or certified nurse-midwife). Responses were received from 2,186 practices. Far more respondents completed the survey on paper (1,802) than did online (384).

Survey questions were designed to identify

- how many providers might apply for the incentive,
- the range of practice sizes and types of practices from which providers will apply,
- the extent of current and future EHR use among responding practices,
- the ways in which EHRs are currently being used by practices,
- and the major concerns about EHR implementation among practices that do not currently have an EHR system in place.

Eligibility for the incentive is based on two primary criteria. Eligible providers must have at least 30 percent of their patient volume attributable to Medicaid. In addition, eligible providers cannot be “hospital-based.” (Hospital-based is defined as providing 90 percent or more of care in a hospital or hospital-owned facility.) There are a few exceptions to these criteria. Pediatricians are only required to have 20 percent of patient encounters attributable to Medicaid. Providers who work predominantly in a federally qualified health center (FQHC) or a rural health center are not subject to the rule regarding hospital-based care; that is, 90 percent or more of the care they provide can be hospital-based. (However, providers who work predominantly in FQHCs and RHCs must have at least 30 percent of patient volume attributable to “needy individuals.”)

The findings in this report are divided into three categories:

- Practices with providers who are likely to apply and be eligible for the incentive;
- Practices for which it is uncertain whether any providers will apply; and
- Practices in which no providers are likely to apply.

While the MSA’s primary concern is with the first category, it is also helpful to have an understanding of the practices represented by the other two categories.

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1 Two important items are of note: (1) Providers and practices located outside of Michigan were included in the mailing list, and (2) individual practices may have received more than one survey due to the structure of the database. That is, if a provider is listed in the database as a sole proprietor and is also part of a group, a letter would have been mailed to both the provider’s sole proprietor address and group address. However, the survey instructions clearly stated that only one survey should be completed per practice.
The MSA believes that once eligible providers become more familiar with the EHR adoption incentive, they will be more likely to apply. For that reason, the report also provides an analysis of survey responses from all practices that indicated at least 30 percent of their annual patient encounters are covered by Medicaid, regardless of whether they indicated any plans to apply for the incentive. As described above, the proportion of encounters covered by Medicaid is not the only criterion by which providers will be deemed eligible, but it serves as a useful proxy for potentially eligible providers.

It is important to note that responses were not received from 7,808 practices. It is impossible to know whether any of the providers in these non-responding practices intend to apply for the incentive, much less whether they will be eligible for the incentive. However, the potential impact of this population is considered in the final section this report.
Key Findings

NUMBER OF PROVIDERS LIKELY TO APPLY AND BE ELIGIBLE

There were 593 respondents who reported that providers in their practice plan to apply for the Medicaid incentive for EHR adoption. Of these practices, 214 have providers who are likely to be eligible for the incentive. These practices reported that at least 30 percent of their annual patient encounters are covered by Medicaid and less than 90 percent of care provided by the practice is based in a hospital or hospital-owned facility. These 214 practices represent 1,086 providers. Of these providers, the reported estimates of those who plan to apply (981) are as follows:

- 519 physicians (other than pediatricians)
- 121 dentists
- 117 nurse practitioners
- 114 pediatricians
- 92 physician assistants
- 18 certified nurse midwives

Exceptions to the eligibility criteria may result in successful applications for the incentive from the following additional providers: 2

- 29 pediatricians
- 27 physicians (other than pediatricians)
- 10 physician assistants
- 5 nurse practitioners

Regardless of the intention to apply for the incentive, 615 practices (28 percent of all responding practices) reported that at least 30 percent of their annual patient encounters are covered by Medicaid, suggesting that their providers are potentially eligible for the incentive. These practices include the 214 above, and also any respondents who suggested that providers in their practice are not intending to apply or are uncertain whether they will apply. These practices represent 2,660 providers:

- 1,575 physicians (other than pediatricians)
- 285 nurse practitioners
- 275 dentists
- 258 physician assistants
- 229 pediatricians
- 38 nurse-midwives

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2 See the full report of survey findings for an explanation of these figures.
PRACTICE SIZE
The 214 practices with providers who are likely to apply and be eligible for the incentive are, on average, slightly larger (5 providers on average) than practices where either no providers plan to apply or it is uncertain whether any providers will apply (3 providers each, on average). A smaller percentage of the practices with providers who are likely to apply and be eligible for the incentive are solo practitioners (36 percent), compared to practices where either no providers plan to apply (51 percent) or it is uncertain whether any providers will apply (43 percent).

The average practice size among all 615 practices with providers who are potentially eligible for the incentive is 4 providers; 36 percent of these practices are solo practitioners.

PRACTICE TYPE
A plurality of the 214 practices with providers who are likely to apply and be eligible for the incentive (44 percent) are primary care practices. Another 9 percent of these practices are community health centers, which also deliver primary care services.

A plurality (34 percent) of the 615 practices with providers who are likely to be eligible for the incentive are also primary care practices. Another 6 percent are community health centers.

Practices where no providers plan to apply for the incentive or it is uncertain whether any providers will apply are more likely to be single specialty practices (52 percent and 44 percent, respectively) than primary care practices (32 percent and 29 percent, respectively).

CURRENT USE OF AND FUTURE PLANS FOR EHR
The 214 practices with providers who are likely to apply and be eligible for the incentive are more likely to currently use an EHR system than practices where either no providers plan to apply or it is uncertain whether any providers will apply (41 percent compared to 24 percent and 28 percent, respectively). Among the 615 practices with providers who are likely to be eligible for the incentive, 31 percent currently use an EHR system.

The following findings regarding EHR use held true across all categories of respondents:

- Larger practices are more likely than smaller practices to have an EHR in place.
- The majority of practices with an EHR system in place have and use most of the functions that constitute meaningful use.
- Practices that do not currently have an EHR system in place are concerned primarily with the cost of implementing and maintaining an EHR as well as the potential for an EHR to disrupt practice workflow.
Survey Findings

This section of the report provides detailed survey findings for the following three categories of respondents:

- Practices with providers who are likely to apply and be eligible for the incentive;
- Practices for which it is uncertain whether any providers will apply; and
- Practices in which no providers are likely to apply.

PRACTICES WITH PROVIDERS WHO ARE LIKELY TO APPLY

There were 593 respondents who reported that providers in their practice plan to apply for the Medicaid incentive for EHR adoption. Of these, however, only 483 (90 percent) reported that less than 90 percent of the care that their practice provides is based in a hospital or hospital-owned facility, and of these, only 214 reported that 30 percent or more of their practice’s annual patient encounters are covered by Medicaid. The analysis in this section of the report is focused on these 214 practices, which not only have providers who are likely to apply for the incentive, but are also the most likely to be eligible for the incentive.3

These practices represent 1,086 providers:

- 548 physicians (other than pediatricians)
- 139 pediatricians
- 144 dentists
- 128 nurse practitioners
- 106 physician assistants
- 21 certified nurse-midwives

These practices estimated that the vast majority of their providers (981 out of 1,086) plan to apply for the incentive:4

- 519 physicians (other than pediatricians)
- 121 dentists
- 117 nurse practitioners
- 114 pediatricians
- 92 physician assistants

3 These 214 practices do not include practices with pediatricians for whom 20 to 29 percent of annual patient encounters are covered by Medicaid, nor do they include FQHCs or RHCs where 90 percent or more of the care provided is based in a hospital or hospital-owned facility. The number of additional practices represented by these two categories is 9 and 4, respectively.

4 There are 26 additional pediatricians who may apply and be eligible for the incentive based on the lower required level of patient volume attributable to Medicaid for pediatricians. Additional providers who work predominantly in a FQHC or RHC and provide 90 percent or more of care in a hospital or hospital-owned facility who may also apply and be eligible for the incentive are as follows: 27 physicians, 3 pediatricians, 5 nurse practitioners, and 10 physician assistants. This results in a higher number of providers (1,052) who may be eligible for the incentive and reported they plan to apply.
18 certified nurse-midwives

Details regarding the practices in which these providers work are provided below.

**Practice Size**

The size of the practice for the providers who are likely to apply and be eligible for the incentive ranges from one to 104 providers. The average practice size is five providers. The median practice size is two providers. The vast majority (90 percent) have ten or fewer providers.

<table>
<thead>
<tr>
<th>Practice Size</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solo</td>
<td>36%</td>
</tr>
<tr>
<td>Two providers</td>
<td>22%</td>
</tr>
<tr>
<td>3–10 providers</td>
<td>31%</td>
</tr>
<tr>
<td>11 or more providers</td>
<td>10%</td>
</tr>
</tbody>
</table>

NOTE: Percentages do not total 100% due to rounding.

**Practice Type**

A plurality of practices with providers who are likely to apply and be eligible for the incentive (44 percent) represent a primary care practice. An additional 9 percent represent FQHCs and RHCs, which also mainly deliver primary care services. The following table shows the percentage of respondents by practice type.

<table>
<thead>
<tr>
<th>Type of practice</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care practice</td>
<td>44%</td>
</tr>
<tr>
<td>Single specialty practice (not primary care)</td>
<td>14%</td>
</tr>
<tr>
<td>Community health center (FQHC, FQHC look-alike, RHC)</td>
<td>9%</td>
</tr>
<tr>
<td>Nursing home or long-term care facility</td>
<td>9%</td>
</tr>
<tr>
<td>Multi-specialty practice</td>
<td>6%</td>
</tr>
<tr>
<td>Community mental health center</td>
<td>3%</td>
</tr>
<tr>
<td>Home health agency or hospice agency</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>15%</td>
</tr>
</tbody>
</table>

**Current Use of and Future Plans for EHR**

Of those practices who are likely to apply and be eligible for the incentive, 68 percent currently use an electronic practice management system; 41 percent currently use an EHR system. Of those practices that use an EHR system, 44 percent report that it is certified by the Certification Commission for Health Information Technology (CCHIT). About one-fifth (21 percent) say their product is not certified by CCHIT, and 35 percent are unsure whether their EHR is certified by CCHIT.
Smaller practices are less likely than larger practices to have either an electronic practice management system or EHR in place.

<table>
<thead>
<tr>
<th>Practice size</th>
<th>Currently use an electronic practice management system</th>
<th>Currently use an electronic health record</th>
</tr>
</thead>
<tbody>
<tr>
<td>One or two providers</td>
<td>56%</td>
<td>32%</td>
</tr>
<tr>
<td>3–10 providers</td>
<td>74</td>
<td>33</td>
</tr>
<tr>
<td>11 or more providers</td>
<td>85</td>
<td>50</td>
</tr>
</tbody>
</table>

About two-fifths of the practices whose providers are likely to apply and be eligible for the incentive are planning to implement an EHR either in the next 12 months (26 percent) or the next 13 to 24 months (16 percent). Less than 1 percent (0.4 percent) report that the practice has decided not to implement an EHR. Approximately one-sixth (16 percent) report that the practice has not yet decided whether to implement an EHR.

**EHR Function Availability and Use**

Practices that have an EHR in place were asked to indicate which functions are available in their EHR system and which functions are being used. With the exception of submitting data electronically to public health agencies, all of the functions listed in the table below are available and being used in a large majority of the EHR systems.

<table>
<thead>
<tr>
<th>Function</th>
<th>Is the function available?</th>
<th>Is the function used?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain active medication allergy list</td>
<td>94% 5% 1%</td>
<td>88% 12%</td>
</tr>
<tr>
<td>Maintain active medication list</td>
<td>83 16 1</td>
<td>75 25</td>
</tr>
<tr>
<td>Generate a clinical summary of office visits for patients</td>
<td>80 10 10</td>
<td>72 28</td>
</tr>
<tr>
<td>Submit claims</td>
<td>79 13 8</td>
<td>76 24</td>
</tr>
<tr>
<td>Maintain up-to-date problem list of active diagnoses</td>
<td>76 21 3</td>
<td>79 22</td>
</tr>
<tr>
<td>Generate lists of patients by specific condition</td>
<td>72 20 9</td>
<td>61 39</td>
</tr>
<tr>
<td>Generate and transmit permissible prescriptions electronically</td>
<td>69 28 3</td>
<td>62 38</td>
</tr>
<tr>
<td>Conduct drug-drug, drug-allergy, and drug-formulary checks</td>
<td>65 26 9</td>
<td>59 42</td>
</tr>
<tr>
<td>Check insurance eligibility</td>
<td>64 25 11</td>
<td>57 43</td>
</tr>
<tr>
<td>Generate patient reminders for guideline-based interventions and/or screening tests</td>
<td>63 18 20</td>
<td>63 37</td>
</tr>
<tr>
<td>CPOE* for medications, labs, radiology/imaging, or referrals</td>
<td>58 32 10</td>
<td>48 52</td>
</tr>
<tr>
<td>Submit data electronically to public health agencies</td>
<td>37 35 28</td>
<td>33 67</td>
</tr>
</tbody>
</table>

*CPOE = computerized provider order entry

NOTE: Percentages may not total 100% due to rounding.
Primary Concerns about EHR Implementation

The practices that do not currently have an EHR system in place were asked to indicate to what degree they are concerned with several issues related to EHR implementation. The primary concerns among those without an EHR relate to the cost and potential for disruption to practice workflow.

- For nine out of ten practices without an EHR, the initial costs of implementation are either a major (81 percent) or medium concern (13 percent).
- For a similar proportion, the recurring costs of an EHR system are either a major (57 percent) or medium concern (35 percent).
- Disruption to practice workflow is either a major (48 percent) or medium concern (31 percent) of practices without an EHR.

These practices also have significant concerns about which EHR system to purchase and are worried that the EHR they choose might become obsolete. The table below provides a detailed look at the concerns among practices that do not currently have an EHR.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Major concern</th>
<th>Medium concern</th>
<th>Minor concern</th>
<th>Not a concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial costs of implementation</td>
<td>81%</td>
<td>13%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>Recurring costs of EHR system</td>
<td>57</td>
<td>35</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Disruption to practice workflow</td>
<td>48</td>
<td>31</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Unsure which EHR system to purchase</td>
<td>48</td>
<td>17</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Worry that EHR choice will become obsolete</td>
<td>32</td>
<td>23</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>Patient privacy</td>
<td>18</td>
<td>22</td>
<td>38</td>
<td>22</td>
</tr>
<tr>
<td>No clear business value</td>
<td>14</td>
<td>21</td>
<td>19</td>
<td>45</td>
</tr>
<tr>
<td>Familiarity with computer technology</td>
<td>14</td>
<td>36</td>
<td>35</td>
<td>16</td>
</tr>
<tr>
<td>Internet access availability and reliability</td>
<td>12</td>
<td>27</td>
<td>24</td>
<td>37</td>
</tr>
</tbody>
</table>

NOTE: Percentages may not total 100% due to rounding.

PRACTICES WHERE IT IS UNCERTAIN WHETHER PROVIDERS WILL APPLY

A total of 905 practices were uncertain whether any of their providers plan to apply for the Medicaid incentive for EHR adoption. The practices represent a total of 2,885 providers:

- 1,986 physicians (other than pediatricians)
- 280 physician assistants
- 246 nurse practitioners
- 195 dentists
- 156 pediatricians
- 22 certified nurse mid-wives
While respondents were unsure about the plans of their providers to apply for the incentive, many still provided estimates of how many providers in their practice would apply, as follows:

- 573 physicians (other than pediatricians)
- 68 dentists
- 61 physician assistants
- 54 pediatricians
- 37 nurse practitioners
- 2 certified nurse midwives

Of these practices, however, only 31 percent (about 282 practices) report that 30 percent or more of their practice’s annual patient encounters are covered by Medicaid, and, therefore, have providers who are potentially eligible to apply. The vast majority (89 percent) indicate that less than 90 percent of the care that the practice provides is based in a hospital or hospital-owned facility.

**Practice Size**

Practices that are uncertain whether their providers will apply range in size from one to 194 providers. The average practice size is 3 providers. The median practice size is 2 providers. The vast majority (96 percent) have ten or fewer providers.

<table>
<thead>
<tr>
<th>Practice Size</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solo</td>
<td>43%</td>
</tr>
<tr>
<td>Two providers</td>
<td>22</td>
</tr>
<tr>
<td>3–10 providers</td>
<td>31</td>
</tr>
<tr>
<td>11 or more providers</td>
<td>4</td>
</tr>
</tbody>
</table>

**Practice Type**

A plurality (44 percent) of practices that are uncertain whether any providers will apply for the incentive are single specialty practices (not primary care). The next largest cohort are primary care practices (29 percent). The following table shows the percentage of respondents by practice type.

<table>
<thead>
<tr>
<th>Type of practice</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single specialty practice (not primary care)</td>
<td>44%</td>
</tr>
<tr>
<td>Primary care practice</td>
<td>29</td>
</tr>
<tr>
<td>Nursing home or long-term care facility</td>
<td>9</td>
</tr>
<tr>
<td>Multi-specialty practice</td>
<td>5</td>
</tr>
<tr>
<td>Community mental health center</td>
<td>2</td>
</tr>
<tr>
<td>Community health center (FQHC, FQHC look-alike, RHC)</td>
<td>2</td>
</tr>
<tr>
<td>Home health agency or hospice agency</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
</tr>
</tbody>
</table>
**Current Use of and Future Plans for EHR**

Of those practices that are uncertain whether their providers will apply for the incentive, more than half (55 percent) currently use an electronic practice management system and 28 percent currently use an EHR system. Of those practices that use an EHR system, 24 percent report that it is certified by CCHIT, a similar proportion (27 percent) say their product is not certified by CCHIT, and nearly half (49 percent) are unsure whether their EHR is certified by CCHIT.

Smaller practices are less likely than larger practices to have either an electronic practice management system or EHR in place.

<table>
<thead>
<tr>
<th>Practice size</th>
<th>Currently use an electronic practice management system</th>
<th>Currently use an electronic health record</th>
</tr>
</thead>
<tbody>
<tr>
<td>One or two providers</td>
<td>55%</td>
<td>25%</td>
</tr>
<tr>
<td>3–10 providers</td>
<td>62</td>
<td>34</td>
</tr>
<tr>
<td>11 or more providers</td>
<td>66</td>
<td>38</td>
</tr>
</tbody>
</table>

About one-quarter of the practices that are uncertain whether any providers will apply for the incentive are planning to implement an EHR either in the next 12 months (12 percent) or the next 13 to 24 months (12 percent). A small number (3 percent) report that the practice has decided not to implement an EHR. Nearly half (47 percent) report that the practice has not yet decided whether to implement an EHR.

**EHR Function Availability and Use**

All of the functions listed in the table below, with the exception of submitting data electronically to public health agencies, are available and being used in a majority of the practices with an EHR system.

<table>
<thead>
<tr>
<th>Function</th>
<th>Is the function available?</th>
<th>Is the function used?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain active medication allergy list</td>
<td>79%</td>
<td>87%</td>
</tr>
<tr>
<td>Submit claims</td>
<td>77%</td>
<td>82%</td>
</tr>
<tr>
<td>Maintain active medication list</td>
<td>77%</td>
<td>84%</td>
</tr>
<tr>
<td>Maintain up-to-date problem list of active diagnoses</td>
<td>72%</td>
<td>83%</td>
</tr>
<tr>
<td>Generate a clinical summary of office visits for patients</td>
<td>68%</td>
<td>66%</td>
</tr>
<tr>
<td>Generate and transmit permissible prescriptions electronically</td>
<td>64%</td>
<td>58%</td>
</tr>
<tr>
<td>Generate lists of patients by specific condition</td>
<td>62%</td>
<td>61%</td>
</tr>
<tr>
<td>Generate patient reminders for guideline-based interventions and/or screening tests</td>
<td>57%</td>
<td>57%</td>
</tr>
<tr>
<td>CPOE* for medications, labs, radiology/imaging, or referrals</td>
<td>53%</td>
<td>55%</td>
</tr>
</tbody>
</table>
Is the function available? | Is the function used?
--- | --- | --- | --- | --- | ---
Check insurance eligibility | 51% | 33% | 16% | 51% | 50%
Conduct drug-drug, drug-allergy, and drug-formulary checks | 48 | 33 | 19 | 58 | 42
Submit data electronically to public health agencies | 26 | 42 | 31 | 35 | 65

*CPOE = computerized provider order entry
NOTE: Percentages may not total 100% due to rounding.

Primary Concerns about EHR Implementation

As with the practices whose providers are likely to apply for the incentive, the primary concerns among practices that are unsure whether their providers will apply relate to the cost and potential for disruption to practice workflow.

- For nine out of ten of those without an EHR, the initial costs of implementation are either a major (79 percent) or medium concern (13 percent).
- For a similar proportion, the recurring costs of an EHR system are either a major (56 percent) or medium concern (33 percent).
- Disruption to practice workflow is either a major (44 percent) or medium concern (33 percent) for 77 percent of those without an EHR.

These practices also have significant concerns about which EHR system to purchase and are worried that the EHR they choose might become obsolete. This category of practices is more concerned that there is no clear business value associated with an EHR than practices whose providers are likely to apply and be eligible for the incentive. The table below provides a detailed look at the concerns among practices that do not have an EHR.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Major concern</th>
<th>Medium concern</th>
<th>Minor concern</th>
<th>Not a concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial costs of implementation</td>
<td>79%</td>
<td>13%</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Recurring costs of EHR system</td>
<td>56</td>
<td>33</td>
<td>78</td>
<td>4</td>
</tr>
<tr>
<td>Unsure which EHR system to purchase</td>
<td>46</td>
<td>27</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Disruption to practice workflow</td>
<td>44</td>
<td>33</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>Worry that EHR choice will become obsolete</td>
<td>31</td>
<td>28</td>
<td>24</td>
<td>18</td>
</tr>
<tr>
<td>No clear business value</td>
<td>23</td>
<td>23</td>
<td>21</td>
<td>33</td>
</tr>
<tr>
<td>Patient privacy</td>
<td>21</td>
<td>26</td>
<td>34</td>
<td>20</td>
</tr>
<tr>
<td>Familiarity with computer technology</td>
<td>16</td>
<td>27</td>
<td>36</td>
<td>22</td>
</tr>
<tr>
<td>Internet access availability and reliability</td>
<td>13</td>
<td>20</td>
<td>28</td>
<td>38</td>
</tr>
</tbody>
</table>

NOTE: Percentages may not total 100% due to rounding.
PRACTICES WHOSE PROVIDERS ARE NOT PLANNING TO APPLY

A total of 557 practices indicated that none of their providers are planning to apply for the Medicaid incentive for EHR adoption. The practices represent 1,662 providers:

- 1,255 physicians (other than pediatricians)
- 129 dentists
- 117 physician assistants
- 105 nurse practitioners
- 46 pediatricians
- 10 certified nurse mid-wives

Very few of these practices (12 percent; 67 practices) indicated that 30 percent or more of their annual patient encounters are covered by Medicaid. The vast majority (90 percent) indicate that less than 90 percent of the care that their practice provides is based in a hospital or hospital-owned facility.

Practice Size

The size of the practices whose providers are unlikely to apply ranges from one to 93 providers. The average practice size is 3 providers. The median practice size is one provider. The vast majority (96 percent) have ten or fewer providers.

<table>
<thead>
<tr>
<th>Practice Size</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solo</td>
<td>51%</td>
</tr>
<tr>
<td>Two providers</td>
<td>18</td>
</tr>
<tr>
<td>3–10 providers</td>
<td>27</td>
</tr>
<tr>
<td>11 or more providers</td>
<td>4</td>
</tr>
</tbody>
</table>

Practice Type

About half of practices whose providers are unlikely to apply (52 percent) are single specialty practices (not primary care). About one-third (32 percent) are primary care practices. The following table shows the percentage of respondents by practice type.

<table>
<thead>
<tr>
<th>Type of practice</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single specialty practice (not primary care)</td>
<td>52%</td>
</tr>
<tr>
<td>Primary care practice</td>
<td>32%</td>
</tr>
<tr>
<td>Multi-specialty practice</td>
<td>6%</td>
</tr>
<tr>
<td>Nursing home or long-term care facility</td>
<td>2%</td>
</tr>
<tr>
<td>Community mental health center</td>
<td>1%</td>
</tr>
<tr>
<td>Community health center (FQHC, FQHC look-alike, RHC)</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Home health agency or hospice agency</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>7%</td>
</tr>
</tbody>
</table>

NOTE: Percentages may not total 100% due to rounding.
**Current Use of and Future Plans for EHR**

Among practices whose providers are unlikely to apply for the incentive, 52 percent currently use an electronic practice management system and 24 percent currently use an EHR system. Of those practices that use an EHR system, roughly equal proportions report that it is certified by CCHIT (36 percent), that it is not certified by CCHIT (34 percent), or that they are unsure whether their EHR is certified by CCHIT (31 percent).

Smaller practices are less likely than larger practices to have either an electronic practice management system or EHR in place.

<table>
<thead>
<tr>
<th>Practice Size</th>
<th>Currently use an electronic practice management system</th>
<th>Currently use an electronic health record</th>
</tr>
</thead>
<tbody>
<tr>
<td>One or two providers</td>
<td>45%</td>
<td>18%</td>
</tr>
<tr>
<td>3–10 providers</td>
<td>67</td>
<td>36</td>
</tr>
<tr>
<td>11 or more providers</td>
<td>71</td>
<td>48</td>
</tr>
</tbody>
</table>

About one-fifth of the practices whose providers are unlikely to apply for the incentive are planning to implement an EHR either in the next 12 months (10 percent) or the next 13 to 24 months (10 percent). A similar proportion (22 percent) report that the practice has decided not to implement an EHR. About one-third (33 percent) report that the practice has not yet decided whether to implement an EHR.

**EHR Function Availability and Use**

Among those practices that report having an EHR system in place, all of the functions listed in the table below with the exception of submitting data electronically to public health agencies are available and being used.

<table>
<thead>
<tr>
<th>Function</th>
<th>Is the function available?</th>
<th>Is the function used?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain active medication allergy list</td>
<td>Yes 86%</td>
<td>No 10%</td>
</tr>
<tr>
<td>Maintain active medication list</td>
<td>82</td>
<td>13</td>
</tr>
<tr>
<td>Submit claims</td>
<td>81</td>
<td>15</td>
</tr>
<tr>
<td>Maintain up-to-date problem list of active diagnoses</td>
<td>77</td>
<td>12</td>
</tr>
<tr>
<td>Generate a clinical summary of office visits for patients</td>
<td>73</td>
<td>17</td>
</tr>
<tr>
<td>Generate and transmit permissible prescriptions electronically</td>
<td>71</td>
<td>23</td>
</tr>
<tr>
<td>Generate lists of patients by specific condition</td>
<td>69</td>
<td>18</td>
</tr>
<tr>
<td>Conduct drug-drug, drug-allergy, and drug-formulary checks</td>
<td>62</td>
<td>30</td>
</tr>
<tr>
<td>Check insurance eligibility</td>
<td>56</td>
<td>31</td>
</tr>
<tr>
<td>Generate patient reminders for guideline-based interventions and/or screening tests</td>
<td>56</td>
<td>27</td>
</tr>
</tbody>
</table>
Is the function available? | Is the function used?
---|---
CPOE* for medications, labs, radiology/imaging, or referrals | Yes | No | Unsure | Yes | No |
CPOE for medications, labs, radiology/imaging, or referrals | 56 | 26 | 17 | 59 | 41 |
Submit data electronically to public health agencies | 29 | 40 | 32 | 29 | 71 |

*CPOE = computerized provider order entry
NOTE: Percentages may not total 100% due to rounding.

**Primary Concerns about EHR Implementation**

The primary concerns among practices whose providers do not plan to apply for the incentive, like those of the other two categories of practices, relate to the cost and potential for disruption to practice workflow.

- For 87 percent of those without an EHR, the initial costs of implementation are either a major (75 percent) or medium concern (12 percent).
- For a similar proportion, the recurring costs of an EHR system are either a major (59 percent) or medium concern (24 percent).
- Disruption to practice workflow is either a major (51 percent) or medium concern (28 percent) for 78 percent of those without an EHR.

These practices appear to be much more concerned with the lack of a clear business value for an EHR system than are the other two categories of practices. They also have significant concerns about which EHR system to purchase and are worried that the EHR they choose might become obsolete. The table below provides a detailed look at the concerns among practices that do not have an EHR.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Major concern</th>
<th>Medium concern</th>
<th>Minor concern</th>
<th>Not a concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial costs of implementation</td>
<td>75%</td>
<td>12%</td>
<td>5%</td>
<td>8%</td>
</tr>
<tr>
<td>Recurring costs of EHR system</td>
<td>59</td>
<td>24</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Disruption to practice workflow</td>
<td>51</td>
<td>28</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>No clear business value</td>
<td>40</td>
<td>20</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>Unsure which EHR system to purchase</td>
<td>36</td>
<td>24</td>
<td>12</td>
<td>28</td>
</tr>
<tr>
<td>Worry that EHR choice will become obsolete</td>
<td>28</td>
<td>29</td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td>Patient privacy</td>
<td>26</td>
<td>21</td>
<td>29</td>
<td>24</td>
</tr>
<tr>
<td>Familiarity with computer technology</td>
<td>17</td>
<td>27</td>
<td>29</td>
<td>27</td>
</tr>
<tr>
<td>Internet access availability and reliability</td>
<td>15</td>
<td>19</td>
<td>28</td>
<td>38</td>
</tr>
</tbody>
</table>

NOTE: Percentages may not total 100% due to rounding.
Findings for All Practices with Potentially Eligible Providers

The MSA believes that once eligible providers become more familiar with the EHR adoption incentive, they will be more likely to apply. For that reason, survey responses have also been analyzed based on the responses from practices that indicated at least 30 percent of their annual patient encounters are covered by Medicaid, regardless of whether they indicated any plans to apply for the incentive. As described earlier, the percentage of encounters covered by Medicaid is not the only criterion by which providers will be deemed eligible, but it serves as a useful proxy for potentially eligible providers.

A total of 615 practices (28 percent of all responding practices) reported that at least 30 percent of their annual patient encounters are covered by Medicaid. Of these, 43 percent report that providers in the practice plan to apply for the EHR adoption incentive; 11 percent say that no providers plan to apply; and 46 percent are unsure whether any providers in the practice plan to apply for the incentive.

The practices that reported having at least 30 percent of their practice’s annual patient encounters covered by Medicaid represent a total of 2,660 providers:

- 1,575 physicians (other than pediatricians)
- 285 nurse practitioners
- 275 dentists
- 258 physician assistants
- 229 pediatricians
- 38 certified nurse-midwives

These practices estimate that 1,403 of these providers will apply for the incentive, as follows:

- 767 physicians (other than pediatricians)
- 162 nurse practitioners
- 160 dentists
- 148 pediatricians
- 146 physician assistants
- 20 certified nurse-midwives

**Practice Size**

Practices whose providers are likely to be eligible for the incentive range in size from one to 104 providers. The average practice size is 4 providers. The median practice size is 2 providers. The vast majority (92 percent) have ten or fewer providers.
Practice Size

<table>
<thead>
<tr>
<th>Practice Size</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solo</td>
<td>36%</td>
</tr>
<tr>
<td>Two providers</td>
<td>19</td>
</tr>
<tr>
<td>3–10 providers</td>
<td>37</td>
</tr>
<tr>
<td>11 or more providers</td>
<td>8</td>
</tr>
</tbody>
</table>

Practice Type

A plurality (34 percent) of practices whose providers are likely to be eligible for the incentive are primary care practices. Another 6 percent are community health centers, which also deliver primary care services. Nearly a quarter of the practices (22 percent) are single specialty practices. The following table shows the percentage of respondents by practice type.

<table>
<thead>
<tr>
<th>Type of practice</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care practice</td>
<td>34%</td>
</tr>
<tr>
<td>Single specialty practice (not primary care)</td>
<td>22</td>
</tr>
<tr>
<td>Nursing home or long-term care facility</td>
<td>17</td>
</tr>
<tr>
<td>Community health center (FQHC, FQHC look-alike, RHC)</td>
<td>6</td>
</tr>
<tr>
<td>Community mental health center</td>
<td>6</td>
</tr>
<tr>
<td>Multi-specialty practice</td>
<td>4</td>
</tr>
<tr>
<td>Home health agency or hospice agency</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
</tr>
</tbody>
</table>

Current Use of and Future Plans for EHR

Of those practices who are likely to be eligible for the incentive, 51 percent currently use an electronic practice management system; 31 percent currently use an EHR system. Of those practices that use an EHR system, 23 percent report that it is certified by CCHIT. About a third (31 percent) say their product is not certified by CCHIT, and 46 percent are unsure whether their EHR is certified by CCHIT.

About one-third of the practices whose providers are likely to be eligible for the incentive are planning to implement an EHR either in the next 12 months (19 percent) or the next 13 to 24 months (14 percent). A small number (5 percent) report that the practice has decided not to implement an EHR. Nearly a third (32 percent) report that the practice has not yet decided whether to implement an EHR.

EHR Function Availability and Use

As with the practice categories previously discussed in this report, all of the functions listed in the table below, with the exception of submitting data electronically to public health agencies, are available and being used in a majority of practices with an EHR system.
<table>
<thead>
<tr>
<th>Function</th>
<th>Is the function available?</th>
<th>Is the function used?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain active medication allergy list</td>
<td>84% 12% 4%</td>
<td>88% 12%</td>
</tr>
<tr>
<td>Submit claims</td>
<td>78 14 8</td>
<td>76 24</td>
</tr>
<tr>
<td>Maintain active medication list</td>
<td>77 18 5</td>
<td>78 22</td>
</tr>
<tr>
<td>Maintain up-to-date problem list of active diagnoses</td>
<td>75 19 7</td>
<td>82 18</td>
</tr>
<tr>
<td>Conduct drug-drug, drug-allergy, and drug-formulary checks</td>
<td>54 30 16</td>
<td>58 42</td>
</tr>
<tr>
<td>Generate lists of patients by specific condition</td>
<td>65 24 11</td>
<td>62 38</td>
</tr>
<tr>
<td>Generate a clinical summary of office visits for patients</td>
<td>65 22 14</td>
<td>66 34</td>
</tr>
<tr>
<td>Generate and transmit permissible prescriptions electronically</td>
<td>61 33 6</td>
<td>55 45</td>
</tr>
<tr>
<td>Check insurance eligibility</td>
<td>56 32 12</td>
<td>56 44</td>
</tr>
<tr>
<td>CPOE* for medications, labs, radiology/imaging, or referrals</td>
<td>54 35 11</td>
<td>51 49</td>
</tr>
<tr>
<td>Generate patient reminders for guideline-based interventions and/or screening tests</td>
<td>54 27 19</td>
<td>56 44</td>
</tr>
<tr>
<td>Submit data electronically to public health agencies</td>
<td>38 36 26</td>
<td>41 59</td>
</tr>
</tbody>
</table>

*CPOE = computerized provider order entry
NOTE: Percentages may not total 100% due to rounding.

**Primary Concerns about EHR Implementation**

As with the other types of practice categories analyzed in this report, the primary concerns among practices that are likely to have eligible providers relate to the cost and potential for disruption to practice workflow.

- For 91 percent of those without an EHR, the initial costs of implementation are either a major (79 percent) or medium concern (12 percent).
- For a similar proportion, the recurring costs of an EHR system are either a major (57 percent) or medium concern (31 percent).
- Disruption to practice workflow is either a major (41 percent) or medium concern (33 percent) for 74 percent of those without an EHR.

These practices also have significant concerns about which EHR system to purchase and are worried that the EHR they choose might become obsolete. The table below provides a detailed look at the concerns among practices that do not have an EHR.
<table>
<thead>
<tr>
<th>Issue</th>
<th>Major concern</th>
<th>Medium concern</th>
<th>Minor concern</th>
<th>Not a concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial costs of implementation</td>
<td>79%</td>
<td>12%</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>Recurring costs of EHR system</td>
<td>57</td>
<td>31</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Unsure which EHR system to purchase</td>
<td>45</td>
<td>21</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>Disruption to practice workflow</td>
<td>41</td>
<td>33</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>Worry that EHR choice will become obsolete</td>
<td>31</td>
<td>24</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>Patient privacy</td>
<td>19</td>
<td>26</td>
<td>32</td>
<td>23</td>
</tr>
<tr>
<td>Familiarity with computer technology</td>
<td>17</td>
<td>28</td>
<td>35</td>
<td>19</td>
</tr>
<tr>
<td>Internet access availability and reliability</td>
<td>13</td>
<td>22</td>
<td>27</td>
<td>37</td>
</tr>
<tr>
<td>No clear business value</td>
<td>13</td>
<td>21</td>
<td>18</td>
<td>42</td>
</tr>
</tbody>
</table>

NOTE: Percentages may not total 100% due to rounding.
Other Considerations

It is important to note that responses were not received from 7,808 practices. (The total number of non-responding practices is certainly less than that, however, due to the potential for providers being mailed a survey both as a sole proprietor and as part of a group.) It is impossible to know whether any of the providers in these non-responding practices intend to apply for the incentive, much less whether they will be eligible for the incentive. It is also unknown whether the practices that did not reply are like the practices that responded (e.g., practice size and type or current use of EHR). However, a high estimate of the number of practices that may have providers who are eligible for the incentive can be calculated as follows.

As described in the body of the report, 28 percent of the practices that responded to the survey reported that at least 30 percent of their annual patient encounters are attributable to Medicaid. If 28 percent of the non-responding practices also have at least 30 percent of their patient volume attributable to Medicaid, an additional 2,186 practices may have providers who are eligible for the incentive. As noted above, there is no way of knowing how many providers or what types of providers are represented by these practices.

Based on responses to the survey described in this report, a minimum of 214 practices have providers who plan to apply for the incentive and are also likely to be eligible. However, if all of the practices that responded to the survey and appear to be eligible were to apply, this number will increase to 615 practices. If survey non-respondents are eligible for the incentive in the same proportion as those who responded to the survey, the number of practices whose providers apply for the incentive may be as high as 2,801.
Appendix B: 2010 Medicaid Provider Survey Instrument
This information is being collected by the Michigan Department of Community Health (MDCH) to identify current interest in and use of electronic health records (EHRs) by health professionals in Michigan. The information will assist the MDCH in implementing the federal Medicaid EHR incentive program in Michigan. It will also help the MDCH develop a long-term state Medicaid health information technology (HIT) plan.

To best meet our planning needs, only one survey should be completed for each practice. If you are part of a group practice with multiple locations, complete one survey for each practice location. The information you provide is anonymous; no individually identifiable information is collected in this survey. Your participation is encouraged and appreciated. Please complete the survey and return it in the envelope provided.

If you prefer, you may complete the survey online by going to www.michiganhealthit.org.

### 1. Do any providers in your practice plan to apply for the Medicaid incentive for EHR adoption?

(Individual providers can apply for either the Medicaid incentive or the Medicare incentive, not both.)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Yes</td>
<td>□</td>
</tr>
<tr>
<td>b) No</td>
<td>□</td>
</tr>
<tr>
<td>c) Unsure</td>
<td>□</td>
</tr>
</tbody>
</table>

### 2. For each provider type listed provide a number for both columns.

<table>
<thead>
<tr>
<th>Provider Type</th>
<th>Number of Each Provider Type in Your Practice</th>
<th>Estimate How Many of These Providers Plan to Apply for the Medicaid Incentive for EHR Adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Physician (other than a pediatrician)</td>
<td>□ □ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □ □</td>
</tr>
<tr>
<td>2) Pediatrician</td>
<td>□ □ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □ □</td>
</tr>
<tr>
<td>3) Dentist</td>
<td>□ □ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □ □</td>
</tr>
<tr>
<td>4) Certified nurse-midwife</td>
<td>□ □ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □ □</td>
</tr>
<tr>
<td>5) Nurse practitioner</td>
<td>□ □ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □ □</td>
</tr>
<tr>
<td>6) Physician assistant</td>
<td>□ □ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □ □</td>
</tr>
</tbody>
</table>

Please note: For each answer, the number in column B should not be greater than the number in column A.

### 3. Which best describes your practice? (Mark one.)

| a) Primary care practice | □ |
| b) Single specialty practice (not primary care) | □ |
| c) Multi-specialty practice | □ |
| d) Community health center (FQHC, FQHC look-alike, RHC) | □ |
| e) Community mental health center | □ |
| f) Home health agency or hospice agency | □ |
| g) Nursing home or long-term care facility | □ |
| h) Other | □ |

### 4. What percentage of the care that your practice provides is based in a hospital or hospital-owned facility?

| a) Less than 90% | □ |
| b) 90% or more | □ |

### 5. About how many patient encounters does your practice handle on an annual basis? (Please provide your best estimate.)

### 6. What percentage of your practice’s annual patient encounters is covered by Medicaid?

| a) Less than 10% | □ |
| b) 10–19% | □ |
| c) 20–29% | □ |
| d) 30–39% | □ |
| e) 40–49% | □ |
| f) 50% or more | □ |
The following questions are about interest in and current use of electronic health systems in your practice.

7. Does your practice currently use an electronic health record (EHR) system?
   a) Yes .............................................. A
   b) No .............................................. B
   c) Unsure .......................................... C

8. Does your practice currently use an electronic health record (EHR) system?
   a) Yes .............................................. A
   b) No .............................................. B
   c) Unsure .......................................... C

9. If your practice uses an EHR system, is your EHR product certified by the Certification Commission for Health Information Technology (CCHIT)?
   a) Yes .............................................. A
   b) No .............................................. B
   c) Unsure .......................................... C

10. What is the extent of EHR planning and implementation in your practice? (Mark one.)
    a) Fully implemented / used by all providers ........................................ A
    b) Used by some of the providers ...................................................... B
    c) Implementation is planned in the next 12 months ............................ C
    d) Implementation is planned in the next 12–24 months ......................... D
    e) We have decided not to implement an EHR ...................................... E
    f) No decision has been made about implementing an EHR ..................... F

The following question is for practices that currently have an EHR system in place.
Skip to question 12 if you do not use an EHR system.

11. Please tell us whether the following EHR functions are available in your EHR system and indicate whether the function is being used.

<table>
<thead>
<tr>
<th>Function</th>
<th>Is the function available?</th>
<th>Is the function used?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Conduct drug-drug, drug-allergy, and drug-formulary checks</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>b) Generate lists of patients by specific conditions</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>c) Generate patient reminders for guideline-based interventions</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>and/or screening tests</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>d) Submit data electronically to public health agencies (including</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Michigan Care Improvement Registry [MCIR])</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>e) Generate and transmit permissible prescriptions electronically</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>(e-prescribing)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>f) Computerized provider order entry (CPOE) for medications, labs,</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>radiology/imaging, or referrals</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>g) Generate a clinical summary of office visits for patients</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>h) Maintain up-to-date problem list of active diagnoses</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>i) Maintain active medication allergy list</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>j) Maintain active medication list</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>k) Check insurance eligibility</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>l) Submit claims</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

The following question is for practices that do not currently have an EHR system in place.

12. To what degree are the following issues a concern for implementation of an EHR system in your practice?

<table>
<thead>
<tr>
<th>Function</th>
<th>MAJOR CONCERN</th>
<th>MEDIUM CONCERN</th>
<th>MINOR CONCERN</th>
<th>NOT A CONCERN</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Unsure which EHR system to purchase</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>b) Worry that EHR choice will become obsolete</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>c) Initial costs of implementation</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>d) Recurring costs of EHR system</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>e) Disruption to practice workflow</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>f) Patient privacy</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>g) Familiarity with computer technology</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>h) Internet access availability and reliability</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>i) No clear business value</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
</tbody>
</table>

Thank You!
Appendix C: December 2011 Findings of the Medicaid Provider Survey
Findings of the Medicaid Provider Scan

December 2011

Prepared For
Medical Services Administration
Michigan Department of Community Health

Prepared By
Public Sector Consultants Inc.
Lansing, Michigan
www.pscinc.com
Introduction

The Medical Services Administration (MSA) in the Michigan Department of Community Health (MDCH) engaged Public Sector Consultants (PSC) to conduct a survey of Medicaid providers in order to identify the extent to which these providers intend to apply for the Medicaid incentive for adoption of an electronic health record (EHR) system. Approximately 5,500 surveys were mailed to practices of current Medicaid providers using a mailing list pulled from the Community Health Automated Medicaid Processing System (CHAMPS) Provider Enrollment. The resulting mailing list comprised the following groups: physicians, nurse practitioners, certified nurse-midwives, individual dental professionals (excluding hygienists), dental groups, Federally Qualified Health Centers (FQHCs), Rural Health Clinics (RHCs), Tribal Health Centers (THCs), and Michigan’s Tribes.

To assure at least one response from practices with multiple providers, duplicate addresses were not removed from the mailing list. The mailing included a cover letter addressed to the “practice administrator” for each individual provider requesting that only one survey be completed for the practice.

There were approximately 3,500 unique addresses in the mailing list. Responses were received from 434 practices for a response rate of 12.4 percent. More respondents completed the survey on paper (323) than did online (111).

Survey questions were designed to identify

- how many providers might apply for the incentive,
- the size and types of practices from which providers will apply,
- the extent of current and future EHR use among responding practices,
- the ways in which EHRs are currently being used by practices, and
- the major concerns about EHR implementation among practices that do not currently have an EHR system in place.

Eligibility for the incentive is based on two primary criteria. Eligible providers must have at least 30 percent of their patient volume attributable to Medicaid. In addition, eligible providers cannot be “hospital-based.” (Hospital-based is defined as providing 90 percent or more of care in a hospital or hospital-owned facility.) There are a few exceptions to these criteria. Pediatricians are required to have only 20 percent of patient encounters attributable to Medicaid. Providers who work predominantly in an FQHC or a rural health clinic are not subject to the rule regarding hospital-based care; that is, 90 percent or more of the care they provide can be hospital-based. (However, providers who work predominantly in FQHCs and RHCs must have at least 30 percent of patient volume attributable to “needy individuals.”)

The findings in this report are divided into four categories:

- Practices with providers who plan to apply and are likely to be eligible for the Medicaid incentive;
• Practices in which no providers are likely to apply for either incentive or it is uncertain whether any providers will apply;
• Practices with providers who have already applied for an incentive; and
• Practices with providers who are likely to apply for the Medicare incentive.

While the MSA’s primary concern is with the first category, it is also helpful to have some understanding of the characteristics of practices in the other categories. Of the 434 practices who responded to the survey:

• 39 practices have providers who plan to apply and are likely to be eligible for the Medicaid incentive;
• 27 practices reported their providers do not plan to apply for either incentive or it is uncertain whether any providers will apply, but they are likely to be eligible for the Medicaid incentive;
• 37 practices have already applied for an incentive (either the Medicaid or Medicare incentive); and
• 58 practices plan to apply for the Medicare incentive.

There were 102 practices that responded to the survey without answering the question about their plans to apply for the Medicaid or Medicare incentive for EHR adoption. The responses from these practices could not be separated and analyzed according to the categories described above. The survey responses for this group of practices show that about 25 percent of these respondents would meet the Medicaid EHR incentive criteria of at least 30 percent of their annual patient encounters covered by Medicaid. The responses for this group also show that about 41 percent of these practices have already adopted, begun using, or upgraded/expanded an EHR system.

It is important to note that responses were not received from approximately 3,000 practices included in the mailing. It is impossible to know whether any of the providers in these non-responding practices intend to apply for either incentive, much less whether they will be eligible for the incentive.
Key Findings

NUMBER OF PROVIDERS LIKELY TO APPLY AND BE ELIGIBLE

There were 61 respondents who reported that providers in their practice plan to apply for the Medicaid incentive for EHR adoption. Of these practices, 39 have providers who are likely to be eligible for the incentive. These practices reported that at least 30 percent of their annual patient encounters are covered by Medicaid and less than 90 percent of care provided by the practice is based in a hospital or hospital-owned facility. These 39 practices represent 147 providers. Of these providers, 128 who plan to apply for the Medicaid incentive are composed of the following provider types:

- 28 physicians (other than pediatricians)
- 11 pediatricians
- 53 dentists
- 20 nurse practitioners
- 14 physician assistants
- 1 certified nurse-midwife
- 1 other provider type

Exceptions to the eligibility criteria may result in successful applications for the Medicaid incentive from the following additional providers:

- 13 physicians (other than pediatricians)
- 3 pediatricians
- 3 nurse practitioners
- 4 physician assistants

This results in a total of 151 providers who reported they plan to apply and may be eligible for the Medicaid incentive.

A total of 176 practices indicated that none of their providers plan to apply or it is uncertain whether any of their providers plan to apply for either the Medicaid or Medicare incentive. Only 27 of these practices (15 percent) meet both criteria and may be eligible to apply for the Medicaid incentive. If the providers in these practices decide to apply for this incentive, they could add 84 providers to the pool of applicants as follows:

- 19 physicians (other than pediatricians)
- 5 pediatricians
- 34 dentists
- 4 nurse practitioners
- 2 physician assistants
- 20 other provider types

---

1 See the full report of survey findings for an explanation of these figures.
PRACTICE SIZE
The practice size of the providers who are likely to apply and be eligible for the Medicaid incentive ranges from one to 30 providers. Similar to the survey results in 2010, the vast majority, about 92 percent, have ten or fewer providers.

PRACTICE TYPE
In 2011, a larger proportion of the practices with providers who are likely to apply and be eligible for the Medicaid incentive are primary care practices (62 percent in 2011 compared to 44 percent in 2010). An additional 8 percent are categorized as an FQHC, FQHC look-alike, or RHC, which also mainly deliver primary care services.

As in 2010, most of the practices in which no providers plan to apply or it is uncertain whether any providers will apply for an incentive are single specialty practices (35 percent) or primary care practices (31 percent). However, in 2011 a large proportion of these practices (27 percent) chose “other” as the best description for their practice type.

CURRENT USE OF AND FUTURE PLANS FOR EHR
Practices with providers who are likely to apply and be eligible for the Medicaid incentive are more likely to currently use an EHR system than practices where either no providers plan to apply or it is uncertain whether any providers will apply.

- Of 39 practices that are likely to apply and be eligible for the incentive, 16 (41 percent) report they have already adopted, begun using, or upgraded/expanded an EHR system.
- Of 27 practices in which no providers plan to apply or it is uncertain whether any providers will apply for the incentive, only 3 (11 percent) report they have already adopted, begun using, or upgraded/expanded an EHR system.

Seventeen (63 percent) of the practices in which no providers plan to apply or it is uncertain whether any providers will apply for the incentive report that the practice has not yet decided whether to implement an EHR. Three practices (11 percent) report that they have decided not to implement an EHR. Four practices (15 percent) did not report the extent of their EHR planning and implementation.

Additional findings regarding EHR use are as follows:

- Practices that have already adopted, begun using, or upgraded/expanded an EHR system and plan to apply for the Medicaid incentive reported that almost all of the functions for meaningful use are available in a large majority of their EHR systems.
- There are significant differences between the reported availability of certain functions and use of the function. For example, while 100 percent of the practices reported that generating a clinical summary of office visits for patients is an available function, only 63 percent report using this function.
- Practices that do not currently have an EHR system in place are concerned primarily with the costs of implementing and maintaining an EHR, potential for disruption to practice workflow, and uncertainty about which EHR system to purchase.
Survey Findings

This section of the report provides detailed survey findings for the following categories of respondents:

- Practices with providers who are likely to apply and be eligible for the incentive;
- Practices in which no providers are likely to apply for either incentive or it is uncertain whether any providers will apply;
- Practices with providers who have already applied for an incentive; and
- Practices with providers who plan to apply for the Medicare incentive.

PRACTICES WITH PROVIDERS WHO ARE LIKELY TO APPLY

There were 61 respondents who reported that providers in their practice plan to apply for the Medicaid incentive for EHR adoption. Of these, however, only 39 (64 percent) reported that less than 90 percent of the care that their practice provides is based in a hospital or hospital-owned facility and that 30 percent or more of their practice’s annual patient encounters are covered by Medicaid. The analysis in this section of the report is focused on these 39 practices, which not only have providers who are likely to apply for the incentive, but are also the most likely to be eligible for the incentive.

These practices represent 147 providers:

- 30 physicians (other than pediatricians)
- 13 pediatricians
- 65 dentists
- 21 nurse practitioners
- 16 physician assistants
- 1 certified nurse-midwife
- 1 other provider type

These practices estimated that the vast majority of their providers (128 out of 147) plan to apply for the incentive:

- 28 physicians (other than pediatricians)
- 11 pediatricians
- 53 dentists
- 20 nurse practitioners
- 14 physician assistants
- 1 certified nurse-midwife
- 1 other provider type

These 39 practices do not include practices with pediatricians for whom 20 to 29 percent of annual patient encounters are covered by Medicaid, nor do they include FQHCs or RHCs where 90 percent or more of the care provided is based in a hospital or hospital-
owned facility. The number of additional practices responding to the survey in these two categories is 2 and 1, respectively. There are 2 additional pediatricians who may apply and be eligible for the incentive based on the lower required level of patient volume attributable to Medicaid for pediatricians. Additional providers who work predominantly in an eligible FQHC or RHC and may apply for the incentive are as follows: 13 physicians, 1 pediatrician, 3 nurse practitioners, and 4 physician assistants. This results in a total of 151 providers who reported they plan to apply and may be eligible for the incentive.

**Practice Size**

Among those who responded to the 2011 survey, the practice size of the providers who are likely to apply and be eligible for the incentive ranges from one to 30 providers. The vast majority (about 92 percent) have ten or fewer providers. This proportion is similar to data reported in 2010 when 90 percent of the practices that were likely to apply and be eligible had ten or fewer providers.

<table>
<thead>
<tr>
<th>Practice Size</th>
<th>2011 Percentage</th>
<th>2010 Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solo</td>
<td>44%</td>
<td>36%</td>
</tr>
<tr>
<td>Two providers</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>3–10 providers</td>
<td>28</td>
<td>31</td>
</tr>
<tr>
<td>11 or more providers</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

NOTE: Percentages do not total 100% due to rounding.

**Practice Type**

In 2011, a larger proportion of the practices with providers who are likely to apply and be eligible for the incentive are primary care practices (62 percent in 2011 compared to 44 percent in 2010). An additional 8 percent are categorized as an FQHC, FQHC look-alike, or RHC, which also mainly deliver primary care services. The following table shows the percentage of respondents by practice type.

<table>
<thead>
<tr>
<th>Type of Practice</th>
<th>2011 Percentage</th>
<th>2010 Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care practice</td>
<td>62%</td>
<td>44%</td>
</tr>
<tr>
<td>Single specialty practice (not primary care)</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>Community health center (FQHC, FQHC look-alike, RHC)</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Nursing home or long-term care facility</td>
<td>–</td>
<td>9</td>
</tr>
<tr>
<td>Multi-specialty practice</td>
<td>–</td>
<td>6</td>
</tr>
<tr>
<td>Community mental health center</td>
<td>–</td>
<td>3</td>
</tr>
<tr>
<td>Home health agency or hospice agency</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Other</td>
<td>18</td>
<td>15</td>
</tr>
</tbody>
</table>

NOTE: Percentages do not total 100% due to rounding.

**Current Use of and Future Plans for EHR**

Of the 39 practices that are likely to apply and be eligible for the incentive, 16 (41 percent) report they have already adopted, begun using, or upgraded/expanded an EHR system. In 2011, of those practices that use an EHR system, 63 percent report that it is
ONC-certified compared to 44 percent that reported their EHR system was certified by the Certification Commission for Health Information Technology (CCHIT) in response to the 2010 survey. The remaining 37 percent say their EHR is not certified.

Approximately half (51 percent) of the practices that are likely to apply and be eligible for the incentive report that the practice has not yet decided whether to implement an EHR. Three practices (8 percent) did not report the extent of their EHR planning and implementation.

**EHR Function Availability and Use**

Practices that have an EHR in place were asked to indicate which functions are available in their EHR system and which functions are being used. In both 2010 and 2011, these practices reported that almost all of the functions listed in the tables below are available in a large majority of their EHR systems. In 2010, only 37 percent of the practices reported that submitting data electronically to public health agencies was available in their EHR systems, compared to 67 percent in 2011.

In the survey responses for 2011, there are significant differences between the reported availability of certain functions and use of the function. While 100 percent of the practices reported that generating a clinical summary of office visits for patients and generating and transmitting permissible prescriptions electronically are available functions, only 63 percent and 33 percent respectively report that the function is used. Similarly, while 67 percent of these practices report that submitting data electronically to public health agencies is an available function, only 13 percent report that this function is used. Response percentages are presented for 2011 and 2010 in the following tables.

<table>
<thead>
<tr>
<th>Function</th>
<th>2011 Survey</th>
<th>Is the function available?</th>
<th>Is the function used?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Unsure</td>
</tr>
<tr>
<td>Conduct drug-drug, drug-allergy, and drug-formulary checks</td>
<td>56</td>
<td>–</td>
<td>44</td>
</tr>
<tr>
<td>Generate lists of patients by specific condition</td>
<td>89</td>
<td>–</td>
<td>11</td>
</tr>
<tr>
<td>Generate patient reminders for guideline-based interventions and/or screening tests</td>
<td>44</td>
<td>11</td>
<td>44</td>
</tr>
<tr>
<td>Submit data electronically to public health agencies</td>
<td>67</td>
<td>22</td>
<td>11</td>
</tr>
<tr>
<td>Generate and transmit permissible prescriptions electronically</td>
<td>100</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>CPOE* for medications, labs, radiology/imaging, or referrals</td>
<td>56</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Generate a clinical summary of office visits for patients</td>
<td>100</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Maintain up-to-date problem list of active diagnoses</td>
<td>89</td>
<td>11</td>
<td>–</td>
</tr>
</tbody>
</table>

2 In the survey instrument for 2011, respondents were asked “…is your EHR product ONC-certified?”, whereas in the 2010 survey they were asked “…is your EHR product certified by the Certification Commission for Health Information and Technology (CCHIT)?”
### 2011 Survey

<table>
<thead>
<tr>
<th>Function</th>
<th>Is the function available?</th>
<th>Is the function used?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain active medication allergy list</td>
<td>89% – 11%</td>
<td>78% 22%</td>
</tr>
<tr>
<td>Maintain active medication list</td>
<td>89% – 11%</td>
<td>78% 22%</td>
</tr>
</tbody>
</table>

*CPOE = computerized provider order entry

NOTE: Percentages may not total 100% due to rounding. The percentage of respondents who reported the function as “used” may be higher than the percentage of respondents who reported the function as “available” because the total number of responses (denominator) for each question varies. In the 2011 survey, “submit claims” and “check insurance eligibility” were not included in the list of EHR functions since they are both more appropriately categorized as functions of an electronic practice management system.

### 2010 Survey

<table>
<thead>
<tr>
<th>Function</th>
<th>Is the function available?</th>
<th>Is the function used?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct drug-drug, drug-allergy, and drug-formulary checks</td>
<td>65% – 26% – 9%</td>
<td>59% 42%</td>
</tr>
<tr>
<td>Generate lists of patients by specific condition</td>
<td>72% 20% 9%</td>
<td>61% 39%</td>
</tr>
<tr>
<td>Generate patient reminders for guideline-based interventions and/or screening tests</td>
<td>63% 18% 20%</td>
<td>63% 37%</td>
</tr>
<tr>
<td>Submit data electronically to public health agencies</td>
<td>37% 35% 28%</td>
<td>33% 67%</td>
</tr>
<tr>
<td>Generate and transmit permissible prescriptions electronically</td>
<td>69% 28% 3%</td>
<td>62% 38%</td>
</tr>
<tr>
<td>CPOE* for medications, labs, radiology/imaging, or referrals</td>
<td>58% 32% 10%</td>
<td>48% 52%</td>
</tr>
<tr>
<td>Generate a clinical summary of office visits for patients</td>
<td>80% 10% 10%</td>
<td>72% 28%</td>
</tr>
<tr>
<td>Maintain up-to-date problem list of active diagnoses</td>
<td>76% 21% 3%</td>
<td>72% 28%</td>
</tr>
<tr>
<td>Maintain active medication allergy list</td>
<td>94% 5% 1%</td>
<td>88% 12%</td>
</tr>
<tr>
<td>Maintain active medication list</td>
<td>83% 16% 1%</td>
<td>75% 25%</td>
</tr>
<tr>
<td>Check insurance eligibility</td>
<td>64% 25% 11%</td>
<td>57% 43%</td>
</tr>
<tr>
<td>Submit claims</td>
<td>79% 13% 8%</td>
<td>76% 24%</td>
</tr>
</tbody>
</table>

*CPOE = computerized provider order entry

NOTE: Percentages may not total 100% due to rounding. The percentage of respondents who reported the function as “used” may be higher than the percentage of respondents who reported the function as “available” because the total number of responses (denominator) for each question varies.

---

**Primary Concerns about EHR Implementation**

Among the 39 practices that are likely to apply and be eligible for the incentive, those practices that do not currently have an EHR system in place were asked to indicate to what degree they are concerned with several issues related to EHR implementation. The primary concerns among those without an EHR relate to the cost, potential for disruption to practice workflow, and uncertainty about which EHR system to purchase.

- For nine out of ten practices without an EHR, the initial costs of implementation are either a major (69 percent) or medium concern (25 percent).
For a similar proportion, the recurring costs of an EHR system are either a major (63 percent) or medium concern (31 percent).

For more than four-fifths of practices without an EHR, uncertainty about which EHR system to purchase is either a major (38 percent) or medium concern (50 percent).

For a similar proportion, disruption to practice workflow is either a major (38 percent) or medium concern (44 percent).

The primary concerns have stayed the same in the survey findings for 2010 and 2011. The following tables provide a detailed look at the concerns among practices that do not currently have an EHR.

<table>
<thead>
<tr>
<th>2011 Survey</th>
<th>Major concern</th>
<th>Medium concern</th>
<th>Minor concern</th>
<th>Not a concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial costs of implementation</td>
<td>69%</td>
<td>25%</td>
<td>6%</td>
<td>–</td>
</tr>
<tr>
<td>Recurring costs of EHR system</td>
<td>63</td>
<td>31</td>
<td>6</td>
<td>–</td>
</tr>
<tr>
<td>Disruption to practice workflow</td>
<td>38</td>
<td>44</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td>Unsure which EHR system to purchase</td>
<td>38</td>
<td>50</td>
<td>–</td>
<td>13</td>
</tr>
<tr>
<td>Worry that EHR choice will become obsolete</td>
<td>6</td>
<td>50</td>
<td>31</td>
<td>13</td>
</tr>
<tr>
<td>Patient privacy</td>
<td>25</td>
<td>13</td>
<td>44</td>
<td>19</td>
</tr>
<tr>
<td>No clear business value</td>
<td>6</td>
<td>38</td>
<td>25</td>
<td>31</td>
</tr>
<tr>
<td>Familiarity with computer technology</td>
<td>19</td>
<td>25</td>
<td>44</td>
<td>13</td>
</tr>
<tr>
<td>Internet access availability and reliability</td>
<td>–</td>
<td>44</td>
<td>25</td>
<td>31</td>
</tr>
</tbody>
</table>

NOTE: Percentages may not total 100% due to rounding.

<table>
<thead>
<tr>
<th>2010 Survey</th>
<th>Major concern</th>
<th>Medium concern</th>
<th>Minor concern</th>
<th>Not a concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial costs of implementation</td>
<td>81%</td>
<td>13%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>Recurring costs of EHR system</td>
<td>57</td>
<td>35</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Disruption to practice workflow</td>
<td>48</td>
<td>31</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Unsure which EHR system to purchase</td>
<td>48</td>
<td>17</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Worry that EHR choice will become obsolete</td>
<td>32</td>
<td>23</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>Patient privacy</td>
<td>18</td>
<td>22</td>
<td>38</td>
<td>22</td>
</tr>
<tr>
<td>No clear business value</td>
<td>14</td>
<td>21</td>
<td>19</td>
<td>45</td>
</tr>
<tr>
<td>Familiarity with computer technology</td>
<td>14</td>
<td>36</td>
<td>35</td>
<td>16</td>
</tr>
<tr>
<td>Internet access availability and reliability</td>
<td>12</td>
<td>27</td>
<td>24</td>
<td>37</td>
</tr>
</tbody>
</table>

NOTE: Percentages may not total 100% due to rounding.

PRACTICES IN WHICH NO PROVIDERS ARE LIKELY TO APPLY OR IT IS UNCERTAIN WHETHER PROVIDERS WILL APPLY

A total of 176 practices indicated that none of their providers are planning to apply or it is uncertain whether any of their providers plan to apply for either the Medicaid or Medicare incentive for EHR adoption. Thirty-seven of these practices report that 30
percent or more of their practice’s annual patient encounters are covered by Medicaid, and 141 report that less than 90 percent of the care that their practice provides is based in a hospital or hospital-owned facility. However, only 27 of these practices (15 percent) meet both criteria and may be eligible to apply for the Medicaid incentive. The analysis in this section of the report is focused on these 27 practices, which represent a total of 84 providers:

- 19 physicians (other than pediatricians)
- 5 pediatricians
- 34 dentists
- 4 nurse practitioners
- 2 physician assistants
- 20 other provider types

While respondents for these 27 practices had indicated that their providers do not plan to apply for either incentive or they were unsure about the plans of their providers to apply, some still provided estimates of how many providers in their practice would apply, as follows:

- 5 physicians (other than pediatricians)
- 6 dentists
- 2 nurse practitioners
- 3 other provider types

**Practice Type**

As in 2010, most of the practices in which no providers plan to apply or it is uncertain whether any providers will apply for the incentive are single specialty practices (35 percent) or primary care practices (31 percent). However, in 2011 a larger proportion of these practices chose “other” as the best description for their type of practice. The following table shows the percentage of respondents by practice type.

<table>
<thead>
<tr>
<th>Type of practice</th>
<th>2011 Percentage</th>
<th>2010 Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single specialty practice (not primary care)</td>
<td>35%</td>
<td>44%</td>
</tr>
<tr>
<td>Primary care practice</td>
<td>31</td>
<td>29</td>
</tr>
<tr>
<td>Nursing home or long-term care facility</td>
<td>–</td>
<td>9</td>
</tr>
<tr>
<td>Multi-specialty practice</td>
<td>–</td>
<td>5</td>
</tr>
<tr>
<td>Community mental health center</td>
<td>–</td>
<td>2</td>
</tr>
<tr>
<td>Community health center (FQHC, FQHC look-alike, RHC)</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Home health agency or hospice agency</td>
<td>–</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Other</td>
<td>27</td>
<td>9</td>
</tr>
</tbody>
</table>

**NOTE:** The survey responses for 2010 are from practices which were uncertain whether any providers would apply for the incentive; responses for practices in which no providers planned to apply were analyzed separately in 2010. Percentages do not total 100% due to rounding.
Current Use of and Future Plans for EHR

Of the 27 practices in which no providers plan to apply or it is uncertain whether any providers will apply for the incentive, only 3 (11 percent) report they have already adopted, begun using, or upgraded/expanded an EHR system. Only one of these practices that uses an EHR system reported that it is ONC-certified. This is similar to the responses in 2010 when only 24 percent of the practices which were uncertain whether any providers would apply for the incentive reported their EHR system was certified by the CCHIT.

Seventeen (63 percent) of the practices in which no providers plan to apply or it is uncertain whether any providers will apply for the incentive report that the practice has not yet decided whether to implement an EHR. Three practices (11 percent) report that they have decided not to implement an EHR. Four practices (15 percent) did not report the extent of their EHR planning and implementation.

Primary Concerns about EHR Implementation

As with the practices whose providers are likely to apply for the Medicaid incentive, the primary concerns among practices in which no providers plan to apply or it is uncertain whether any providers will apply relate to the cost, potential for disruption to practice workflow, and uncertainty about which EHR system to purchase.

- For eight out of ten of those practices without an EHR, the initial costs of implementation are either a major (71 percent) or medium concern (12 percent).
- For a similar proportion, the recurring costs of an EHR system are either a major (56 percent) or medium concern (25 percent).
- For more than two-thirds of practices without an EHR, uncertainty about which EHR system to purchase is either a major (53 percent) or medium concern (12 percent).
- For a similar proportion, disruption to practice workflow is either a major (31 percent) or medium concern (38 percent).

These practices also are worried that the EHR they choose might become obsolete. As in 2010, this category of practices is more concerned that there is no clear business value associated with an EHR than practices whose providers are likely to apply and be eligible for the incentive. The tables below provide a detailed look at the concerns among practices that do not have an EHR.

<table>
<thead>
<tr>
<th>2011 Survey</th>
<th>Major concern</th>
<th>Medium concern</th>
<th>Minor concern</th>
<th>Not a concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial costs of implementation</td>
<td>71%</td>
<td>12%</td>
<td>–</td>
<td>18%</td>
</tr>
<tr>
<td>Recurring costs of EHR system</td>
<td>56%</td>
<td>25%</td>
<td>–</td>
<td>19%</td>
</tr>
<tr>
<td>Unsure which EHR system to purchase</td>
<td>53%</td>
<td>12%</td>
<td>12%</td>
<td>24%</td>
</tr>
<tr>
<td>Disruption to practice workflow</td>
<td>31%</td>
<td>38%</td>
<td>6%</td>
<td>25%</td>
</tr>
<tr>
<td>Worry that EHR choice will become obsolete</td>
<td>25%</td>
<td>31%</td>
<td>19%</td>
<td>25%</td>
</tr>
<tr>
<td>No clear business value</td>
<td>29%</td>
<td>29%</td>
<td>12%</td>
<td>29%</td>
</tr>
<tr>
<td>Patient privacy</td>
<td>38%</td>
<td>19%</td>
<td>19%</td>
<td>25%</td>
</tr>
<tr>
<td>Familiarity with computer technology</td>
<td>31%</td>
<td>31%</td>
<td>6%</td>
<td>31%</td>
</tr>
</tbody>
</table>
### Medicaid EHR Provider Scan Findings

Prepared by Public Sector Consultants Inc.

December 2011

#### Survey Major concerns

<table>
<thead>
<tr>
<th>Concern</th>
<th>2011 Survey</th>
<th>2010 Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet access availability and reliability</td>
<td>27 13 33 27</td>
<td>?</td>
</tr>
<tr>
<td>Initial costs of implementation</td>
<td>79% 13% 4% 5%</td>
<td>?</td>
</tr>
<tr>
<td>Recurring costs of EHR system</td>
<td>56 33 78 4</td>
<td>?</td>
</tr>
<tr>
<td>Unsure which EHR system to purchase</td>
<td>46 27 12 15</td>
<td>?</td>
</tr>
<tr>
<td>Disruption to practice workflow</td>
<td>44 33 17 6</td>
<td>?</td>
</tr>
<tr>
<td>Worry that EHR choice will become obsolete</td>
<td>31 28 24 18</td>
<td>?</td>
</tr>
<tr>
<td>No clear business value</td>
<td>23 23 21 33</td>
<td>?</td>
</tr>
<tr>
<td>Patient privacy</td>
<td>21 26 34 20</td>
<td>?</td>
</tr>
<tr>
<td>Familiarity with computer technology</td>
<td>16 27 36 22</td>
<td>?</td>
</tr>
<tr>
<td>Internet access availability and reliability</td>
<td>13 20 28 38</td>
<td>?</td>
</tr>
</tbody>
</table>

**NOTE:** Percentages may not total 100% due to rounding.

---

### PRACTICES WITH PROVIDERS WHO HAVE ALREADY APPLIED FOR AN INCENTIVE

A total of 37 practices reported that their providers have already applied for an incentive for EHR adoption (which could be either the Medicaid or Medicare incentive). Only 20 of these practices report that 30 percent or more of their practice’s annual patient encounters are covered by Medicaid. Only 30 of these practices report that less than 90 percent of the care that their practice provides is based in a hospital or hospital-owned facility. Thus, several of these practices are likely to be ineligible for the Medicaid incentive.

The analysis in this section of the report is focused on these 37 practices, which represent a total of 200 providers:

- 102 physicians (other than pediatricians)
- 12 pediatricians
- 11 dentists
- 5 certified nurse-midwives
- 15 nurse practitioners
- 38 physician assistants
- 17 other provider types

While respondents for these 37 practices indicated that providers in their practice *have already applied* for an incentive, in response to a separate question, some also estimated that the following providers in their practice *plan to apply* for an incentive:

- 94 physicians (other than pediatricians)
- 10 pediatricians
- 8 dentists
- 5 certified nurse-midwives
- 13 nurse practitioners
- 19 physician assistants
- 8 other provider types

**Practice Type**

For the most part, practices in which providers have already applied for an incentive are primary care practices (50 percent) or single specialty practices (28 percent). The following table shows the percentage of respondents by practice type.

<table>
<thead>
<tr>
<th>Type of practice</th>
<th>2011 Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care practice</td>
<td>50%</td>
</tr>
<tr>
<td>Single specialty practice (not primary care)</td>
<td>28</td>
</tr>
<tr>
<td>Multi-specialty practice</td>
<td>11</td>
</tr>
<tr>
<td>Community health center (FQHC, FQHC look-alike, RHC)</td>
<td>11</td>
</tr>
<tr>
<td>Community mental health center</td>
<td>–</td>
</tr>
<tr>
<td>Home health agency or hospice agency</td>
<td>–</td>
</tr>
<tr>
<td>Nursing home or long-term care facility</td>
<td>–</td>
</tr>
<tr>
<td>Other</td>
<td>–</td>
</tr>
</tbody>
</table>

**Current Use of and Future Plans for EHR**

Of the 37 practices that reported their providers have already applied for an incentive for EHR adoption, 33 (85 percent) report they have already adopted, begun using, or upgraded/expanded an EHR system. Of those practices that use an EHR system, 76 percent report that it is ONC-certified. Six percent report their EHR product is not ONC-certified and 18 percent are unsure whether it is certified.

**EHR Function Availability and Use**

Practices that have already applied for an incentive and have an EHR in place were asked to indicate which functions are available in their EHR system and which functions are being used. The vast majority of these practices report that almost all of the functions for meaningful use are available in their EHR systems. The function that is least likely to be reported as available is the ability to submit data electronically to public health agencies. With the exception of submitting data electronically to public health agencies, reported use of each of the functions is very high. Response percentages are presented in the following table.
### 2011 Survey

<table>
<thead>
<tr>
<th>Function</th>
<th>Is the function available?</th>
<th>Is the function used?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Conduct drug-drug, drug-allergy, and drug-formulary checks</td>
<td>83</td>
<td>7</td>
</tr>
<tr>
<td>Generate lists of patients by specific condition</td>
<td>83</td>
<td>7</td>
</tr>
<tr>
<td>Generate patient reminders for guideline-based interventions and/or screening tests</td>
<td>80</td>
<td>14</td>
</tr>
<tr>
<td>Submit data electronically to public health agencies</td>
<td>62</td>
<td>24</td>
</tr>
<tr>
<td>Generate and transmit permissible prescriptions electronically</td>
<td>100</td>
<td>–</td>
</tr>
<tr>
<td>CPOE* for medications, labs, radiology/imaging, or referrals</td>
<td>90</td>
<td>7</td>
</tr>
<tr>
<td>Generate a clinical summary of office visits for patients</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td>Maintain up-to-date problem list of active diagnoses</td>
<td>97</td>
<td>3</td>
</tr>
<tr>
<td>Maintain active medication allergy list</td>
<td>100</td>
<td>–</td>
</tr>
<tr>
<td>Maintain active medication list</td>
<td>100</td>
<td>–</td>
</tr>
</tbody>
</table>

*CPOE = computerized provider order entry

NOTE: Percentages may not total 100% due to rounding. The percentage of respondents who reported the function as “used” may be higher than the percentage of respondents who reported the function as “available” because the total number of responses (denominator) for each question varies.

### Primary Concerns about EHR Implementation

None of the practices that have already applied for an incentive provided information on their concerns about EHR implementation.

### PRACTICES WITH PROVIDERS WHO PLAN TO APPLY FOR THE MEDICARE INCENTIVE

A total of 58 practices indicated that providers in their practice plan to apply for the Medicare incentive for EHR adoption. Eleven of these practices report that 30 percent or more of their practice’s annual patient encounters are covered by Medicaid, and thus might be eligible for the Medicaid incentive.

The 58 practices with providers who plan to apply for the Medicare incentive represent a total of 140 providers:

- 106 physicians (other than pediatricians)
- 1 pediatrician
- 1 dentist
- 9 nurse practitioners
- 11 physician assistants
- 12 other provider types
These practices estimated that the vast majority of their providers (109 out of 140) plan to apply for an incentive:

- 90 physicians (other than pediatricians)
- 1 pediatrician
- 1 dentist
- 4 nurse practitioners
- 7 physician assistants
- 6 other provider types

**Practice Type**

For the most part, practices with providers who plan to apply for the Medicare incentive are single specialty practices (59 percent) or primary care practices (29 percent). The following table shows the percentage of respondents by practice type.

<table>
<thead>
<tr>
<th>Type of practice</th>
<th>2011 Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care practice</td>
<td>29%</td>
</tr>
<tr>
<td>Single specialty practice (not primary care)</td>
<td>59</td>
</tr>
<tr>
<td>Multi-specialty practice</td>
<td>3</td>
</tr>
<tr>
<td>Community health center (FQHC, FQHC look-alike, RHC)</td>
<td>3</td>
</tr>
<tr>
<td>Community mental health center</td>
<td>–</td>
</tr>
<tr>
<td>Home health agency or hospice agency</td>
<td>–</td>
</tr>
<tr>
<td>Nursing home or long-term care facility</td>
<td>–</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
</tr>
</tbody>
</table>

NOTE: Comparison data for 2010 is not available since practices were not asked if their providers planned to apply for the Medicare incentive in the 2010 survey.

**Current Use of and Future Plans for EHR**

Of the 58 practices that reported their providers plan to apply for the Medicare incentive for EHR adoption, 31 (53 percent) report they have already adopted, begun using, or upgraded/expanded an EHR system. Of those practices that have already adopted, begun using, or upgraded/expanded an EHR system, 65 percent report that it is ONC-certified.

**EHR Function Availability and Use**

Practices that plan to apply for the Medicare incentive and have an EHR in place were also asked to indicate which functions are available in their EHR system and which functions are being used. The vast majority of these practices report that almost all of the functions for meaningful use are available in their EHR systems. As indicated by other respondents, the function that is least likely to be reported as available is the ability to submit data electronically to public health agencies. With the exceptions of generating patient reminders for interventions and submitting data electronically to public health agencies, reported use of each of the functions is very high. Response percentages are presented in the following table.
Primary Concerns about EHR Implementation

As with the practices whose providers are likely to apply for the Medicaid incentive, the primary concerns among practices whose providers plan to apply for the Medicare incentive relate to the cost, potential for disruption to practice workflow, and uncertainty about which EHR system to purchase.

- For all of these practices without an EHR, the initial costs of implementation are a major concern (100 percent).
- Similarly, the recurring costs of an EHR system are either a major (62 percent) or medium concern (38 percent).
- For 90 percent of those without an EHR, disruption to practice workflow is either a major (76 percent) or medium concern (14 percent).
- Likewise, for 90 percent of those without an EHR, uncertainty about which EHR system to purchase is either a major (65 percent) or medium concern (25 percent).

These practices also are worried that the EHR they choose might become obsolete and are concerned that there is no clear business value associated with an EHR. The table below provides a detailed look at the concerns among practices that do not have an EHR and plan to apply for the Medicare incentive.
<table>
<thead>
<tr>
<th>2011 Survey</th>
<th>Major concern</th>
<th>Medium concern</th>
<th>Minor concern</th>
<th>Not a concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial costs of implementation</td>
<td>100%</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Recurring costs of EHR system</td>
<td>62</td>
<td>38</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Unsure which EHR system to purchase</td>
<td>65</td>
<td>25</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Disruption to practice workflow</td>
<td>76</td>
<td>14</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Worry that EHR choice will become obsolete</td>
<td>55</td>
<td>20</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>No clear business value</td>
<td>50</td>
<td>15</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Patient privacy</td>
<td>10</td>
<td>30</td>
<td>45</td>
<td>15</td>
</tr>
<tr>
<td>Familiarity with computer technology</td>
<td>25</td>
<td>30</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>Internet access availability and reliability</td>
<td>19</td>
<td>19</td>
<td>43</td>
<td>19</td>
</tr>
</tbody>
</table>

NOTE: Percentages may not total 100% due to rounding.
Appendix D: 2011 Medicaid Provider Survey Instrument
1. Do any providers in your practice plan to apply for the Medicaid or Medicare incentive for EHR adoption?
   (Individual providers can apply for either the Medicaid incentive or the Medicare incentive, not both.)
   a) Providers in my practice have already applied for an incentive.
   b) Yes, providers in my practice plan to apply for the Medicaid incentive.
   c) Yes, providers in my practice plan to apply for the Medicare incentive.
   d) No, providers in my practice do not plan to apply for either incentive.
   e) Unsure

2. For each provider type listed provide a number for both columns.
   Number of each provider type in your practice
   Estimate how many of these providers plan to apply for an incentive for EHR adoption

   1) Physician (other than a pediatrician)
   2) Pediatrician
   3) Dentist
   4) Certified nurse-midwife
   5) Nurse practitioner
   6) Physician assistant
   7) Other provider type

3. Which best describes your practice? (Mark one.)
   a) Primary care practice
   b) Single specialty practice (not primary care)
   c) Multi-specialty practice
   d) Community health center (FQHC, FQHC look-alike, RHC)
   e) Community mental health center
   f) Home health agency or hospice agency
   g) Nursing home or long-term care facility
   h) Other

4. What percentage of the care that your practice provides is based in a hospital or hospital-owned facility?
   a) Less than 90%
   b) 90% or more

5. What percentage of your practice’s annual patient encounters is covered by Medicaid?
   a) Less than 10%
   b) 10–19%
   c) 20–29%
   d) 30–39%
   e) 40–49%
   f) 50% or more

Please complete the survey online by going to www.MichiganHealthIT.org/survey. If you prefer, you may complete the survey and return it in the envelope provided by October 21, 2011.

MARKING INSTRUCTIONS
- Use a No. 2 pencil or a blue or black ink pen only.
- Do not use pens with ink that soaks through the paper.
- Make solid marks that fill the response completely.
- Make no stray marks on this form.

CORRECT: ✗ INCORRECT: ✗ ✗ ✗

Please note: For each answer, the number in column B should not be greater than the number in column A.
The following questions are about interest in and current use of an electronic health record system in your practice.

6. If your practice uses an EHR system, is your EHR product ONC-certified?
   a) Yes ........................................ [A]
   b) No .......................................... [B]
   c) Unsure .................................... [C]

7. What is the extent of EHR planning and implementation in your practice? (Mark one.)
   a) We have adopted an EHR (e.g., purchased or secured access to certified EHR technology). .... [A]
   b) We have begun using an EHR (e.g., staff training, data entry of patient demographic information on an EHR). .... [B]
   c) We have upgraded or expanded our EHR (e.g., upgraded to certified EHR technology or added new functionality for meaningful use). .... [C]
   d) We have decided not to implement an EHR .... [D]
   e) No decision has been made about implementing an EHR .... [E]

The following question is for practices that currently have an EHR system in place.
Skip to question 9 if you do not use an EHR system.

8. Please tell us whether the following EHR functions are available in your EHR system and indicate whether the function is being used.

<table>
<thead>
<tr>
<th>Function</th>
<th>(A) Is the function available?</th>
<th>(B) Is the function used?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Conduct drug-drug, drug-allergy, and drug-formulary checks</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>2) Generate lists of patients by specific conditions</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>3) Generate patient reminders for guideline-based interventions and/or screening tests</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4) Submit data electronically to public health agencies (including Michigan Care Improvement Registry [MCIR])</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>5) Generate and transmit permissible prescriptions electronically (e-prescribing)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>6) Computerized provider order entry (CPOE) for medications, labs, radiology/imaging, or referrals</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>7) Generate a clinical summary of office visits for patients</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>8) Maintain up-to-date problem list of active diagnoses</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>9) Maintain active medication allergy list</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>10) Maintain active medication list</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

The following question is for practices that do not currently have an EHR system in place.

9. To what degree are the following issues a concern for implementation of an EHR system in your practice?

   a) Unsure which EHR system to purchase ........................................ [1] [2] [3] [4]
   b) Worry that EHR choice will become obsolete ........................................ [1] [2] [3] [4]
   c) Initial costs of implementation ........................................ [1] [2] [3] [4]
   d) Recurring costs of EHR system ........................................ [1] [2] [3] [4]
   e) Disruption to practice workflow ........................................ [1] [2] [3] [4]
   g) Familiarity with computer technology ........................................ [1] [2] [3] [4]
   h) Internet access availability and reliability ........................................ [1] [2] [3] [4]
   i) No clear business value ........................................ [1] [2] [3] [4]

Thank You!
Appendix E: HRSA FQHC Funding Summaries
Michigan Primary Care Association HIT Network (HRSA H2LIT16865)  
Michigan Primary Care Association

Program Dates: 9-1-09 – 8-31-11  
Total Award Amount: $1,863,409

Members of the Michigan Primary Care Association (MPCA) have formed the Michigan Primary Care Association HIT Network (henceforth referred to as the “Network”). The MCPA is a non-profit 501(3)(c) organization who is the voice for Community Health Centers and other community-based providers in Michigan. Its member include 29 Federally Qualified Health Centers (FQHCs), 3 FQHC ‘Look-Alikes’, 3 community-based providers and six associate members. Their mission statement is, “To be a leader building a healthy society in which all residents have convenient and affordable access to quality health care”. Its mission is to promote, support, and develop comprehensive, accessible, and affordable community-based primary health care services to everyone in Michigan.

Virtual CHC is a service of the MPCA. It is an application services provider (ASP) providing Community Health Centers around the country with state-of-the-art information technology. MPCA Virtual CHC provides Community Health Centers with high quality software application using some of the most advanced online technologies. This project proposes to match technology through MPCA Virtual CHC with Community Health Centers through the Network to provide health center staff with an excellent user friendly Electronic Health Record (EHR) system, NextGen and sophisticated data warehousing systems that enable them to provide their patients with the highest quality care, while meeting their unique management and reporting requirements.

The project focuses on the implementation of a standardized Electronic Health Record (EHR), NextGen, a Certification Commission for Healthcare Information Technology (CCHIT) product, across all five participating health centers. The project will include a health outcomes benchmarking and ongoing evaluation of, Diabetes, Cardiovascular, and Childhood Immunizations. In addition, the project will include a process evaluation of the HIT Network effectiveness through data evaluation and benchmarking and customer satisfaction surveys. Through the use of a standardized EHR system supported by the Michigan Primary Care Health Information Network, known as Virtual CHC, Network members will integrate functions, share data to improve health center operations and maximize efficiencies.

The use of an integrated EHR system, NextGen, in conjunction with CS-Prime DATA WAREHOUSE systems hosted by the MPCA the HIT Network will increase the effectiveness, efficiency, safety, quality and “patient centered-ness” of care in all five of the project participants. The outcomes will be supported by data aggregated throughout the project period specific to these health outcomes: Immunization rates for children under 24 months old  
HgbA1c results for diabetic patients  
B.P measurement <140/90 for patients diagnosed with CVD

In addition, the HIT network will measure its ability to operate efficiently and effectively in providing ongoing support to the participating health centers. This evaluative process will include data benchmarking and customer service surveys.
The members of the Network include five Community Health Centers, two Migrant Health Centers, and two Homeless Health Centers. Members are: Baldwin Family Health Care (rural-CHC) Baldwin, Michigan; Cherry Street Health Services, Inc. (urban-CHC, Migrant Health Center and Health Care for the Homeless Center), Grand Rapids, Michigan; Family Medical Center of Michigan,(Community Health Center and Migrant Health Center) Carleton, Michigan; Ingham County Health Department (urban-CHC and Health Care for the Homeless Center), Lansing, Michigan; and Oakland Primary Health Services (urban-CHC), Pontiac, Michigan.

Health Center Controlled Networks - Health Information Technology (HIT) Grant
HIT Innovation Project (HRSA H2LIT16631)
Michigan Primary Care Association

Program Dates: 9-1-09 – 8-31-11
Total Award Amount: $730,053

MPCA and four of the HIT network members (East Jordan Family Health Center, Family Medical Center of Michigan, Sterling Area Health Center, and Ingham County Community Health Centers) are bringing technology and continuous quality management together through a point-of-care clinical tool. The goals of the project are to increase the number of chronic disease patients that are monitored and managed, achieve Healthy People 2010 objectives for the patient population, increase data accuracies by eliminating manual entry of data, and increase efficiencies within Health Centers that maximize personnel, revenue, and time spent with patients.

The project focuses primarily on three health management problems, Diabetes, Cardiovascular, and Childhood Immunizations. However, the network made the decision to make sure that all UDS and HRSA Clinical measures could be tracked through the use of Point-of-Care tablet computers and Cielo Clinic software. Providers and medical support staff are able to manage their patients in real-time, making treatment relevant and self-management accessible. Current practice management systems are only able to identify patients based on CPT codes. This is often a very inaccurate method of patient identification for the purposes of health management. Patients who may require chronic disease management are missed because another billing code is used as “primary” for the sake of getting reimbursed for the encounter. In the same regard, a patient may be identified as a candidate for chronic disease management based on a CPT code that was used to rule out a problem. By capturing the data at the Point-of-Care, the health center and providers are focusing their attentions and resources on the true target populations.

Through the implementation of Cielo Clinic Point-of-Care software, computer tablets are loaded with patient information and expressed in real-time for patient education and self-management. Interfaces from Practice Management Systems to Cielo Clinic Point of Care software are allowing all patient demographic data to be entered into Cielo prior to patient visits. Interface for Cielo to the Michigan State Immunization Registry will be completed and well as lab interfaces. This has an incredible impact on the patient population in three ways. First, the right information and plan of care is available at the right time to the right patient. Second, by having real-time data available at the Point-of-Care, patient education can take place immediately and self-management can begin and be monitored with the team
that includes the patient. Third, when you have the right plan for the right patient at the right time involving the patient, research demonstrates that compliance goes up and benchmarks are met.
Appendix F: State of Michigan MiHIN Shared Services Strategic Plan
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1 Stakeholder Approval
The MiHIN Shared Services Strategic Plan was endorsed by the MiHIN Governance Workgroup by unanimous vote on April 22, 2010. Membership of the MiHIN Governance Workgroup is listed in Appendix 1 of the MiHIN Shared Services Strategic Plan. The MiHIN Shared Services Strategic Plan was endorsed by the Michigan Health Information Technology Commission by unanimous vote on April 22, 2010. Membership of the Michigan Health Information Technology Commission can be found in the Governance domain section in the MiHIN Shared Services Strategic Plan.

2 Executive Summary
The State of Michigan and the stakeholders across Michigan who have been involved in the development of the Michigan Health Information Network (MiHIN) over the past years, plan to capitalize on the progress and experience gained from this effort by responding to the opportunities under the State Health Information Exchange Cooperative Agreement Program.

The Michigan Health Information Network (MiHIN) Strategic Plan is intended to communicate the vision, goals, objectives and strategies for addressing statewide Health Information Exchange (HIE) development in Michigan. The strategies outlined in this plan are designed to execute on the vision of developing an open architecture that complements the progress made by sub-state HIEs and leverages statewide shared services to accelerate statewide health information exchange. Our intended outcome is to continuously improve and expand HIE services over time to result in improved quality and efficiency of health care for our citizens.

2.1 Historical Perspective
The MiHIN began in 2005 when Governor Jennifer M. Granholm charged the Michigan Department of Community Health and the Michigan Department of Information Technology with collaborating with stakeholders to utilize Health Information Technology (HIT) and HIE to improve quality and decrease the costs of healthcare in Michigan. In 2006 more than 200 stakeholders participated in developing a plan for guiding statewide health information exchange, titled the MiHIN Conduit to Care. The MiHIN Conduit to Care set forth a roadmap for ensuring that health information exchange would occur statewide, including rural and medically underserved areas. It also set the direction for an incremental or phased approach to HIE, provided resources for sub state HIE planning and implementation, and most importantly, set the expectation that stakeholder engagement is critical to long term success.

The MiHIN Conduit to Care represented the first iteration of a Strategic Plan by establishing a vision of HIE across Michigan that continues to hold true today: reducing the overall cost of care while increasing quality and patient safety.

Michigan’s pioneering approach included the identification of nine “medical trading areas” that cover all counties in the state in which HIEs would be developed, so as not to leave out any portion of the state. Michigan Department of Community Health (MDCH) used $10 million in
funding appropriated from state general fund dollars to sponsor one HIE initiative within each of
the nine medical trading areas. Seven of the regional HIE initiatives received planning grants
while two regions received implementation grants. Throughout the past several years other
community organizations have engaged in efforts to build sub-state HIEs. These sub-state HIE
initiatives and the nine medical trading area initiatives are described in Section 2.1
Environmental Scan.

A major milestone for HIT and HIE progress in Michigan occurred when the Michigan
Legislature passed and Governor Jennifer M. Granholm signed the Michigan Health Information
Technology Commission into law. The Michigan HIT Commission was created in 2006 as an
advisory body to the MDCH. The HIT Commission is charged with facilitating and promoting the
design, implementation, operation and maintenance of an interoperable health care information
infrastructure as well as to advance the adoption of health information technologies throughout
the state’s health care system.

2.2 Michigan’s Approach
This MiHIN Strategic Plan seeks to close the gap between the Conduit to Care and the
guidelines from the State HIE Cooperative Agreement as well as update Michigan’s plan for
statewide HIE that leverages the progress of sub-state HIEs in Michigan. The MiHIN Strategic
Plan describes the incremental approach for advancing appropriate and secure health
information exchange, implements a model that encourages public private partnership and
develops a scalable open technology approach that would complement the activities of the sub-
state HIEs.

To accomplish these goals a series of evaluations and environmental analyses were undertaken
to assess current HIE capacity in Michigan that can be leveraged, to identify HIT resources that
can be used, and to determine opportunities for collaboration. This information was also used
to inform the work of the stakeholders involved in a comprehensive workgroup process that
formulated this Strategic Plan. More than 100 stakeholders have been involved with planning
and developing the approaches to implementation and evaluation activities by serving on
workgroups that are directly aligned with the five domains of governance, finance, technical
architecture, business/technical operations and legal/policy.

These activities have been complemented by integrating the MiHIN planning work with
Medicaid, Medicare, other federally funded, state based programs particularly public health
surveillance and other American Recovery and Reinvestment Act (ARRA) programs to include
the Regional Extension Center (REC), workforce development initiatives and broadband
mapping and access initiatives.

This approach has resulted in a strategy that uses the State HIE Cooperative Agreement
funding in a comprehensive public private partnership to advance the stakeholder organizations
toward obtaining meaningful use.
2.3 Strategy Highlights

This Executive Summary is intended to provide an overview that highlights each domain area. The subsequent sections of this document provide the details associated with Michigan’s strategy for accomplishing the MiHIN Shared Services vision and goals.

2.3.1 Governance

Michigan’s approach to Governance is to create a coordinated governance model that emphasizes public/private partnerships. Toward that end, a coordinated Governance model has been developed that uses the existing legislatively mandated Health Information Technology (HIT) Commission to set broad statewide policy initiatives. In addition to leveraging the HIT Commission, a separate not-for-profit entity called the MiHIN Shared Services will be created to act as the State Designated Entity. The governing board of this entity will consist of stakeholders from the sub-state HIEs, payer organizations and the State of Michigan (including a member of the HIT Commission). A legislative change will be sought to add a member of the MiHIN Shared Service Governance board to the HIT Commission.

The MiHIN Shared Services Governance Board will be primarily responsible for governing the business and technical operations of the technology infrastructure and have authority over the shared services including the financing structures required to enable MiHIN Shared Services to be self-sustaining.

The diagram below provides a graphic representation of the inherent collaboration in the coordinated governance structure.

![Figure 1. Michigan's Coordinated Governance Model](image-url)
2.3.2 Technical Strategy

The MiHIN technical architecture will leverage Michigan’s existing HIE investments and create a technology model that enhances what the sub-state HIEs have either implemented or are implementing through the use of shared services. Shared services refer to a suite of services that can be utilized to connect Michigan’s sub-state HIEs and other data sources together for statewide communication. Shared Services functionality includes state level directories such as a Master Citizen Index, Master Provider Index and a Record Locator Service, Nationwide Health Information Network (NHIN) gateway, Messaging Gateway and other functions as needed.

MiHIN Shared Services technology will be based on a design that enables widespread interoperability among disparate healthcare systems. The design is vendor and technology agnostic and focuses on technical standards, protocols and architectural patterns. The resulting MiHIN Shared Services technology is based on a service oriented architecture paradigm and will be implemented through Web Services executing on an Enterprise Service Bus (ESB).

![MiHIN Shared Services High Level Conceptual Architecture](image)

*Figure 2. MiHIN Shared Services High Level Conceptual Architecture*
The objective of the MiHIN Shared Services Bus is to provide interconnectivity between the Sub-state HIEs, payer organizations and State of Michigan systems. As national standards for interoperability and data exchange are developed and adopted, MiHIN will advocate, promote, align with state standards and foster adoption of national standards by all Michigan HIEs. The use of such standards will provide organizations with the interoperability necessary to electronically move clinical information between disparate provider organizations.

### 2.3.3 Budget and Sustainability Strategy

The State HIE Cooperative Agreement Grant will provide funding to plan and implement the MiHIN Shared Services. To ensure long-term sustainability, MiHIN has adopted a sustainability funding mechanism that is built upon identifying the primary customers associated with the MiHIN Shared Service Bus and empowering them to play an active role in governance and finance. At present, the primary financing and governing organizations are sub-state HIEs, the State of Michigan and payers.

This strategic direction allowed Michigan to determine the expected contribution available from the customers of the MiHIN Shared Services Bus; Sub-state HIEs, Payers and the State of Michigan at between $1.5 and $2.0 million per year starting in 2012. Final dollar amounts are pending multiple variables including vendor negotiations.

The money available from the Cooperative Agreement, combined with the State of Michigan matching funding and member organization contributions allowed Michigan to set a budget of approximately $21.6M from 2010 through 2015 for creating a sustainable organization that executes on the strategy defined in this document.

The diagram below demonstrates how the expected grant expenditure and membership/other fees will ensure that Michigan create a sustainable model for the MiHIN Shared Services Bus.

![Michigan Statewide HIE Sustainability Goals](image)

*Figure 3. Projected MiHIN Shared Services Sustainability Model*
2.3.4 Business and Technical Operations
MiHIN Shared Services Entity will use a phased approach to incrementally build out technology that both satisfies use cases and implements fundamental components of the infrastructure that provide increasing capabilities.

Staffing requirements of the MiHIN Shared Services will initially be satisfied using a combination of contract, vendor and staff.

Phase 1 will consist of deploying technology that will enable two use cases that are related to Public Health Reporting. These use cases include: the transfer of lab results from the sub-state HIEs to the Michigan Department of Community Health’s Disease Surveillance System and the transfer of Immunizations from the sub-State HIEs and the Michigan Department of Community Health’s Immunization Registry. In order to satisfy these use cases the technology that will be deployed will include core services of master patient index, security services, and a provider directory.

Phase 2 deployments will further build out the technical infrastructure and enable the sub-state HIEs to extract data from the Immunization Reporting System and enable the transfer of Continuity of Care Documents (CCD’s) from the Sub-State HIEs to Emergency Departments and Physician Offices. The technology required to deploy these capabilities will build on that deployed in Phase 1 and add most of the remaining functionality of the core services including the Shared Services Bus, XDS Services and a Record Locator Service.

2.3.5 Legal and Policy
The Privacy and Security workgroup was tasked with creating a set of policies that balances the benefit of the HIE with ensuring the privacy and security of patient data.

The security policies will contain minimum standards for participation in MiHIN Shared Services. The privacy policies will also incorporate the minimum standards as well as offering comprehensive guidance for Michigan’s Sub-state HIEs. MiHIN Shared Services Governance Board’s work will provide the Sub-State HIEs with needed clarity, alignment and certainty as they continue to evolve and develop.
3 General Components

3.1 Environmental Scan

Health Information Exchange (HIE) is advancing throughout Michigan in various forms with a wide array of functionality. The State of Michigan government has advanced public health reporting systems, health systems are moving information electronically to users, provider offices in Michigan are utilizing portal technologies, Electronic Health Records (EHRs) and are utilizing the services of sub-state HIEs.

An analysis of Michigan’s HIT and HIE environment was conducted in the fall of 2009 in two phases. First, with the use of a survey instrument, 32 health systems, hospitals, public health, behavioral health, physician offices and other healthcare delivery entities were assessed. Approximately 63 percent of those responding reported HIE to be one of the top five organizational priorities and 57 percent are or are planning to participate in a sub-state HIE. An overwhelming 90 percent of respondents reported that they plan to participate in the Medicare and Medicaid EHR Incentive Programs. A very high level analysis of technical capabilities showed that 57 percent of respondents were utilizing a Certification Commission for HIT (CCHIT) certified EHR. Nearly 64 percent of respondents indicated use of e-prescribing functionality.

The second phase analysis included a detailed technical assessment sent to 27 organizations. The recipients were identified through both the results of the first survey and subsequent follow-up interviews. Included were a diverse set of organization types (providers, payers, sub-state HIEs, public agencies) and geographic locations, while including organizations serving as much of the population as possible. The response pattern was consistent with the first survey’s finding and determined that the majority of Michigan’s health information exchange capability resides in collaboration with Michigan’s hospitals and health systems.

The details of this analysis are noted in the following “readiness” sections.

3.1.1 Clinical System HIE Readiness

MDCH awarded planning grants to seven organizations in 2007 and 2008. These initiatives have been focused on convening stakeholders to develop a collaborative approach to implementing regional HIE. Each of these initiatives is at a different stage of development.

- **Greater Flint Health Coalition:** This planning HIE initiative was awarded a MiHIN planning grant in 2007 and is focused on a three-county region in the Flint, Michigan area. This initiative is facilitated by the Greater Flint Health Coalition.
- **Health Current:** This region represents five counties in the mid-south area of the state and Altarum Institute received a MiHIN planning grant from MDCH in 2008.
- **Michigan Health Information Alliance:** This MiHIN planning grant was awarded in 2007 to the Central Michigan University Research Corporation. This region comprises 11 counties in mid-Michigan.
• **Northern Michigan HIE:** Organized by the North Central Council of the Michigan Health and Hospital Association, the Northern Michigan HIE received a planning grant in 2007 to cover the 21 counties of Michigan’s northern Lower Peninsula.

• **Southeast Michigan HIE:** The Southeast Michigan HIE (SEMHIE) planning grant was awarded in 2007 and is focused on five counties in the southeast Michigan area, which includes the greater Detroit area. This initiative is called SEMHIE. In February of 2010, SEMHIE received a $3 million grant from the Social Security Administration to accelerate the disability claims process using the National Health Information Network.

• **Southwest Michigan HIE:** The Southwest Michigan HIE (SWMHIE) is facilitated by ChangeScape Inc.; it received a MiHIN planning grant in 2008. This initiative focuses on a five-county region that borders Indiana.

• **West Michigan HIE:** The MiHIN Planning grant for this 12-county region on Michigan’s west side was awarded to the Alliance for Health in 2007.

Along with the seven HIE planning grants, MDCH awarded grants to two organizations in 2007 to implement HIEs. Described below, each organization was able to build a sustainable business plan, select an HIE vendor, and begin exchanging data among regional stakeholders.

• **Capital Area RHIO:** Capital Area Regional Health Information Organization (Capital Area RHIO)—a coalition of public and private community members, including physicians, health systems, businesses, health plans, and academic institutions from the Clinton, Eaton, and Ingham tri-county area of mid-Michigan—has selected Axolotl Corp. of San Jose to deploy its RHIO and has begun implementation with data being exchanged in the initial phase.

• **Upper Peninsula Health Care Network:** The Upper Peninsula Health Care Network (UPHCN) serves the 319,000 residents of Michigan’s Upper Peninsula. Collaborative efforts among the network include sponsorship of the Upper Peninsula Poison Crisis Network, joint purchasing, mobile MRI services, education, publication of the physician directory, the U.P. Medical Library Consortium; the U.P. Teleradiology, Teleconferencing and Telemedicine Networks; and a reference lab network. The UPHCN continues to develop the Upper Peninsula-wide integrated information systems network to connect the U.P. hospitals, providing a cost-effective mechanism to access patient information and streamline patient care delivery.

Other community organizations have engaged in efforts to build sub-state HIEs. There are six community initiatives that are implementing key functions including e-prescribing, laboratory ordering and results delivery, prescription fill status and medication fill history, clinical care coordination, and quality reporting.

• **A3HIE** : The Ann Arbor Area HIE (A3HIE), serving the greater Ann Arbor area, comprises 220 physicians and 50 physician assistants from four primary care and specialty practices caring for more than 800,000 active patients. Currently, the practices share the following patient information: demographics, medications, allergies and current problems, and diagnoses lists. Physicians enter information into their practice’s electronic medical record systems, and relevant details are "pushed" to the central data repository, where other partners can access and import them securely. There are more than 400,000 patient records in the repository.

• **Jackson Community Medical Record (JCMR):** JCMR is a joint venture of Allegiance Health and the Jackson Physicians Alliance. It was formed to improve the quality of patient care through IT and lower the total cost of ownership of an EHR system. JCMR currently connects 140 Jackson county physicians, who represent more than 80,000 patients.
• **Michiana Health Information Network (MHIN):** MHIN is a community HIE that serves more than 600 physicians and 2,500 clinical health care providers in northern Indiana and southern Michigan. MHIN provides secure, single-source access to patient clinical information, and connects health care providers with a clinical data repository, results delivery, clinical messaging, interfaces, and a fully integrated EHR.

• **MSMS Connect:** MSMS Connect is an electronic portal that was released in January 2009 by the Michigan State Medical Society (MSMS). This convenient, single-sign-on portal is a free benefit to MSMS members that securely connects physicians to patient information and each other for referrals and consultations, as well as to labs, patient registries, and other resources.

• **My1HIE:** Based in southeast Michigan, My1HIE enables physicians to share vital patient information and collaborate on patient care with other providers. My1HIE connects users to multiple clinical applications, including electronic prescribing, patient registry tools, e-labs, document managers, health plans, and more. All of these applications are interconnected and can be accessed with a unique user ID and password from any location with an Internet connection. Currently, 1,000 physicians use My1HIE.

• **Michigan Health Connect:** A nonprofit corporation founded by Spectrum Health, Trinity Health, Metro Health, Lakeland Regional Health System, and Northern Michigan Regional Health System with a purpose to advance the delivery and coordination of health care through collaboratively leveraging Medicity's information technology and clinical data exchange platform. Currently the organization has connected over 460 provider offices and 1,700 providers across 14+ Michigan counties with results delivery as well as laboratory and radiology orders. Other community hospitals and health systems have indicated they will engage with MHC to evolve a comprehensive health information exchange across Michigan.

Additionally, as noted in the survey section above, several of Michigan’s health systems and hospitals have made considerable progress in the development of IT systems that form integrated delivery networks.

### 3.1.2 Administrative HIE Readiness

Michigan has a strong history of administrative HIE including electronic eligibility and claims transactions. The detail below describes three initiatives that are responsible for building the administrative HIE capacity in Michigan.

• **Blue Cross Blue Shield of Michigan Electronic Data Interchange (EDI) Clearinghouse:** The BCBSM clearinghouse has one of the highest rates of electronic claim submission in the nation. It processes more than 99 percent of facility claims and 92 percent of professional claims electronically. The BCBSM web portal is used by more than 95 percent of all Michigan providers, handling more than 70 million transactions in 2007. This web portal supports Michigan’s Medicaid eligibility verification, as well.

• **Community Health Automated Medicaid Payment System (CHAMPS):** CHAMPS is Michigan’s Medicaid Management Information System. The recently implemented system supports online provider enrollment, prior authorizations, claims submission, and beneficiary eligibility checking; it also provides an in-box for system alerts. CHAMPS processes and adjudicates all Medicaid claims. The new system is a secure Web portal that gives providers a single source for direct access to enrollment, claim information, and other Medicaid-based business functions.

• **Michigan Association of Health Plans (MAHP) Connect:** During 2009, MAHP launched an initiative to provide an Administrative Simplification Solution for MAHP members. This
solution enables the sharing of information from MAHP and MAHP members to their respective provider communities and providers. The overall objective is to capitalize on technology that will centralize common, non-competitive health plan related transactions performed by physicians and their staff. The MAHP Connect will provide: portal capability for providers to interface with multiple health plans; methods to increase the exchange of real-time administrative data between health plans and providers; and methods for integration of existing data exchange portals, practice management systems, and health plan websites to help reduce the need for 'double entry'.

3.1.3 E-Prescribing Readiness

In a 2009 study by Surescripts, Michigan ranked third in the nation for e-Prescribing with nine percent of Michigan prescriptions ordered through e-Prescribing. This percentage was more than double Michigan’s 2007 rate. The following initiatives have played key roles in advancing e-Prescribing in Michigan.

- **Southeastern Michigan E-Prescribing Initiative (SEMI):** SEMI is a purchaser initiative aimed at increasing the adoption of e-prescribing in Southeast Michigan. Implemented in 2005, it is sponsored and funded by the local auto industry, BCBSM, and Medco. More than 3,800 physicians are currently enrolled in the program. Since 2005, more than one million prescriptions have been modified or cancelled due to adverse drug alerts.

- **e-Prescribing in Michigan Medicaid:** In 2008, the Michigan Legislature enacted legislation requiring MDCH to develop a three-year strategic plan for the implementation of electronic prescribing within the state’s Medicaid program. The department’s resulting plan focuses on two goals: (1) increase e-prescribing awareness and use in the Medicaid provider community, and (2) develop system capabilities to track and report Medicaid e-Prescribing transactions.

3.1.4 Other HIE Readiness

An analysis that solely focused on the healthcare related systems within the State of Michigan government found a robust and well-functioning set of services and systems that will both provide a benefit and receive a benefit from interoperating with a statewide HIE system like the MIHIN Shared Services. The analysis evaluated a variety of systems, including public health (systems used to record and monitor population health), health analytics (the MDCH data warehouse, a system to aggregate data from various health-related systems and enable analytics), and infrastructure (systems for security, electronic data transfer, identity management, Extract Transfer Load (ETL) tools and Service Oriented Architecture platforms).

Public health systems surveyed included the Michigan Care Improvement Registry (MCIR), an immunization history registry; the Michigan Disease Surveillance System (MDSS), a system used to monitor lab results and process submission of reportable conditions; the Michigan Syndromic Surveillance Systems (MSSS), which receives patient admission information from emergency departments across Michigan to analyze reported chief complaints to detect outbreaks; and the Bureau of Labs, the sole provider of many critical lab tests not done in the private sector.

The MDCH data warehouse meets the challenge of tracking individual clients of more than 27 separate health related services administered through MDCH and providing decision support.
capability by integrating separate data sources into a single integrated environment. The integration of the separate program information has reduced health care fraud, increased the number of children tested for high blood lead levels, raised the number of children receiving immunizations, and improved the care coordination of Michigan’s Medicaid population.

3.2 HIE Development and Adoption

Michigan has a strong history of utilizing stakeholder involvement to set the direction for Health Information Exchange. Over 200 Michigan healthcare stakeholders successfully developed an initial Strategic plan called the MiHIN Conduit to Care in 2006. Michigan then implemented this plan with an appropriation from the Michigan Legislature to provide planning and implementation grants as defined in section 3.1.1 Clinical System HIE Readiness.

In the fall of 2009, the State of Michigan sought funding from the Office of the National Coordinator for HIT to support continued planning and the implementation of state-wide health information exchange. Michigan used an open and transparent approach that leveraged the success of the MiHIN Conduit to Care in developing this Strategic Plan.

One of the initial activities of the strategic planning process was to review and refine the original vision, goals and strategies from the MiHIN Conduit to Care. This Strategic Plan for achieving statewide HIE development and adoption has been grounded in a highly participatory stakeholder-driven process based on the following updated vision, goals, strategies and approaches to continuous improvement.

3.2.1 MiHIN Vision & Goals

The MiHIN Vision, which has remained constant since its inception, is to foster development of HIE that will reduce the overall cost of care while at the same time increasing the quality of care and patient safety. This Vision is supported by the corresponding MiHIN goals, which include:

- Improve the quality and efficiency of health care delivery for Michigan citizens by accelerating the adoption and use of a collaborative model including health information technology (HIT) and health information exchange (HIE)
  - Minimize redundant data capture and storage, inappropriate care, incomplete information and administrative, billing and data collection costs
- Promote evidence-based medical care to improve patient safety and quality
- Encourage patient-centered care: Connect health care providers – clinicians and facilities – to ensure continuity of care for every patient
  - Increase patient understanding and involvement in their care
  - Enhance communication between patients, health care organizations and clinicians
- Promote national standards to guide the sharing of information and electronic data interoperability
- Safeguard privacy and security of personal health information
- Leverage existing health information systems
- Create a business model that balances cost and risk
Implementing organizations must see sufficient value to justify their investment

3.2.2 MiHIN Strategy
The following domain-specific sections of the MiHIN Strategic Plan provide in-depth detail of the strategies that have been developed in support of ensuring that Michigan can realize the vision of the MiHIN. These strategies are summarized below:

**Governance**: Create a coordinated governance structure that leverages the Michigan HIT Commission to govern the statewide vision and creates a new entity to become the State Designated Entity made up of direct customers of the MiHIN Shared Services to govern the business and technical operations.

**Finance**: Create a self-sustaining organization by 2015 that relies on the direct customers of the MiHIN Shared Services, Sub-State HIEs and Payers, as its primary funding source.

**Technical**: Create a cost effective, scalable architecture, based on standards that provides for a set of statewide services that can be leveraged by all organizations that connect to the MiHIN Shared Services Bus.

**Business and Technical Operations**: Execute on a plan that provides value to Michigan consumers by incrementally deploying capability that satisfies the ONC clinical priorities and enables Michigan’s providers to meet meaningful use while building out components of the MiHIN Shared Services.

**Legal and Policy**: Create a set of Privacy and Security policies that ensures the security of the information that moves around the MiHIN Shared Services Bus that meet national standards of interoperability while not causing an undue administrative burden on providers and consumers.

3.3 Medicaid Coordination
Michigan’s Medicaid program has been a part of the Michigan (MDCH) since 1996. The integration of the Medicaid agency into MDCH has fostered many collaborative efforts improving the health care of Michigan citizens. One of the most effective initiatives implemented was the Medicaid supported data warehouse. The data warehouse is a component of the Medicaid Management Information System (MMIS) IT architecture.

Utilizing the data warehouse to improve the quality of care spurred Medicaid’s involvement in Michigan’s health information technology projects. The work group will also assist in the creation of a State Medicaid HIT Plan. The coordinated effort between the MiHIN and the Medicaid EHR Incentive Program provides an efficient means to advance EHR adoption and health information exchange. The Director of Medicaid Operations and Quality Assurance is an executive steering committee member of the MiHIN Program Office, serves as co-chair of the MiHIN Business Operations Work Group and is a voting member of the MiHIN Governance Work Group. There is Medicaid representation on the majority of the MiHIN planning work groups. The Director of Medicaid Data Management Division is a member of the MiHIN Privacy and Security Work Group and staff from the Medicaid Data Management Division is a member...
of the MiHIN Technical Work Group. This collaboration with the MiHIN and the Medicaid agency allowed for the natural progression of coordination between the MiHIN project and the Medicaid EHR Incentive Program.

The Medicaid EHR Incentive Program is also led by the Director of Medicaid Operations and Quality Assurance. Several of the MiHIN Program Office staff are members of the Medicaid EHR Incentive Program planning initiative. The State’s HIT Coordinator is a member of the EHR Incentive Program planning steering committee. The MiHIN Project Lead is a member of the Medicaid EHR Incentive Work Group. The Medicaid EHR Incentive Work Group was charged with developing the Michigan Department of Technology Planning – Advanced Planning Document (HIT P-APD).

Through the coordinated planning process of the MiHIN and the Medicaid EHR Incentive Program, two shared objectives were identified. Both initiatives seek to accelerate Medicaid beneficiaries’ coordination of care and streamline eligible professionals’ meaningful use reporting requirements through the secure electronic exchange of health information.

The strategies Michigan will take to accomplish these objectives are:

1. To continue the coordinated planning efforts of the MiHIN and the Medicaid EHR Incentive Program
2. To leverage existing State of Michigan health information technology assets
3. To develop electronic services and directories shared between the MiHIN and the Medicaid agency.

Michigan will continue to have members from both initiatives participate in the planning and implementation efforts to ensure the shared objectives are accomplished. The project management of the implementation of the Michigan Medicaid EHR Incentives and the MiHIN implementation will be coordinated. An overall project plan will be developed to synchronize the timelines of the shared tasks and deliverables.

To improve the Medicaid beneficiaries’ coordination of care, MiHIN Shared Services will leverage the data warehouse integration capabilities and extract pertinent administrative and clinical information making it electronically available in a Continuity of Care Document (CCD) format to Medicaid providers through the Michigan Health Information Network. MiHIN Shared Services in partnership with the sub-state HIEs will also leverage the repository capacity and analytical capabilities of the data warehouse to support the quality reporting requirements.

Michigan’s Medicaid Management Information System (MMIS), Community Health Automated Medicaid Processing System (CHAMPS) will be enhanced to aid in the administration and monitoring of the Medicaid EHR Incentive Program. CHAMPS will also be leveraged to streamline eligible professionals’ meaningful use reporting requirements. Eligible professionals will be able to report directly from their EHRs, sending the data through the sub-state HIEs into the MiHIN Shared Services and then into CHAMPS.
The success of the interoperability between the data warehouse, CHAMPS and EHRs will be dependent upon the shared services and directories of the MiHIN. The Medicaid IT infrastructure will utilize the MiHIN’s core components such as the provider index, the enterprise master patient index and the security services. The sharing of the MiHIN core components will increase efficiencies and reduce the cost of the Medicaid EHR incentive program.

3.4 Coordination with other Federally Funded and ARRA Programs

Coordination with all ARRA programs in Michigan will continue to be accomplished largely through the facilitation of the State HIT Coordinator. The HIT Coordinator has convened a working group with members of all Michigan ARRA programs which includes: the State HIE Cooperative Agreement, the Regional HIT Extension Center, the Medicaid EHR Incentive Program, and the broadband initiatives. This group will continue to share information and leverage efforts to shared client communities in perpetuity.

The State of Michigan has been working to coordinate projects to successfully secure funds from the two ARRA Broadband programs. First round funding so far has resulted in over $50 million ARRA dollars to be dedicated to Michigan to expand broadband infrastructure and public computing centers. Planning for second round is underway and additional investments are expected in Michigan as a result of applications. The infrastructure that is put in place as a result of these investments will enable data to be moved and shared at higher rates of speed between health care providers where bandwidth has been limited in the past, as well as help make it possible for more citizens to monitor health care from within their homes.

The State of Michigan has worked with many partners on a $24 million FCC Rural Health Care Pilot Project. The Project will aim to connect over 500 rural health care sites via an affordable broadband connection to help foster the movement of health data to and from their clinics. The ability to reach the most rural clinics will help to improve the health care and reduce the costs of offering specialized care in rural and remote areas of the state. The project is currently in the request for proposal stages and is planning to have a contractor begin construction on the network as early as summer of 2010.

Benefits to the general health population are being increased by early implementation of public health use cases, lowering costs, increasing efficiencies, and raising the quantity and quality of data acquired for Michigan’s immunization registry, syndromic surveillance system and disease surveillance system. These public health services existing relationships with cross-state and federal organizations, including the Centers for Disease Control and Prevention (CDC), will benefit those agencies in the same fashion: lowering costs, increasing efficiencies, and raising the quantity and quality of data.

Where gaps exist in the coordination with other federal programs, it is the responsibility of Michigan’s HIT Coordinator to perform outreach throughout the state. The goal of the outreach is to identify issues of common concern and coordination plans will be devised and documented, both in the areas of population and organizational benefits.
4 Domain-Specific Components
With the support and funding provided through the State HIE Cooperative Agreement Program, the MiHIN will be able to maximize the public and private investments that have been made in HIT and HIE throughout Michigan. This funding will also assist in accelerating the implementation of the MiHIN vision by acquiring, implementing, and operating the technical and business infrastructure required to enable the secure exchange of health information within Michigan, with its neighbor states, and across the nation.

Beginning in the fall of 2009 more than 100 State and industry leaders and decision makers have led and molded the activities of the five domain-based MiHIN Workgroups. The result is this MiHIN Strategic Plan for acquiring, implementing, operating and sustaining the MiHIN Shared Services.

This section will present the MiHIN Strategic Plan by the domains based on the guidance of the State HIE Cooperative Agreement. Each domain will begin with an overview of the goals and guiding principles of that workgroup and conclude with the results of the planning process.

4.1 Governance
Full stakeholder engagement and buy-in of governance is critical to success of this and any other HIE initiative. Proper governance is needed to not only oversee business and technical operations of the MiHIN, but also to foster trust through transparency and inclusion, maintain a vision for Michigan and respond to public needs and concerns. The stakeholders of Michigan vigorously debated the full spectrum of governance options through the MiHIN governance workgroup. The following section details the strategy for the governance of the MiHIN Shared Services, which includes creating a new Governance Board and leveraging the experience and strong establishment of the Michigan HIT Commission.

4.1.1 Guiding Principles
The following guiding principles are based on the experience Michigan gained through the MiHIN Conduit to Care process and have been updated to reflect the current statewide and national HIT and HIE landscape. These guiding principles will serve as the foundation for the Governance of the MiHIN.

Guiding Principle 1: Michigan citizens are at the center of the MiHIN goals to improve patient care and population health.

Health information exchange in Michigan will be designed to benefit Michigan residents. Consumer privacy, security and confidentiality are paramount and as such the MiHIN will adhere to all federal and state laws regarding privacy and security to build trust.
Guiding Principle 2: The MiHIN will leverage existing and planned information technology.

Health information exchange will be made accessible to all naturally occurring and commerce-defined communities of providers by leveraging, and to the extent possible not duplicate, existing and planned information technology investments – State of Michigan, regional, community, private and other HIE initiatives.

Guiding Principle 3: Multi-stakeholder collaboration is needed to implement achievable and measurable initiatives.

Cooperation and collaboration on the implementation of health information exchange will drive innovation and change across the various stakeholders in the state as well as foster the sustainability and financial solvency of statewide HIE efforts.

Guiding Principle 4: The MiHIN will conform to applicable federal guidelines.

Statewide health information exchange will be designed and implemented to support Michigan priorities within the guidelines of the Office of the National Coordinator – Meaningful Use, standards, NHIN, etc. – in order to facilitate national health exchange and optimize funding.

Guiding Principle 5: Those that benefit should participate in paying the cost.

Long-term financial sustainability of the MiHIN will be dependent upon fair contribution from those who benefit.

Guiding Principle 6: Adoption and use of the MiHIN is critical to success

Since the benefit of statewide health information exchange comes from adoption and use, the MiHIN should be attractive to a broad range of healthcare stakeholders throughout Michigan and be designed and implemented in phases to deliver early results to support increased adoption.

4.1.2 Governance Model

The model for long term governance of the MiHIN was developed with the input of Michigan’s healthcare stakeholders and leverages existing organizations to fulfill all governance roles and responsibilities. The goal of the MiHIN governance model is to ensure broad-based stakeholder collaboration, oversight and accountability, efficiency and flexibility to align with nationwide HIE governance. The MiHIN long-term governance model will achieve these goals through a coordinated governance structure that includes utilizing the statewide vision and public structure of the existing Michigan HIT Commission and the creation a new MiHIN Shared Services Governance Board to allow those that directly benefit from and financially contribute to the MiHIN Shared Services to govern the business and technical operations.

4.1.2.1 MiHIN Long Term Governance Model

In May 2006, the beginning of Michigan’s long-term governance emerged when the Michigan Legislature created the Michigan Health Information Technology Commission as an advisory
commission to the Michigan Department of Community Health (MDCH). The legislation creating the HIT Commission states that it will facilitate and promote the design, implementation, operation, and maintenance of an interoperable health care information infrastructure as well as advance the adoption of health information technologies throughout the state’s health care system.

The law creating the HIT Commission includes the requirement for 13 members that represent specific Michigan healthcare stakeholders including; Consumers, Doctors of Medicine, Non-profit Healthcare corporations, purchasers or employers, pharmaceutical manufacturers, schools of Medicine, the HIT industry, third party payers, Doctors of Osteopathic Medicine, hospitals, pharmacists and representatives from the Michigan Department of Community Health and the Michigan Department of Information Technology. The HIT Commissioners are appointed by the Governor.

The HIT Commission will uphold the tenants of transparency and inclusion since it is, by statute, subject to the Michigan Open Meetings Act of 1976. As such, the Michigan HIT Commission holds all meetings in a public location with the opportunity for public comment on each agenda and widely publishes the meeting schedule, meeting minutes and agendas. The Michigan HIT Commission must provide the legislature with an annual report.

Leveraging the establishment and experience of the Michigan HIT Commission is a natural choice for specific roles and responsibilities for Michigan’s Governance model. Since its involvement and integral guidance in Michigan’s Health IT and Health Information Exchange projects since 2006, the HIT Commission brings experience and sustainability to the coordinated governance structure as well as transparency and a level of trust among stakeholders.

Under the coordinated governance model, the HIT Commission is responsible for the more expansive roles of the MiHIN governance related to HIE and HIT development and adoption, including, building consensus on principles, development of public policies, overseeing statewide performance, aligning the statewide and national vision and monitoring implementation.

In addition to the Michigan HIT Commission, a new governance board will be created to perform a specific set of roles and responsibilities, which will complete the coordinated governance model. This new entity will be a 501(c)(3) corporation established as the State Designated Entity accountable for the implementation of the MiHIN Strategic and Operational Plans. The new board will enable close alignment with the existing and emerging sub-state HIEs where health information exchange begins. This new entity of the coordinated governance structure will be accountable for the more focused roles including day to day business and technical operations, coordination with state programs including public health and Medicaid, building the statewide technical infrastructure for shared services and implementing sustainable finance structures for the MiHIN activities.

The table below illustrates a high-level division of the roles and responsibilities in the coordinated governance structure. The Michigan HIT Commission has a broad and diverse role...
of guiding HIT and HIE policies that affect the entire state, where the newly created governance board will focus on the business and technical operations of the MiHIN Shared Services, as described in the Technology and Business Operations sections of this plan.

<table>
<thead>
<tr>
<th>HIT Commission</th>
<th>MiHIN Shared Services Governance Board</th>
</tr>
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<tbody>
<tr>
<td>• Setting consensus-based goals, objectives, and performance measures to achieve statewide coverage for all providers that relate to FOA requirements for HIE services</td>
<td>• Facilitating State Strategic and Operational Plan implementation</td>
</tr>
<tr>
<td>• Overseeing diverse ongoing health information exchange activities to ensure compliant HIE practices, meeting targets for interoperability, and demonstrating health care improvements.</td>
<td>• Ensuring the coordination, integration and alignment of efforts with Medicaid and Public Health programs through efforts of HIT coordinators.</td>
</tr>
<tr>
<td>• Navigating emerging opportunities and requirements to align state efforts with the NHIN, including standards and emerging governance.</td>
<td>• Facilitating the implementation of statewide HIE technical infrastructure according to the agreed upon respective roles and responsibilities of local, regional and state level stakeholders, vendors and state government.</td>
</tr>
<tr>
<td>• Monitoring the implementation of statewide HIE technical infrastructure according to the agreed upon respective roles and responsibilities of local, regional and state level stakeholders, vendors and state government</td>
<td>• Developing public and/or private financing strategies and ensuring a sustainable business model is developed that supports and incorporates different types of HIE across the state.</td>
</tr>
<tr>
<td>• Supporting business and technical operations as appropriate.</td>
<td>• Supporting business and technical operations as appropriate.</td>
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Figure 4. Role Delineation for the Coordinated Governance Structure

There are four major advantages of the coordinated governance structure. The structure leverages the success of the existing HIT Commission. It enables a broad, statewide view combined with a focus on the connection of sub-state HIEs. Keeping the two separate yet highly collaborative entities promotes efficient and effective decision making toward achieving the goals of statewide HIE while promoting broad stakeholder representation in accordance with the State HIE Cooperative Agreement requirements. The legislative oversight of the HIT Commission combined with the state representation on the MiHIN Shared Services Governance Board provide checks and balances by two branches of state government to the new, emerging statewide HIE.

4.1.2.2 GOVERNANCE MODEL: MEMBERSHIP AND DECISION MAKING AUTHORITY

As an advisory Commission to the Michigan Department of Community Health, the HIT Commission recommends policy and action to MDCH and provides recommendations to the Michigan Legislature annually, at minimum. The HIT Commission is made up of 13 members that are appointed by the Governor to represent stakeholders as specified in the legislation that created the Commission. Current members comprise:

- Gregory Forzley, M.D., of Grand Rapids represents doctors of medicine and is the Medical Director of Informatics for St. Mary’s Hospital in Grand Rapids, MI. Dr. Forzley is also the chair of the Michigan State Medical Society Board of Directors.
• Joseph Hohner of Canton represents nonprofit health care corporations and is the Senior Vice President, Chief Information Officer and Chief of Staff of Blue Cross Blue Shield of Michigan.
• Toshiki Masaki of Canton represents purchasers and employers and is the Public Policy Manager for the Ford Motor Company.
• Kimberly G. Ross-Jessup of Dewitt represents pharmaceutical manufacturers and is the Manager of Governmental Relations for Pfizer.
• Mark Notman, Ph.D., of East Lansing represents schools of medicine and is an Associate Professor and Chief Financial and Technical Officer for the Michigan State University College of Osteopathic Medicine.
• Janet Olszewski of Williamston is the Director of the Michigan Department of Community Health.
• Thomas Lauzon of Shelby Township represents health plans and other third party payers and is the Executive Vice President and Chief Information Officer for Health Plan of Michigan.
• Dennis Swan of Okemos represents hospitals and is the Chief Executive Officer for Sparrow Hospital.
• Ken Theis is the Director of the Michigan Department of Technology, Management and Budget.
• Larry Wagenknecht, R. Ph., of Haslett represents pharmacists and is the Chief Executive Officer of the Michigan Pharmacists Association.
• Robert Paul of Novi represents members of the health information technology field and is the Chief Operating Officer and President of Compuware Corp.
• R. Taylor Scott, D.O., of Williamston represents doctors of osteopathic medicine and surgery and is an Assistant Professor and Director of the Learning and Assessment Center at the Michigan State University College of Osteopathic Medicine.
• Robin Cole of Detroit represents consumers and is the Chief Operating Officer for Pro Care Health Plan.

The MiHIN Shared Services Governance Board will have decision making authority over the business and technical operations of the MiHIN Shared Services. The MiHIN Shared Services Governance Board will be established through articles of incorporation and bylaws that will guide the specifics of voting, financing and membership terms. The MiHIN Shared Services Governance Board will include a maximum of 13 board members. The initial board will include the following seats:

• Sub-state HIE (up to 7)
• Payers (up to 3)
• State government (2, including the Michigan Department of Community Health and Medicaid)
• HIT Commission Representative (1)

Formal integration of the two entities that comprise the coordinated governance structure will be a member sitting on each other’s board. Currently, the categories of membership for the HIT
Commission is specified in legislation, so a legislative change will be sought to formally add a MiHIN Governance Board member to the HIT Commission.

4.1.2.3 Governance Model: Alignment with NHIN

The coordinated governance model is well positioned to align with the emerging NHIN and nationwide HIE governance. As the Michigan SDE, the MiHIN Shared Services Governance Board is a key stakeholder of the NHIN. In turn, board membership of the MiHIN Shared Services Governance Board includes the key Sub-state HIE stakeholders throughout Michigan, providing a direct and cascading connection from the national level to each local healthcare enterprise within the state expected to exchange health information. This alignment will enable health information exchange intra state and well as across state lines in accordance with NHIN strategies and policies as the MiHIN Strategic and Operational Plans are implemented.

A major strength for Michigan is the ability to accelerate the MiHIN Governance model by leveraging the existing and proven HIT Commission in a coordinated governance structure. The HIT Commission adds the breadth and depth of statewide HIE stakeholders along with direct connections to the Executive and Legislative branches of the State of Michigan government. The HIT Commission’s overarching vision for Michigan combined with the focus of the MiHIN Shared Services Governance Board over business and technology will ensure effective division of roles and give clear-cut domain responsibility. The current membership of the HIT Commission and proposed composition of the new MiHIN Governance Board enable optimum balance between broad stakeholder representation and flexibility to evolve in response to the evolving NHIN governance structure.

4.1.3 Accountability and Transparency

The coordinated governance structure is designed to optimize transparency and accountability. The coordinated governance structure of the HIT Commission and the MiHIN Shared Services Governance Board not only provides accountability through a checks and balance mechanism but also enables stakeholder buy-in and trust.

The Michigan HIT Commission is accountable to the Executive and Legislative branches of government as it falls under the auspices of to the Michigan Department of Community Health and is appointed by the Governor. Further, the HIT Commission provides recommendations and an annual report to the Michigan Legislature.

The MiHIN Shared Services Governance Board is also accountable to the Executive and Legislative branches of government as it will be created by designation as Michigan’s State Designated Entity, which is a designation that is made by the Governor.

Both the HIT Commission and the MiHIN Shared Services Governance Board will be accountable to one another. The HIT Commission will include a member of the MiHIN Shared Services Governance Board (pending Legislative action) and the MiHIN Shared Services Governance Board will include a member of the Michigan HIT Commission. Further, as a standing agenda item, the MiHIN Shared Services Governance Board will provide a monthly
update to the Michigan HIT Commission. This will ensure cross-coordination and the necessary level of checks and balances.

Under the coordinated governance structure, there will be a continual need for stakeholders to continue to directly participate in the formulation of MiHIN activities, policies and standards through multiple mechanisms. In a near-term example, working committees will need to form to assist in the development of privacy and security policies and interoperability standards. The direction and monitoring of the working committees will be conducted in the already established open and transparent meeting practices of the HIT Commission.

The HIT Commission is required to adhere to the Michigan Open Meeting Act, Public Act No. 267 of 1976. The purpose of the Act is to strengthen the right of all Michigan Citizens by requiring public bodies to conduct nearly all business at open meetings. Meeting notices and minutes are also required to be publicly available. The HIT Commission’s meeting schedule for the year as well as the meeting minutes and materials are posted on the Michigan Department of Community Health’s website. The agenda always permits time for public comment. The HIT Coordinator is responsible for the HIT Commission’s compliance to the Open Meeting Act.

**4.1.4 State Government HIT Coordinator**

The Michigan HIT Coordinator is a position that is housed within the Michigan Department of Community Health (MDCH), Health Information Technology Office and reports directly to the Chief Deputy Director of MDCH. With Michigan’s strong history of state government involvement in health information, this position has been in place for over three years and is well established in the MDCH organizational structure. Michigan’s HIT Coordinator is positioned to guide state government involvement in all Michigan HIT and HIE programs as well as related programs funded under the American Recovery and Reinvestment Act of 2009, including the federal broadband programs.

The role of the state HIT Coordinator will be to ensure that State of Michigan government is sufficiently represented and involved in HIE throughout Michigan. Michigan’s HIT Coordinator, Beth Nagel, is the manager for the Michigan HIT Commission and will play an integral role in ensuring that the Michigan HIT Commission fulfills all roles and responsibilities through the coordinated governance model. The HIT Coordinator is a key liaison and point of coordination between the Michigan HIT Commission and the State of Michigan and HIT Commission representatives to the MiHIN Governance Board.

The Michigan HIT Coordinator is also responsible for the integration of the State of Michigan’s public health reporting systems and the Medicaid information systems with the MiHIN. Further, the Michigan HIT Coordinator is charged with ensuring that the state of Michigan government is appropriately involved in all HIT and HIE related activities in Michigan.

The Michigan HIT Coordinator serves on Michigan’s Regional HIT Extension Center’s Executive Board and is a member of the Michigan Medicaid EHR Incentive Program steering committee, as well as a partner in Michigan’s HIT Workforce initiatives.
4.2 Finance
The combined efforts of the Michigan Departments of Community Health and Technology, Management and Budget and the many Michigan Health Information Exchange stakeholders have resulted in the establishment of the guiding principles, the overriding strategy, and the underlying approach to the financial sustainability of the MiHIN Shared Services. This foundation not only guided the decisions and efforts that were required to develop the Strategic and Operational Plans for the MiHIN Shared Services, but will provide the ongoing guidance for financial decision making by the MiHIN Shared Services Governance Board.

4.2.1.1 Financial Sustainability Guiding Principles
The Guiding Principles provide the fundamental framework for financial decision making for MiHIN, these are meant to shape all financial decisions for the MiHIN Shared Services through and beyond the State HIE Cooperative Agreement Program funding period, and in addition, these will influence other critical MiHIN business, technical, and operational decisions.

- Multi-stakeholder collaboration is needed for success
- The MiHIN Shared Services must be self-sustaining
- The MiHIN Shared Services business model must balance cost, value, & risk
- Stakeholders must see value to justify the investment
- The MiHIN Shared Services should leverage existing private and public HIT and HIE investments, and to the extent possible not duplicate these existing or planned investments
- Grants should be used to enable the launch and evaluation of a new value added service, but should not be relied upon for the long term sustainability of a service or for the MiHIN Shared Services itself
- Revenue should not be sought disproportionately from any one stakeholder or group of stakeholders; the Sub-state Health Information Exchanges and Healthcare Payers will be the initial and primary customers of the MiHIN Shared Services
- Those who benefit should participate in paying the costs; long-term sustainability will be dependent upon fair contribution from those who benefit including all who realize benefits such as those related to improvements in care, quality, patient safety, patient and provider satisfaction, reduced disparity in care, reduced redundancy in tests, admissions, visits and procedures, and improved communications resulting in cost reduction or avoidance
- The MiHIN Shared Services should be attractive to a broad range of stakeholders and be implemented in phases, as necessary, to deliver early results to promote adoption
- The MiHIN Shared Services must encourage adoption by being an open and non-proprietary network
- The MiHIN Shared Services must support participant access to non-MiHIN supplied HIT and HIE applications hosted by other participants or service providers
4.2.2 Financial Sustainability Strategy

The MiHIN Shared Services strategy for financial sustainability incorporates the guiding principles listed above and establishes the foundation for financial sustainability. The strategy is to implement a series of funding mechanisms that establishes an equitable and proportional allocation of costs across all MiHIN Shared Services customers. It directs the organization to utilize only those funding mechanisms that through an ongoing process of analysis and review achieve the following:

- Recognize that all who benefit from the values realized from the exchange of health information will equitably and proportionally participate in the financing and support of the statewide shared services network, and
- Optimize the use of the statewide shared services network by establishing a fee structure that encourages the adoption and use of HIT and the exchange of health information within and across Sub-state HIEs, thus further assisting eligible providers in achieving “meaningful use”, and
- Enable the extension and expansion of the capabilities, services, and benefits of the exchange of health information within the State of Michigan by ensuring that sustainable revenues are available to meet both current and future federal, state, and stakeholder service demands beyond the four years of the State HIE Cooperative Agreement funding (2010 – 2014).

4.2.3 Financial Sustainability Approach

The MiHIN Shared Services will evaluate and potentially utilize several different funding mechanisms to ensure the operational sustainability of the statewide shared services network beyond the HITECH grant funding period. The selected mechanisms will enable the equitable and proportional allocation of costs to the various stakeholders, will ensure that the pricing structures reflect the relative value of each service, and will as much as practical reflect the environmental, economic, and political circumstances affecting the delivery of healthcare in Michigan.

Startup & Pilot Stage - During this stage of initial operations (2010 and 2011) MiHIN financing will utilize funds provided through the State HIE Cooperative Agreement and the State of Michigan matching funds to cover planning, capital, operational startup, and pilot project implementation costs.

Production Stage - Beginning in 2012 with the first full year of production operations MiHIN will initiate the collection of access and usage fees from its primary customer base which includes the sub-state Health Information Exchanges and public & private healthcare payers. These fees will begin establishing the financial sustainability of the network. It is likely that the allocation of the fees to each of the primary customers will be based upon one or more factors that reflect some relevant aspect of its service base such as total population, number of hospitals, number of hospital beds, number of admissions, number of ER visits, number of ambulatory encounters, number of physicians, market share, number of covered lives, or other such statistical indicator.
of potential impact and benefit. This equation will be finalized by the MiHIN Shared Services Governance Board.

Each sub-state HIE will determine the methodology it will use to allocate their MiHIN Shared Services fees across their customer base. This process will significantly simplify the MiHIN Shared Services revenue administration activities, and will take advantage of the revenue processes already in place in each sub-state Health Information Exchange.

Additionally, during this initial production period the MiHIN Shared Services may institute the use of additional access and usage fees such as membership, subscription, sponsorship, transaction, and fee-for-service fees to accommodate the addition of new customers and new statewide shared services. This evolving fee structure and the growing customer base will provide the sustaining revenue required to operate the MiHIN statewide shared services network beyond the State HIE Cooperative Agreement funding period.

**Sustainable Production Stage** - Finally, beginning in 2014 at the end of the State HIE Cooperative Agreement period, the MiHIN Shared Services will have established the statewide shared services and the customer base to provide the sustaining revenues it requires for operations without dependence upon additional grant funding or State of Michigan government subsidies. While grant funding will no longer be required for operational support, it is anticipated that additional grant funding will be sought to support the acquisition, deployment, and piloting of new statewide shared services.

### 4.2.4 Financial Sustainability Modeling

The MiHIN Shared Services will utilize financial sustainability modeling in two distinct stages to analyze, establish, and refine the fee structures required to generate the sustaining revenues. The first stage was initiated to support the Strategic and Operational Plan development processes. The second stage will be undertaken by the MiHIN Shared Services Governance Board once it is established and upon receipt of notice of ONC approval of the MiHIN Shared Services Strategic and Operational Plans and the associated funding.

**Stage 1** modeling will utilize estimated operational and capital budgets generated from information and knowledge obtained from the analysis of existing operational HIEs, information obtained from an informal request for information process conducted with a few of the leading HIE software vendors, and from information obtained through the practical experience of the HIE consultants retained to facilitate this planning process. While these figures will certainly change once the MiHIN Shared Services undertakes its initial steps toward startup and implementation, they do provide a reasonable basis for these preliminary financial planning activities. The results of the Stage1 modeling are displayed in the table shown below, this includes operational and capital budget projections, and projections of the revenue required from each funding mechanism for each of the six years included in the modeling.
Figure 5. Stage 1 Capital & Operating Budgets and Funding Mechanisms Revenues

Stage 2 modeling will begin after the MiHIN Shared Services Governance Board has been created and upon receipt from ONC of the approval of the MiHIN Strategic and Operational Plans and the associated funding. In this phase the estimated operational and capital budgets developed during Stage 1 will be replaced with actual budgets that result from completing a
formal request for proposal process and from the implementation and ongoing support of the planned HIE pilot projects. This modeling is an ongoing process that will allow all factors including those listed below to be fully analyzed and periodically reviewed to ensure that the funding mechanisms remain aligned with the financing strategy and guiding principles, and that they continue to produce the required sustaining revenue.

- The impact, appropriateness, acceptability, and timing of each of these funding mechanisms as it relates to each stakeholder group
- The size and number of participants in each stakeholder group
- The timing of the delivery of each of the identified service priorities
- The extent to which the value of a given service can be determined and associated with one or more stakeholder groups
- The extent to which a given service has a directly associated ROI that can be associated with one or more stakeholder groups

Stage 2 modeling will enable MiHIN Shared Services Governance Board to finalize its initial revenue targets and establish the appropriate fee structures that will be incorporated into the stakeholder trust agreements thereby establishing the formal basis for financial support of MiHIN. Additionally, this modeling activity will allow MiHIN Shared Services Governance Board to develop a business plan that details the financial sustainability strategy and approach and submit it to ONC by the February 10, 2011 deadline.

4.3 Technical Infrastructure

The overarching goal of the MiHIN Technical Architecture is the secure and efficient exchange of patient’s health care information to improve operational efficiency and patient care. The MiHIN Shared Services is designed as a network of networks with local providers connecting to sub-state HIEs which connect to the MiHIN Shared Services Bus (SSB) and then to the NHIN. The technical architecture is designed to satisfy the following goals:

- Put current and comprehensive patient information in the hands of practitioners at the point of care.
- Electronically exchange clinical information between disparate health care information systems (e.g., hospitals, laboratories, physician offices, ambulatory treatment centers, and pharmacies) while maintaining the integrity and meaning of the information being exchanged.
- Facilitate delivery, access and retrieval of clinical data to provide safe, timely, efficient, effective, equitable, patient-centered care.
- Drive quality improvements and be patient-centered as opposed to driven by efficiency or cost reduction.
- Make HIE and HIT compatible and interoperable
- Institute business process and behavior changes at the provider level to facilitate the sharing of information.
- Align HIE and HIT incentives for the adoption of such technologies
• Free clinical data from their silos, transform it and deliver it securely, rapidly and reliably to the patient’s caregiver;
• Aggregate and organize clinical data to inform physicians and other caregivers about the patient’s complete history and treatment, thereby enhancing quality and patient safety;
• Promote the development of statewide master patient and provider indices and a record locator service (RLS)
• Identify and develop HIT and HIE solutions for medically underserved areas, technology challenged areas or areas falling between naturally occurring sub-state HIEs
• Promote national standards to guide the sharing of information and electronic data interoperability.
• Safeguard privacy and security of personal health information.
• Leverage existing health information systems.

4.3.1 Guiding Principles
This section contains an overview of the Guiding Principles and includes statements about how the MiHIN Shared Services must fit into the existing business and technical environment. The MiHIN Shared Services will be an open, scalable and extensible infrastructure that follows the following guiding principles:

• Be built from numerous vendor products which must interoperate
• Be vendor agnostic
• Support multiple communication protocols within reason (FTP, SOAP, Sockets, etc).
• Be a hybrid architecture that will not be entirely federated or centralized
• Comply with the latest interoperability standards but be practical enough to get something working
• Undertake an incremental approach to implementing a statewide architecture
• Be consistent with national industry standards (web services, etc)
• Focus on designing information exchange, not end-user applications
• Interoperate with sub-state HIEs
• Interoperate with existing state government systems like public health surveillance and reporting
• Use web services for real-time communications where feasible
• Interoperate with the NHIN
• Be highly secure and Health Information Portability and Accountability Act (HIPAA) compliant for all external communication paths
• Maintain the privacy of patient data
• Be extensible (capable of adding new functions or services easily)
• Be scalable (capable of adding more users, transactions, other volumes of work easily)
• Support delegated user authorization, authentication & administration
• Support auditing
• Be able to support data and analytical capabilities
• Be cost-effective to maintain
4.3.2 Technical Infrastructure Strategy
This section describes the strategic approach to the technical architecture design for the MiHIN Shared Services based on the priorities identified in the ONC Guidance for Meaningful Use and guidance from the State of Michigan. The MiHIN Shared Services is an infrastructure design that enables widespread interoperability among disparate systems. This design is both vendor agnostic and technology agnostic, and focuses on technical standards, protocols, and architectural patterns. The architectural design framework will guide detailed requirements definition, vendor selection and the implementation of the MiHIN shared services.

The intent of this technology infrastructure design is to look long-term at networking infrastructure and business models that support many different needs for information exchange and act short-term beginning with a few kinds of information exchange that encourage provider and organizational participation and generate cost savings that lead stakeholders to accept long-term financial participation in the networks.

The architectural details specified here are intended to accommodate implementation of the shared services bus while providing a framework that sets boundaries on the dimensions of technical implementation to ensure interoperability and consistent operation. Relevant interactions between the shared services bus and sub-state HIEs are described in this section.

Since standards are critical for long-term viability of the MiHIN the architecture has an overarching goal to be compliant with the national standards for healthcare interoperability recognized by the Secretary of the Department of Health & Human Services (HHS). Specifically, HHS recognizes interoperability specifications containing harmonized standards published by the Healthcare Information Technology Standards Panel (HITSP), and as such, the MiHIN is being designed as a HITSP-compliant and HITSP-consistent (where no direct conformance criteria exist) architecture. The approach to accomplish that goal will be described in this section.

As national standards for interoperability and data exchange are developed and adopted, MiHIN will advocate, promote, align with state standards and foster adoption of national standards by all Michigan HIEs. The use of such standards will provide organizations with the interoperability necessary to electronically move clinical information between disparate provider organizations.

4.3.3 Proposed Conceptual Architecture
The MiHIN Shared Services will be implemented using a service-oriented architectural paradigm (SOA), implemented through web services operating through an enterprise service bus (ESB), with a four-tier protocol stack. The Conceptual Architecture of the MiHIN Shared Services is depicted in the figure on page 30.

4.3.3.1 Core Design Concepts
The design of the MiHIN Shared Services Bus is predicated on there being relatively few direct connections (<50). The idea is based on the common network design principle of segmentation.
for performance, security and reliability. We expect that a significant amount of the patient data that needs to be exchanged will be within sub-state HIEs where the patient receives care. Just as networks use bridges, switches or routers to segment traffic we will expect that HIEs will segment traffic that can stay within the HIE and only route transactions to the MiHIN Shared Services Bus that must cross HIEs.

The MiHIN Shared Services Bus architecture is designed to accommodate a vast majority of the administrative and clinical use cases that support broad Health Information Exchange by implementing four core services. Those services are:

- **Developing a Security Framework** - Allows for the authentication of systems (nodes) and users and manages patient consent. Also implements appropriate security policies for role-based access and auditing.
- **Messaging** - The ability to “push” messages from one node to another and accommodate data translations required for each site.
- **Subject Discovery** - The ability to perform deterministic and probabilistic searches for patients across HIEs.
- **Query for Documents** - The ability to look up structured and unstructured data in the form of documents stored somewhere in the MiHIN network of data repositories.

Any use case which is predicated on connecting to a secure network and either pushing data or performing inquiries can be met with these core services. Of all the ONC priorities mentioned above the only one that could not be accomplished with these base services alone is ePrescribing which requires a fairly complex prescription ordering system.
Figure 6. MiHIN Conceptual Architecture
MiHIN Shared Services is being designed with sub-state HIEs which provide “last mile” connectivity to providers and State of Michigan systems that are connected to the shared services bus for cross community interoperability and NHIN connectivity. This represents the best, most viable short term architecture with the most sustainable long term benefits. For a summary of alternative approaches considered, see Appendix 6.3 Alternative Approaches Considered.

4.3.3.2 DATA EXCHANGE COMPONENTS

NHIN Connectivity

This component provides communication to the Federal Government and other states. This connectivity is effective for communicating outside the MiHIN Shared Services.

MiHIN Shared Services Bus

This component provides the shared services bus connectivity and state-wide services for sub-state HIEs, ancillary data sources and connection to the NHIN.

Sub-state HIEs

Progress has already been made on establishing various models of sub-state HIEs in Michigan, some supported by public funding and some through private investment.

Since the sub-state HIE is central to MiHIN Shared Services architecture it is critical that a set of criteria be defined to designate an organization as a sub-state HIE. Designation as a sub-state HIE will allow an organization that agrees to adhere with the strategic and operational plans and optimize the use of statewide shared services to connect to MiHIN Shared Services.

Criteria were developed for each of the domains as follows:

- **Governance**
  - A sub-state HIE shall have a governance structure which includes representative members of participating stakeholder groups in the HIEs area of operations.
  - A sub-state HIE shall have a policy which addresses transparency and openness of its proceedings and decision making with the stakeholders it serves.
  - A sub-state HIE shall have a strategic plan

- **Finance**
  - A sub-state HIE shall agree to contribute on a monthly or otherwise designated frequency the apportioned MiHIN access and usage fees comprising their MiHIN Membership Fee.
  - A sub-state HIE shall provide MiHIN an annual report of its financial position

- **Business Operations**
  - A sub-state HIE shall commit to National (ONC, CMS, etc.) directives, standards and requirements regarding:
Interoperating with EHRs certified by ONC approved certification bodies
• Meaningful use and associated timeframes
• HIE/RHIO certification
• Privacy & Security
• Audit

Technical
• A sub-state HIE shall be capable of all MiHIN technical specifications relevant to their operations, security policies and use cases. Minimum specifications include enabling subscribers to access patient clinical data including lab results and medication history and working towards providing all elements of CCD. MiHIN technical specifications will be published in Requirements Documents.
• A sub-state HIE must be capable of supporting all MiHIN security specifications including the IHE Audit Trail and Node Authentication (ATNA) specifications for secure nodes and audit trails. The HIE must also support user authentication at the HIE level and the use of SAML assertions (of user identity) for all transactions across the MiHIN.
• A sub-state HIE must be capable of supporting all MiHIN patient identity transactions.
• A sub-state HIE must be capable of supporting all MiHIN Query for Documents (XDS.b & XCA) transactions and must deploy an XDS.b document repository.
• A sub-state HIE shall enable bidirectional interoperability between locally connected health information systems (inpatient, ambulatory, pharmacies, clinician offices, health plans and the states) in areas of operation and provide the gateway to the MiHIN for "cross community" transactions.

Legal and Policy
• A sub-state HIE shall comply with all privacy and security requirements set by Federal and State law and MiHIN governance-approved policies. The compliance will be documented through written policies and procedures.
• A sub-state HIE shall provide a written copy of their Data Use and Reciprocal Support Agreement in use

4.3.4 Interoperability

The long term plan for the MiHIN Shared Services Bus interoperability includes four core capabilities:

• Aggregating data and interconnecting providers via sub-state HIEs
• Connecting sub-state HIEs and providing a vehicle for the delivery of shared services
• Sharing clinical and administrative services and applications
• Providing NHIN connectivity for sharing data with other states and the federal government
This is a long term venture that will take substantial time and resources. To enhance interoperability the architecture focuses on several technical design paradigms:

- HITSP and other national and industry standards
- Vendor agnostic design
- NHIN design concepts
- “Shared Services Bus” to act as the broker for cross community interoperability
- Security framework that complies with state and federal regulations but is also straightforward to implement

### 4.3.5 NHIN

HHS has sponsored a large scale development effort to build a national health information exchange capability called the Nationwide Health Information Network (NHIN) that instantiates the HITSP standards into real networks and systems. The MiHIN will leverage the work of the NHIN effort in its architectural framework.

The MiHIN will support connectivity to the NHIN for data exchange with the federal government and other states with NHIN-compatible infrastructures.

We will support the NHIN core functions of Security Services, Subject Discovery, Query for Documents, and Retrieve Documents. NHIN Standards are mostly are still being tested but there is at least one case of limited production with the MedVirginia connection to the Social Security Administration using Connect Open Source. To meet these functional requirements we will follow the NHIN Trial Implementations specifications as follows:

- Authorization Framework Service Interface Specification v2.2
- Messaging Platform Service Interface Specification v 1.9.8
- Patient Discovery Service Interface Specification v 0.9
- Query for Documents Service Interface Specification v 1.6.10
- Retrieve Documents Service Interface Specification v1.6.8
- Health Information Event Messaging v1.5
- NHIN Services Registry Specification v1.3
- Access Consent Policy Specification v0.3
- HIEM Profile Framework

### 4.3.6 Interoperability with Federal Systems

The table below specifies the approach MiHIN will take to develop interoperability with federal systems.

<table>
<thead>
<tr>
<th>System Purpose</th>
<th>Interoperability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care for veterans</td>
<td>The MiHIN identify the sub-state HIEs that can work with the local Veterans Administration hospitals to develop mechanisms to connect to MiHIN or to the NHIN. This will be a longer term project and will depend on how the VA System decides to integrate into nationwide HIE.</td>
</tr>
<tr>
<td>Social security disability benefits</td>
<td>Investigate a working relationship with the Southeastern Michigan Health Information Exchange (SEMHIE) who was recently awarded a $2.9M grant to</td>
</tr>
</tbody>
</table>
**Tribal care**
The MiHIN will identify the sub-state HIEs that can work directly with the local Indian Health Services (IHS) providers to develop mechanisms for these providers to connect to the MiHIN or perhaps to integrate this data by connecting to the NHIN. This will be a longer term project and will depend on how the IHS decides to integrate into nationwide HIE.

**Public health reporting**
There are several use cases are under consideration for the MiHIN that will support public health reporting. The Michigan Care Improvement Registry (MCIR) is a secure web-based statewide immunization information system accessed by more than 4,000 health care organizations. The Michigan Disease Surveillance System (MDSS) is a secure web-based statewide integrated surveillance system. MDSS has improved Michigan’s ability to identify and track emerging infectious diseases and potential bioterrorism attacks.

Both of these systems are intended to integrate into the MiHIN. Over time, the MiHIN will work with the federal government to use this system and the MiHIN to connect to the CDC and other federal agencies.

**Emergency preparedness and response**
The Michigan Syndromic Surveillance System (MSSS) is a real-time surveillance system tracking and monitoring the chief presenting complaints from emergent care settings allowing public health officials and providers to rapidly detect and track unusual outbreaks of illness that may be the result of bioterrorism, natural outbreaks or other public health emergencies.

The Michigan Health Alert Network (MIHAN) is a secure, Internet-based, communications and alerting system. The MIHAN contains a directory of over 4,000 participants from local health departments, hospitals, clinics and many other critical first responders across the state. It also includes many of Michigan’s state government agencies. The MIHAN recently received Public Health Information Network certification from the CDC.

These systems are intended to integrate into the MiHIN. Over time we will work with the federal government to use this system and the MiHIN to connect to the CDC and other federal agencies.

*Figure 7. Interoperability with Federal Systems*

**4.3.7 Interoperability with other States**
The MiHIN will be designed using NHIN compatible standards and services which will allow us to perform cross-community services both within the MiHIN and to other states. As stated above we will support security, subject discovery, query for documents and retrieve documents services which will facilitate significant capabilities for inter-state HIE.

**4.3.8 Medicaid and other State Systems**
There are several Michigan Department of Community Health (MDCH) systems that could be connected to the MiHIN Shared Services. MDCH systems can be classified into two categories that represent the degree to which they would benefit from, contribute to, and impact the MIHIN Shared Services.

The first category is systems that should be early services on the MIHIN Shared Services. These are MDCH systems that require interaction with a number of providers across the state and benefit from two-way communication with those providers. These systems often provide information back to providers or act as a gateway to federal government agencies such as the
Centers for Disease Control and Prevention. These would be MCIR, State Lab System and Medicaid CHAMPS systems.

The second category is systems that can benefit from the MiHIN Shared Services infrastructure. These systems would benefit from automatic collection of relevant data or data exchanges with other systems. The MDSS, MSSS, Birth Registry, and Death Registry would be in this category.

<table>
<thead>
<tr>
<th>State System / Medicaid</th>
<th>Interoperability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michigan Care Improvement Registry (MCIR)</td>
<td>The Michigan Care Improvement Registry is a powerful registry tool that has grown far beyond its original scope of protecting communities from vaccine-preventable diseases and to assure that the population of Michigan is appropriately immunized and that required child health prevention screenings are completed with the most efficient use of program resources. The MCIR is now a full-fledged population management registry and in conjunction with the state data warehouse provides analysis of at-risk populations. MCIR will interoperate with the MiHIN in several ways. First it will benefit by utilizing the master data management tools of the MiHIN specifically the EMPI for patient matching. Secondly it will benefit from the connection of EHR and other clinical systems into the MiHIN for reporting the vaccinations given to residents. Finally the MCIR can provide benefit to providers and patients by making vaccination records available to MiHIN users by populating a State of Michigan XDS repository that will be connected to the MiHIN.</td>
</tr>
<tr>
<td>Michigan Bureau of Labs Systems</td>
<td>The Bureau of Labs has one main lab system (StarLIMS) and a few other systems which provide lab data management and reporting for the State Lab. The state labs will benefit from two-way communications over the MiHIN by being able to receive lab orders from providers and being able to report back lab results. In addition the state lab should benefit from being able to report lab results to the CDC and other organizations using the MiHIN. Finally the state lab will be able to use the same State of Michigan XDS repository as mentioned for MCIR to make lab results available to users of the MiHIN.</td>
</tr>
</tbody>
</table>
| CHAMPS Medicaid System | The Community Health Automated Medicaid Processing System (CHAMPS) is full featured payer system which provides the State of Michigan with nearly all the features they need for Medicaid patients. The system went live in early 2009. CHAMPS is capable of supporting all HIPAA transactions including:  
  - 270/271 Eligibility requests  
  - 837 (P, I, D), 276/277 and 835 Claims set of transactions  
  - 834/820 set of Managed care transactions  
  - 278 PA transaction record  
  In addition the CHAMPS system has a JAVA Composite Application Platform Suite (JCAPS) interface engine which supports all HL7 transactions. The system has significant features that support interoperability with the MiHIN Architecture including support for PIX and PDQ transactions which would allow it to use the proposed EMPI and the Continuity of Care Document for populating patient records into a claims-based Medicaid health record. |
| Michigan Disease Surveillance System (MDSS) | The Michigan Disease Surveillance System (MDSS) will benefit from the MiHIN by allowing labs in the state to report their notifiable-disease test results electronically. Lab results can come from the state lab or private labs and can then use the MiHIN for reporting to the CDCP. |
| Michigan Syndromic | The Michigan Syndromic Surveillance System (MDSS) will benefit from the MiHIN by allowing emergency departments in the state to report their notifiable-disease |
4.3.9 Cross Community Interoperability

The MIHIN Shared Services is built to enable interoperability within an HIE and cross community (i.e., HIE to HIE). MIHIN Shared Services is designed to enable HIE to HIE communications as long as the HIE follows the MiHIN standards and implements some core and “middleware” technology.

**HIE to HIE**

Much of the core infrastructure necessary for integrating into the MIHIN Shared Services Bus must be in place to establish an HIE. On top of those core components will be a gateway layer which includes the services for interoperability with the MIHIN Shared Services Bus. The core components are:

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Messaging Gateway</td>
<td>The messaging gateway or interface engine is the tool that provides network connections to data source and destination systems and can collect, translate and deliver messages. The messaging gateway is used inside the HIE and will be the infrastructure for sending and receiving messages from the MIHIN Shared Services Bus.</td>
</tr>
<tr>
<td>Enterprise Master Patient Index</td>
<td>The EMPI is the system used for collecting patient identities and resolving identity conflicts across sub-state HIE member organizations. Connection to the MIHIN EMPI will be through a Subject Discovery service as described below.</td>
</tr>
<tr>
<td>Record Locator Service</td>
<td>The Record Locator Service stores information on any data aggregated into the sub-state HIEs’ federated data repository. There are several models used for this purpose but a typical one is for each member organization to have an edge server for storing this data. The RLS can also look up this data based on a user query. The RLS will interact with the MIHIN through a Query for Documents service.</td>
</tr>
</tbody>
</table>
| User Directory             | Along with other security services that are internal to the HIE a User Directory must be maintained in order to authenticate users. The User Directory will connect to the MIHIN through a security service described below. Along with these core services MIHIN Shared Services will require each HIE to develop a set of gateway services which will allow that HIE to communicate across the shared services bus to other HIEs. These services will include:  
  - Security Services  
  - Patient Identity Feed  
  - Subject Discovery  
  - Query for Documents  
  - Retrieve Documents |

**Figure 9. MIHIN Shared Services Component Description**

**HIE to Michigan Department of Community Health Systems**

Interoperability from HIEs to the Michigan Department of Community Health Systems will work much the same as HIE to HIE. The HIE will develop their gateway and the Michigan Department
of Community Health must also develop a set of interfaces to expose their services as described above.

4.3.10 Technical Architecture/Approach
This section describes the components of the MiHIN Shared Services Bus (SSB) architecture. The symbols next to each component title reference the symbols used in Figure 1, the MiHIN Conceptual Architecture.

4.3.10.1 MiHIN Shared Services Bus
The MiHIN Shared Services will be designed as an Enterprise Service Bus (ESB) architecture. The ESB will be capable of supporting ESB nodes which can provide transaction services. The exact topology of the MiHIN ESB has not yet been designed (single instance or federated for example). The ESB will support one or more service registries for web services provided by secure nodes. Community HIEs will be required to be secure nodes and utilize a four level protocol stack for communication to the ESB.

4.3.10.2 EMPI/RLS
Enterprise Master Patient Index/Record Locator Service will be used for subject discovery (patient lookup) and content indexing services. This component can either be a single component or two separate components.

4.3.10.3 Provider Index
This is an index of all care providers in the state. This could be part of the EMPI listed above or could be implemented as a User Directory.

4.3.10.4 Messaging Gateway
Used for all transaction-based services such as Lab Ordering, Results Reporting and Eligibility Checking. Primary function with be interface transactions and message translation. Nomenclature normalization will be expected to happen at the HIE level.

4.3.10.5 Data Warehouse/Repository
Data repository would be used for centralized storage of data for Public Health Reporting, Quality Reporting, Medical Research and Chronic Disease Registries.
Security services will provide user authentication, access, authorization and auditing services. The User Directory will be a federated design and the MiHIN User Directory will be built by aggregating users from all connected sub-state HIEs or State of Michigan entities.

The MiHIN architecture has an overarching goal to be compliant with the national standards for healthcare interoperability recognized by the Secretary of the Department of Health & Human Services (HHS). Specifically, HHS recognizes interoperability specifications containing harmonized standards published by the Healthcare Information Technology Standards Panel (HITSP), and as such, the MiHIN is being designed as a HITSP-compliant and HITSP-consistent (where no direct conformance criteria exist) architecture.

Since the intention is to follow the HITSP Standards there will be strict adherence to standards for the MiHIN Shared Services to promote an open and interoperable system.

For security, standard for the basis of the MIHIN Shared Services security architecture is the NHIN Messaging Platform v1.9 and the HITSP Security and Privacy Technical Note TN900 v1.3. Most of the constructs we will use are described in TN900.

This specification is primarily concerned with the digital representations and mechanics of the security model. A trusted authority will issue digital certificates to all MiHIN nodes. These nodes use these digital certificates to construct encrypted and digitally signed messages between MiHIN nodes for sending, and to authenticate messages that are received. SAML tokens are used to transmit detailed information assertions about entities requesting information that are used to verify identity and check authorization and consent privileges. Auditable events are captured by each node and stored by that node. Auditable events can be retrieved using the NHIN Audit Log Query Service.

Statewide shared services are broken out into Core Shared Services and Use Cases. While in the short term there will be additional costs to implement shared services bus core services, the potential to provide numerous state-wide shared services to Michigan providers and citizens will more than make up for the short term costs. These services represent the most significant long-term benefit of the architectural model.

One of the primary functions of the EMPI will be the collection of patient demographics for Michigan residents. This will be accomplished by having each participating sub-state HIE or State of Michigan HIE send new patients and patient updates to the MiHIN EMPI in near real-
time. In addition the MiHIN Shared Services will need to be able to process patient merge and un-merge messages.

**Subject Discovery**

Other primary services provided by the EMPI will be patient matching using deterministic and probabilistic algorithms and cross community (HIE) patient inquiries.

**Master Provider (User) Index**

The primary uses of the Master Provider Index will be as both a provider database and a user directory. We will investigate connecting the Provider Index with the National Plan and Provider Enumeration System (NPPES) which is a national source of providers National Provider Identifiers (NPIs).

**Query for Documents (XDS)**

The Query for Documents service will be the primary way that users perform inquiry for clinical and administrative documents over the MiHIN.

**Security Services**

Security services will include state-wide trusted certificate authority for issuing digital certificates for Public Key Infrastructure (PKI). The security services must also host security polices most likely based on user roles. This is known as Role Based Access Control or RBAC.

It is not yet clear whether MiHIN Shared Services will need to have the identity of every provider and their authenticating credentials stored in the Master Provider Index described earlier. User authorization could just as easily be accomplished by using SAML (security access markup language) assertions in each message or inquiry request to the MiHIN and trusting each domain to have already authenticated the user. Security services must also implement audit controls.

**4.3.11.2 LEVERAGING EXISTING STATE RESOURCES**

It is an important task when designing a new infrastructure such as the MiHIN to consider how to leverage existing resources. Considering the complexity and overall costs of building a state-wide Health Information Exchange infrastructure is it imperative not to “reinvent the wheel.” However, infrastructure put in place must match the business and functional goals, and adopt the standards necessary to support state-wide HIE.

Simply because a component exists does not mean it can or should be reused for the MiHIN. Once the details are revealed, it could become too costly, too limiting from an interoperability point of view, or politically unpalatable to reuse existing assets. Four types of stakeholder or state government assets that might be leveraged as part of the MiHIN have been identified, which include:

- Existing Value Added Networks such as the claims processing network
- Existing Components such as EMPIs at the state and other organizations
- State of Michigan systems such as the Michigan Care Improvement Registry
• Existing sub-state HIEs
4.4 Business and Technical Operations

Well thought-out and carefully considered Business and Technical Operations of the MiHIN Shared Services will be integral to success. The following section describes the Business and Technical Operations strategies that will be carried out to successfully implement the technology required to provide the HIE service priorities on a statewide basis and to run the day-to-day operations of the MiHIN Shared Services.

4.4.1 Business Technical Operations Strategy

The selection of use cases for initial implementation on the MiHIN was the result of deliberation of the stakeholders in the MiHIN Business and Technical Operations Workgroup. The initial focus was on prioritizing the HIE service priorities documented by the ONC in the Funding Opportunity Announcement. Several factors in the prioritizing of these services were analyzed including the degree to which each service improved healthcare outcomes and the healthcare workflow. Also, each priority was evaluated based on the size of the population of Michigan that it would affect, whether it supported the proposed Meaningful Use criteria in 2011, if there were known financial sustainability models or if the service is needed to develop HIE capacity in Michigan.

With careful review, data collection, an environmental scan, and debate by numerous stakeholders, the ranking of the HIE Service Priorities is:

1. Electronic clinical laboratory ordering and results delivery
2. Electronic public health reporting
3. Quality Reporting
4. Clinical summary exchange for care coordination and patient engagement
5. Electronic eligibility and claims transactions
6. Electronic Prescribing and refill requests
7. Prescription fill status and/or medication fill history

4.4.2 HIE Service Priorities

Based on funding constraints and other factors, only the top two service priorities were assigned use cases. The prospective use cases were developed based on a ranking that included several factors: such as clinical value, prevalence, stakeholder interest and the degree to which there were already existing technical standards.

In the top two HIE service priorities the following use cases were selected for implementation in the initial stages of the MiHIN Shared Services:

4.4.2.1 ELECTRONIC PUBLIC HEALTH REPORTING

Listed below are the use cases for the Electronic Public Health Reporting service priority.

- **Immunization event to MCIR**: a provider has administered a reportable vaccine. The information is reported electronically to MCIR, the State of Michigan system for immunization tracking.
• **Reportable laboratory result to MDSS**: a laboratory encounters a result that is required to be reported to a public health agency. The laboratory sends the required information to the required public health agency in a structured format suitable for consumption by an electronic system. MDSS is the State of Michigan system for disease surveillance.

• **Immunization history from MCIR**: a provider queries for the immunization history of a patient. Access and consent policies are applied. If allowed, MCIR provides the requested history in a structured format suitable for consumption by an electronic system.

### 4.4.2.2 CLINICAL SUMMARY EXCHANGE FOR CARE COORDINATION AND PATIENT ENGAGEMENT

Listed below are the use cases for the Clinical Summary Exchange for Care Coordination and Patient Engagement service priority.

• **Continuity of Care Documents (CCD) to ED**: a patient presents to the Emergency Department (ED). For treatment purposes, the ED requests the patient’s longitudinal health record from its sub-state HIE. The sub-state HIE aggregates patient medical information available locally and via the MiHIN shared services, and then delivers it to the ED via a CCD.

• **CCDs to Physician Offices**: A provider requests an update to a patient’s longitudinal health record from their sub-state HIE. The sub-state HIE aggregates patient medical information available locally and via the MiHIN shared services, and then delivers it to the provider via a CCD.

### 4.4.3 Medicaid Coordination

Currently, Michigan’s Medicaid EHR Incentive program operations and technical requirements are being documented. Coordination between the MiHIN Shared Services and Michigan’s Medicaid EHR Incentive program has been focused on educating on capabilities, leveraging resources and exploring potential areas of mutual benefit. There is a high level of management and staff cross-over between the two initiatives and that has facilitated a higher level of collaboration.

A working group comprised of staff from the Michigan Department of Community Health, which houses both Medicaid and public health, the Michigan Department of Technology, Management and Budget has formed to continually assess the current state of coordination and to work toward the most efficient and appropriate level of interaction with the MIHIN Shared Services.

### 4.4.4 Leveraging Existing HIE Capacity

Leveraging existing HIE capacity will begin by documenting capacities existing and under development across Michigan. Periodic environmental scans of operational status and new projects will be conducted.
The MiHIN Shared Services will use existing services where technically feasible and appropriate. Under the technical architecture, the MiHIN Shared Services will leverage the sub-state HIE activities to collect and aggregate data on sub-state levels.

To leverage the existing HIE capacity in Michigan, analysis of state-wide HIE resources has already begun. Regular updates to the survey and analysis will be conducted.

4.4.5 NHIN Strategy
The State will utilize the NHIN for information exchange between states and with federal agencies by deploying a state-wide accessible NHIN gateway as part of a future phase.

4.4.6 Human Resources
To ensure adequate human resources for HIE in Michigan, the MiHIN Shared Services will document in the Operational Plan expected staffing requirements for deployment and ongoing support.

There are two critical components to MiHIN Shared Services acquiring and maintaining human resources across geographies and organizations: (1) during initial pilot implementations and (2) for ongoing development of HIE state-wide.

Workforce needs for deployment and ongoing operations for HIE state-wide will be evaluated and re-evaluated on a continual basis.

4.4.7 Vendor and Program Management
Vendor and program management will occur through an implementation staff that will be selected by the MiHIN Shared Services Governance Board. Policies for program and vendor management will be established by the MiHIN Shared Services Governance Board. The implementation staff will be guided by the policies set by the MiHIN Shared Services Governance Board. Implementation staff will be responsible for overseeing technology implementation in accordance with the Operational Plan to include day-to-day oversight of vendor(s) and system integrator(s).

4.4.8 Risk Management
Risk Management will occur through the creation of a risk plan, documenting risks and mitigation strategies. A risk analysis and mitigation plan will address:

- Technical risk – e.g., technology is not properly operating
- Process risk – e.g., method for deploying does not fit current needs
- Strategic risks – e.g., problematic choice of use cases or architecture/sustainability/governance
- User Acceptance risk – e.g., providers and consumers are slow to see value in the methods or information shared via HIE

4.4.9 Deployment Strategy
The MiHIN Shared Services deployment strategy involves piloting a series of use cases in incremental steps that build upon one another.

The initial projects are being grouped into three phases – deploy, pilot and production. Each phase will deliver a specific functionality and will be the basis for building the additional functionality of later use case implementations. Each phase implements a use case that falls under one or more of the seven HIE service priorities that were set by the State HIE Cooperative Agreement guidance and were prioritized by the MiHIN Business Operations workgroup.

Please note that only the first two phases are funded under the State HIE Cooperative Agreement and associated matching funds. It is expected that Phase 3 will be funded using other grants and alternative funding sources.

The two phases of deployment represent use cases that require similar technologies. Once the technologies, policies and operations of each phase are implemented successfully, the next phase will begin. The projects build on one another in a way that establishes base capabilities, before adding functionality. All deployment phases will have an early proof-of-concept period, testing the capabilities of MiHIN and participant systems to read, format, transform and move data as discrete activities, separate from each other and allows the documentation of system capabilities and potential errors in discrete units. The total deployment time for the two phases is expected to be 12 months. It is estimated that the third phase can be completed in 6 months once appropriate funding is identified and Phase 1 and 2 are completed.

In Phase one, scheduled from October 2010 through March 2011, two use cases will be implemented. Phase one also requires the MiHIN core capabilities of security services, MPI and provider directory. During this first phase, technologies for results interfaces, terminology normalization, and immunization and external repository interfaces will be deployed. The first use case is to report lab results to the Michigan Disease Surveillance System (MDSS) and will enable the mandatory reporting of lab results from appropriate organizations across the state. The second use case is immunization reports to the Michigan Care Improvement Registry (MCIR) and will enable the mandatory reporting of vaccinations from administrating providers through sub-state HIEs to the MCIR.

In phase two, scheduled from April 2011 through September, three use cases will be implemented. The second phase requires an MPI, Shared (SOA) Services Bus, , and XDS services from the MiHIN core capabilities as well as the completion of Security Services. During this time, technologies for XDS inquiries, XDS repository interfaces and ADT interfaces will be deployed.

The third use case, immunization history from MCIR, enables the retrieval of electronic immunization histories. The fourth use case, physician notes via Continuity of Care Document (CCD), will enable the storage and retrieval of physician notes in the CCD format. This solves the problem of inadequate patient records during transfers of care and will result in better clinical outcomes. The fifth use case, clinical summaries will further enable clinical information
sharing between healthcare providers, solving the problems of inadequate patient records, resulting in better clinical outcomes.

In phase three, use cases six through eight will be implemented pending the identification of alternative funding sources other than the State HIE Cooperative Agreement and State of Michigan matching funds. The sixth use case, syndromic result to the Michigan Syndromic Surveillance System (MSSS), enables the transmission of emergency department admission to the MSSS. The seventh use case, lab results inquiry, enables a sub-state HIE to query across all persisted lab results, providing a central registry of lab results and enabling the transmission of the lab result from the repository to the sub-state HIE. The eighth use case involves the transferring of Medicaid Eligibility information.

The use cases will be deployed using the sub-state HIEs as pilot sites. Criteria will be developed by the MiHIN Shared Services Governance Board to select pilot participants. The criteria will cover technical, operational, financial and policy factors.

Deployed use cases will be limited to the pilot organizations for the initial deployment period. After three months of successful pilot operations, a six-month limited-production phase will occur. During the deployment phase, organizations interested in implementing the piloted use case will be solicited, evaluated, and selected for the subsequent phase, limited-production. During limited-production, a small number (less than 6) of organizations will implement the use case. This will allow the MiHIN to scale-up operations and test capacity before wide-scale adoption. Successful completion of the limited-production phase will occur when six months of critical-error-free operations have occurred. The use case and its deployed technologies will then be considered production and will be available to any interested organization. Piloting organization will receive funding to help offset the cost of implementing the use case.

The deployment strategy phases, implemented use cases and timelines are summarized in the figure ten on the next page.
| Core Infrastructure Buildout                  |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
|---------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Provider Directory                          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| XDS Registry (RLS)                          |          |          |          |          |          |          | Oct-11   | Nov-11   | Dec-11   | Jan-12   | Feb-12   | Mar-12   |          |          |          |          |          |          |          |
| Shared Services Bus                         |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| NHIN Gateway                                 |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| **Security Services**                        |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| Audit and Node Authentication               |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| Consent                                     |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| Roles                                       |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| **Phase I Use Cases**                       |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| Labs to MDSS                                 |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| Immunizations to MCIR                      |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| **Phase II Use Cases**                      |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| Immunization History from MCIR             |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| CCDs to ED                                  |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| CCDs to Physician Offices                  |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| **Phase III Use Cases**                     |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| Syndromic results to MSSS                  |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| Medicaid Eligibility                        |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| Lab Results Inquiry                         |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |

**Figure 10. MiHIN Deployment Strategy**

Funded Box: Items inside the box are funded by this State HIE Cooperative Agreement. Items outside the box would require additional funding from alternative sources to complete.
4.4.10 Outreach and Communications

The outreach and communications strategy of the MiHIN focuses on creating a message that can be delivered at 1) the provider level and 2) the consumer level. The Michigan HIT Commission will be responsible for determining the outreach and communications strategies for Michigan that have an overarching goal.

The provider level communications will be achieved by collaboration with other organizations, such as Michigan Regional HIT Extension Center - M-CEITA, the Michigan State Medical Society, and other healthcare provider organizations in Michigan. The provider-level communication will focus on the benefits of Health Information Exchange, the relationship between Health Information Exchange and the proposed Meaningful Use criteria, and the opportunities to engage in HIE in Michigan.

Communication and outreach at the consumer level will be done through utilizing community group meetings, public meetings, employer meetings and other available forums. Outreach on this level will be focused on assisting citizens in understand the direct benefits to their health of HIE, addressing privacy concerns, understanding potential impacts and educating on the privacy policies.

4.5 Legal/Policy

Michigan has been working on privacy and security policies for HIE since 2006. Utilizing a workgroup made up of a variety of stakeholders and volunteers has created the foundation for a shared vision that encompasses a unified approach to addressing security and privacy concerns.

4.5.1 Goals

The MiHIN Shared Services will focus on building consensus throughout Michigan by balancing the benefits of HIE and ensuring that privacy and security protections of health information appropriately protect consumers. The MiHIN Shared Services will build a statewide process for the ongoing development of legal guidance.

4.5.2 Guiding Principles

In order to manage the development of privacy and security as the MiHIN Shared Services grows, Michigan will rely on and prioritize the Nationwide Privacy and Security Framework principles that include; correction, openness and transparency, individual choice, collection, use and disclosure limitations, safeguards and accountability. As the MiHIN evolves, different principles will become more critical. The initial focus will be on openness and transparency, safeguards and accountability.

Additionally, Michigan will continue to build on its tradition of stakeholder input by continuing stakeholder involvement through the recommended creation of guidance bodies to address (1) privacy with a focus on policy, (2) security with a focus on technical standards and (3) sub-state HIE development.
4.5.3 Legal/Policy Strategy

Michigan will build on the foundation of accomplishments that began in 2006 with the MiHIN Conduit to Care project and the ONC’s nationwide HISPC (Health Information Privacy and Security Collaborative) project to enable health information exchange, while protecting consumer privacy and security.

Existing federal and state laws already provide strong legal protections for patient health information. Like many other states, Michigan’s legal protections expand upon those provided by federal law for protected classes of health information. The MiHIN Shared Services will ensure that a high level of security and accountability with appropriate protections for patient information are in place, while ensuring no unnecessary barriers to HIE exist.

The ongoing development of a privacy and security policy framework will help to balance the protection and integrity of patient information while allowing healthcare providers to obtain necessary health information in a timely manner without undue cost and administrative burdens—ultimately benefitting the patient.

The security policies will contain minimum standards for participation in the MiHIN Shared Services. The privacy policies will also incorporate the minimum standards as well as offering comprehensive guidance for Michigan’s newly developing sub-state HIEs. MiHIN Shared Services’ work will provide the sub-State HIEs with needed clarity, alignment and certainty— as they continue to evolve and develop.

4.5.4 The Legal Framework

Governance of Privacy and Security will require a dynamic and innovative approach. Privacy and Security of health information is of critical importance to fostering and maintaining consumer trust and confidence in health care providers.

- Shared vision and principles to guide planning
- Keep it reasonable and simple
- Plan short-term incremental implementation based on available resources
- Regularly review and evaluate progress

The Legal Framework’s foundation has been established through Michigan’s previous work on the MiHIN Conduit to Care Project and through the ongoing work of the Legal Workgroup and the HISPC project.

The workgroup is incorporating the HHS’ “Nationwide Privacy and Security Framework for Electronic Exchange of Individually Identifiable Health Information” as well as additional

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guidance from the ONC, GAO\(^5\), NGA’s State Alliance for eHealth\(^6\) and other recognized federal policy committees and workgroups, along with relevant federal and state laws that will be utilized as tools to assist in reviewing and analyzing State laws. The main focus of the Workgroup was to set foundational concepts in place, along with identifying risks and benefits so that ongoing Workgroup bodies have a clear understanding of the work already completed.

The framework will help the workgroup build consumer trust by laying very clear principles confirming the critical role of consumer privacy and security, and more specifically that information will only be shared for purposes permitted or required by law or otherwise authorized by the consumer.

General framework principles:

- Acknowledge that consumer privacy, security and confidentiality are paramount to health information exchange but that consumer empowerment and control will occur over time
- Balance legal and regulatory barriers with the sharing of electronic health information
- Facilitate statewide consensus of legal opinion
- Provide guidance and minimum standards for HIEs in Michigan
- Promote safe and secure intrastate and interstate exchange of electronic health information
- Establish a MiHIN Privacy Committee to focus on legal and policy related issues
- Establish a MiHIN Security Committee to focus on technical and security related issues

4.5.4.1 INTRASTATE

MiHIN Shared Services will work with existing HIEs and other organizations and associations within the state to ensure the legal framework is reasonable and broad enough to embrace all of Michigan’s Statewide HIE efforts. The workgroup will recommend Privacy and Security Officers from all of the existing sub-state HIEs actively participate in the ongoing work Privacy and Security work of the MiHIN.

Plans to address intrastate HIE include:

- Reviewing HIEs in other states
- Utilization of existing relationships within Michigan through other multi-state organizations and associations
- Update, review and analysis of Michigan’s Comparative Analysis Matrix
- Continued drafting and updating of Privacy and Security policies for Michigan’s sub-state HIEs that connect to the MiHIN Shared Services

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• Outreach and Education

The MIHIN conducted a survey among its stakeholders to identify issues that act as barriers to HIE. Armed with these preliminary findings, MiHIN can prioritize and begin to address the issues identified by the workgroup.

4.5.4.2 INTERSTATE

The MiHIN Shared Services will leverage agreements like the data use and reciprocal support agreement (DURSA) and the Inter Organizational Agreements (IOA) Trust Agreements (developed by the HISPC’s IOA Collaborative) to help negotiate disparate requirements in an interstate exchange environment.

Michigan, like many other states, is in the early stages of HIE development. Interstate exchange will require considerable preparation. State laws that protect the privacy of health information differ from state to state and often narrowly target a particular health condition that is referred to as a specially protected class of health information.

At first glance, state laws that provide patients with privacy and security protections and access rights that are greater than HIPAA would seem to be a positive benefit. However, the patchwork of medical privacy laws creates barriers to the exchange of health information. Barriers range from the inability to exchange patient information for treatment purposes in a timely manner to inconsistencies in public health reporting and disclosures.

4.5.5 State Laws

MiHIN will conduct an updated review, analysis and ranking of Michigan laws related to privacy and security using the Comparative Analysis Matrix. This will include incorporating any changes or new information regarding laws related to health information, including the recent HITECH Amendments to HIPAA, the Confidentiality of Alcohol and Drug Abuse Patient Records Regulation (42 CFR Part 2), and the Family Educational Rights & Privacy Act (addresses privacy of information held by certain educational institutions).

A comprehensive review of Michigan laws affecting the exchange of health information was undertaken in 2007 as part of Michigan’s work on the HISPC project. The review was updated again in 2009, but will need to be re-analyzed given the many changes in health information exchange within the State and nationally. This review was developed by the Harmonization of Privacy Laws Collaborative and is also known as “the CAM”.

The CAM (see Appendix 6.2) includes an inventory of nearly 150 subject matter areas typically addressed by state and federal law that involve or may impact use and disclosure of health information.

There are four principles of analysis identified through HISPC:

- Laws must be surveyed: A survey of state statutory and regulatory law involving or affecting the exchange of health information (whether paper or electronic) must be conducted.
- Laws must be organized logically: Identified laws must be organized into logical subject-matter areas for review and analysis.
- Laws must be analyzed in relation to HIE: Each law (or gap in the state’s law) must be reviewed and analyzed to determine whether a change in the law would facilitate HIE within the state.
- Feasibility of changing the law must be determined: For laws identified as requiring change, a consistent analytical process for determining the feasibility and priority of that change must be applied.\(^\text{10}\)

### 4.5.6 Policies and Procedures

The Michigan HIT Commission and the MiHIN Shared Services Governance Board will work in a collaborative manner to finalize the high level Privacy and Security policies that will serve as the minimum requirements for Michigan’s sub-state HIEs to connect through the MiHIN Shared Services. HIEs operating within the state will have to come to consensus on a minimum set of policies for how their participants will use the MiHIN Shared Services.

Enforcement of the policies regarding sub-state HIEs that are connected to the MiHIN Shared Services will be regulated by the MiHIN Shard Services Governance board. Under the MiHIN Shared Services Governance Board’s direction will be a Privacy Officer and a Security Officer and respective stakeholder workgroups. In addition, a body composed of sub-state HIE privacy officers and a body composed of sub-state HIE security officers would also serve the state well, to promote reasonable policy development that would also meet with all state and federal laws.

Obtaining legal opinion will also be a critical component, whether those legal opinions are issued from the State of Michigan government or from a health law attorney- it is clear that in some cases, legal opinion will be necessary to give the appropriate reassurances to participants regarding policy choices.

The following recommendations are based on stakeholder input and have been created as an initial direction for Michigan HIT Commission and the MiHIN Shared Service Governance Board to collaboratively continue to refine for implementation. The initial policy directions are as follows:

- Individual Participant Policy for Informed Opt Out. An “Informed Opt Out” form, as well as standard language will be incorporated into each MiHIN participants’ Notice of Privacy practices. The MiHIN Shared Services Governance Board must develop accompanying outreach materials for MiHIN participants. Generally the policy requirements are:

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\(^{10}\) Health Information Security and Privacy Collaborative Harmonizing state Law Collaborative Final Report. March 31, 2009
o Allow the individual’s health information to be shared through the MiHIN, unless and until the individual decides to “opt out”. (and explains what the consumer will be opting out of)

o Allow exceptions for the following:
  ▪ “Break the glass” in case of a medical emergency
  ▪ Public health reporting (only for legally permissible information)
  ▪ One-to-one or direct transfers (movement of data via the MiHIN Shared Services that do not utilize the RLS functionality - or in other words, where data is being pushed out, rather than pulled in.)

o Require additional information be added to the NPP of all participating providers.

o Policy guidance calls for educational materials to be created and made available to consumers in a variety of media in plain English.

- Access- this policy will govern how and when PHI will be accessed.
- Authentication- this policy will govern how users are verified to be who they say they are.
- Authorization- this policy will govern the process for determining if the user has the right and ability to access the information they are requesting.
- Audit- this policy will govern the requirements for oversight and keeping logs of who has accessed information and when they accessed it.
- Breach- this policy will govern how HIEs will respond to breaches of health information. The HITECH amendments to the HIPAA Privacy Rule offer very specific guidance on reporting and these will be incorporated into the MIHIN policy.

4.5.7 Interstate Communication

In order to facilitate communication with other states, the MiHIN Shared Services will continue to build on the relationships it has formed with other states during the HISPC project. Michigan was one of 42 states and territories that worked in concert for 3 years, co-chairing two of the seven HISPC multi-state collaborative Workgroups.

Additionally, the MiHIN Shared Services will to leverage its participation in other interstate activities, including the Great Lakes Border Health Initiative (GLBHI), which includes Ohio, Indiana, Pennsylvania, Minnesota, New York and Wisconsin. The GLBHI is focused on addressing public health concerns, the NGA’s work on the State Level Health Information Exchange and active participation in HIMSS.

Over several decades, states have passed laws to protect the privacy of health information. These laws differ from state to state and often narrowly target a particular population, health condition, data collection effort, or specific types of health care organizations. As a result, states have created a patchwork of privacy protections that are not comprehensive or easily understood.11

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Most state have enacted their own privacy laws that apply, in some cases unintentionally, to the electronic exchange of health care information. One of the impediments to interstate exchange is reconciling differing state laws and finding reasonable ways to facilitate exchange that both allows information to flow and meets the requirements of those differing laws.

The MiHIN Shared Services will address the following issues:

- Inconsistent laws addressing the disclosure or re-disclosure of information for treatment purposes.
- Inconsistent laws addressing the disclosure of “sensitive” patient information.
- Inconsistent laws addressing the disclosure of public health information (immunization records, communicable diseases, etc.) among states.
- Laws, designed for paper based HIE, which fail to address current modes of transmission and/or storage of electronic data. (Electronic Transmission/Electronic Signatures).
- Lack of uniform consent/authorization forms and policies

### 4.5.8 Trust Agreements

Data sharing agreements and data use agreements have been developed and the MiHIN Shared Services will utilize these agreements wherever reasonable. For health information exchange to take place among health care networks, all participants must adhere to a set of shared rules. In addition, the participants must define their relationships—community HIE to community HIE, state to state, and local and state to national—under state and federal law. Legal relationships are defined through data use, data sharing, or trust agreements or memoranda of understanding (MOU). These agreements or MOUs address the privacy and security responsibilities of the parties to the agreement.

Trust agreements or MOUs address the following (and other issues):

- The policies that establish who has access to health information
- What uses of information are acceptable
- The extent to which patients can give or withhold access to their information
- The design of privacy and security safeguards

The following intrastate and interstate agreements have been collected:

- National : DURSA
- HISPC - Review agreements developed by the Inter -Organizational Agreements Collaborative
- My One HIE (Southeastern Michigan based)

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Capitol Area RHIO (Lansing, Michigan)

4.5.9 Stakeholder Endorsement
Stakeholder endorsement and alignment of MiHIN Privacy and Security goals is essential to ensure success of the project as a whole. For the MiHIN Shared Services that means “beginning with the end in mind,” and creating a vision of the project at its completion.

- Stakeholders value and understand the difference they are able to make through engagement.
- Stakeholder views feed into and influence strategic planning.
- Engagement is characterized by an open and honest dialogue

It will be the purview of the Michigan HIT Commission and the Michigan Department of Community Health (MDCH) to ensure stakeholder endorsement of the MiHIN Shared Services privacy and security policies and procedures. MDCH and the Michigan HIT Commission will undertake this activity with the MiHIN Shared Services Governance Board as the policies and procedures are further developed.

4.5.10 Oversight and Enforcement
Long-term policies will be developed and implemented to govern the oversight of statewide HIE and enforcement as the technology progresses. The Michigan HIT Coordinator is responsible for working with the MiHIN Shared Services Governance Board and the Michigan HIT Commission to develop a plan for complying with all applicable state and federal laws. This will be an evolving process as the applicable laws evolve and the privacy and security policies of the MiHIN Shared Services become finalized and formalized. The Michigan HIT Coordinator will explore multiple mechanisms for enforcing the applicable laws and will present this plan to the MiHIN Shared Services Governance Board and the Michigan HIT Commission for review, deliberation and approval.

Initially, oversight and enforcement for Michigan’s sub-state HIEs will be provided with assistance from a number of state and federal sources- primarily being federal regulations and laws and State HIE Cooperative Agreement guidance. The MiHIN Shared Services Privacy and Security Officers will oversee the day to day operations of privacy and security issues related to the MiHIN shared services, as well as offering privacy and security oversight to Michigan’s sub-state HIEs that are connected to the MiHIN Shared Services through the sub-state HIE Privacy and Security Officers. Primarily, the MiHIN will begin by focusing on federal laws, such as:

- HITECH, Health Information Technology for Economic and Clinical Health
- HIPAA, Health Insurance Portability and Accountability Act
- 42 CFR Part 2 Substance Abuse (Confidentiality of Alcohol and Drug Abuse Patient Records)
- FERPA, Family Education Rights and Privacy Act
“Red Flag Rules” Part of the Fair and Accurate Credit Transactions (FACT) Act of 2003\textsuperscript{14}
Stark\textsuperscript{15}
Health Care Reform (Patient Protection and Affordable Care Act- H.R. 3590)

And State laws, such as:

- Michigan Social Security Number Privacy Act
- Michigan Identity Theft Protection Act
- Michigan Stark Rules

The MiHIN will assist sub-state HIEs in interpreting and complying with applicable federal and state laws by providing consistent outreach and guidance based on the priorities and challenges identified by the work group through the CAM and the Challenges Survey in the Operational Plan. In addition, policies, trust agreements and participant contracts will be developed and implemented to govern the enforcement of statewide HIE and sub-state HIEs.

\textsuperscript{14} The Federal Trade Commission (FTC), the federal bank regulatory agencies, and the National Credit Union Administration (NCUA) have issued regulations (the Red Flags Rules) requiring financial institutions and creditors to develop and implement written identity theft prevention programs, as part of the Fair and Accurate Credit Transactions (FACT) Act of 2003.

\textsuperscript{15} Three separate provisions, governs physician self-referral for Medicare and Medicaid patients. The law is named for United States Congressman Pete Stark, who sponsored the initial bill.
5 Summary / Conclusion
The MiHIN Strategic Plan is the result of a stakeholder workgroup driven process. The strategies contained in this plan have been based on the direction set by the 2006 MiHIN Conduit to Care and have been updated to align with the current HIE landscape in Michigan, the evolution of technologies and the State HIE Cooperative Agreement guidance.

Based on the investments and progress of health information exchange across Michigan, a strategy of establishing statewide shared services for the secure exchange of health information and NHIN connectivity has been developed. The MiHIN Shared Services will be designed as a network of networks with local providers connecting to sub-state HIEs which connect to the MiHIN Shared Services and then to the National Health Information Network.

This strategy will be realized by establishing the MiHIN Shared Services Governance Board that will hold the responsibility for finalizing the business plan for financial sustainability and implementing all the components of the MiHIN Operational Plan.
6 Appendix

6.1 MiHIN Workgroups

It is well recognized that stakeholder participation in the planning and implementation of HIE maximizes success. The State of Michigan can attest to this as the State successfully used this approach to develop the *Conduit to Care*, the initial version of the Strategic Plan, in 2006. At that time, over 200 stakeholders worked together to develop consensus on the initial direction for HIE planning in Michigan.

When the State of Michigan sought funding from the ONC to support further state-wide health information exchange in the fall of 2009, it was a priority for the State of Michigan to engage a broad mix of stakeholders for their feedback, input and buy-in. The State leveraged the success of the *Conduit to Care* in developing the MiHIN Strategic Plan and many of the same individuals have been in involved in both initiatives and a similar workgroup process.

To encourage adoption for statewide services, the State opted to conduct the Strategic Planning using the five ONC-based domains as the focus of Workgroups comprising stakeholders from across the state. This phase of the MiHIN initiative was launched on November 10, 2009, with the MiHIN Workgroup Kick-off meeting. Janet Olszewski, Director of the Michigan Department of Community Health and Ken Theis, the CIO of the State of Michigan hosted the event. Over 200 stakeholders representing all stakeholder organizations as well as the nine regions of the state were in attendance.

Workgroups based on the ONC domains were formed to make recommendations for the Strategic and Operational plans. The key roles of each Workgroup are listed below.

- **Governance** – Key role is to develop the Governance Model to be used to implement the MiHIN and approve all of the deliverables produced by the other workgroups to assure all stakeholders’ perspectives are appropriately represented.
- **Business Operations** – Key role is to recommend HIE business/clinical priorities, use cases to be included in the initial pilots and expected value.
- **Technical** – Key role is to recommend technical design, standards, architecture and approaches to HIE solutions.
- **Finance** – Key role is to recommend budgets and a financial sustainability model.
- **Privacy and Security** – Key role is to recommend HIE privacy and security protections of health information and on-going process for legal guidance.

The diagram below shows work structure, stakeholder input and interaction with and reporting to the State of Michigan. It also portrays how the Governance Workgroup was responsible for approving all the deliverables from the other Workgroups.
In addition to broad stakeholder representation and participation in the statewide HIE planning the State of Michigan placed a high priority on conducting the work in a manner that is as transparent as possible. Workgroup meetings are conducted at least twice a month. Although only voting Workgroup members vote, all interested stakeholders are invited to meetings and encouraged to participate. All meetings are open to the public, meeting minutes were posted publicly and during the meetings time was set aside for public comment. The State has also established an online work space where all documents and information are readily available for review.

6.1.1.1 MEMBERS SELECTION PROCESS

At the MiHIN Kick-off meeting on November 10, 2010, all stakeholders were invited to attend the first meeting of the Workgroups. In addition to reviewing objectives and work plans for the MiHIN initiative, the Workgroup selection process was introduced. The selection process was designed to meet specific objectives:

- To create workgroups that have broad stakeholder representation covering all entities and regions and including skill sets essential to the work of the individual workgroups
- To enable broadest stakeholder opportunity to serve as WG members
- To provide the most ‘democratic’ process for selecting voting workgroup members, considering the project’s aggressive timeframe
- To provide broad stakeholder representation in the decision making for the MiHIN project as well as to align with ONC guidelines.
Roles and minimum requirements for each Workgroup were developed by the State of Michigan in advance of the Kick off session to include different types of stakeholders (providers, payers, public representatives), necessary skill sets (technical, finance, etc.) and geographic diversity (9 regions with mix of urban, rural representation). Co Chairs/Chairs for the Workgroups were appointed by the State in advance of the session. During the session, the 3 step selection process was announced and initiated:

1. All stakeholders throughout the state were invited to volunteer or nominate someone to serve in one of the roles required for each workgroup at the Kick off session, or within 1 week of the session.

2. Program staff collected the nominations, verified the nominees for each category and assembled the voting survey. Co-chairs were asked to review and nominate individuals to fill gaps in nominations for a geographic, organization type or skill set imbalance, to ensure a balanced, comprehensive representation of voting members.

3. Using Survey Monkey, the ballot was distributed widely and over 150 stakeholders cast a vote. The results were announced and posted on the MiHIN Website on November 24, 2009.
### 6.1.1.2 GOVERNANCE WORKGROUP MEMBERS

The Governance Workgroup was led by 2 co-chairs, 1 public, 1 private, who were appointed by the State of Michigan. The voting members and co-chairpersons are listed below along with the role and organization that they represent.

<table>
<thead>
<tr>
<th>Name</th>
<th>Voting Member Role</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Janet D. Olszewski</td>
<td>Co-Chairperson</td>
<td>Director, Michigan Department of Community Health</td>
</tr>
<tr>
<td>Larry Wagenknecht</td>
<td>Co-Chairperson</td>
<td>CEO, Michigan Pharmacists Association</td>
</tr>
<tr>
<td>John Barnas</td>
<td>Rural healthcare provider/clinic/hospital</td>
<td>Executive Director, MI Center for Rural Health</td>
</tr>
<tr>
<td>Bob Brown</td>
<td>Co-Chair of Business Operations Workgroup</td>
<td>Michigan State University / Kalamazoo Center for Medical Studies</td>
</tr>
<tr>
<td>Jocelyn Dewitt</td>
<td>Health System Executives</td>
<td>CIO, University of Michigan Health System</td>
</tr>
<tr>
<td>Helen Hill</td>
<td>Existing HIE Initiatives</td>
<td>Director IT Consulting &amp; HIE, Henry Ford Health System and Southeast Michigan Health Information Exchange</td>
</tr>
<tr>
<td>Denise Holmes</td>
<td>Michigan Employer</td>
<td>Associate Dean Government Relations and Outreach, Michigan State University</td>
</tr>
<tr>
<td>Paula Johnson</td>
<td>Existing HIE Initiatives</td>
<td>Director, Upper Peninsula Health Care Network</td>
</tr>
<tr>
<td>Jim Lee</td>
<td>Provider Trade Associations</td>
<td>VP, Data Policy &amp; Development, Michigan Health &amp; Hospital Association</td>
</tr>
<tr>
<td>Margaret Marchak</td>
<td>Chair of Privacy and Security Workgroup</td>
<td>Attorney, Hall, Render, Killian, Heath &amp; Lyman, PLLC</td>
</tr>
<tr>
<td>Sue Moran</td>
<td>Co-Chair of Business Operations Workgroup</td>
<td>Director, Bureau of Medicaid Program Operations and Quality Assurance, Michigan Department of Community Health</td>
</tr>
<tr>
<td>Richard Murdock</td>
<td>Insurer/Health Plan</td>
<td>Executive Director, Michigan Association of Health Plans</td>
</tr>
<tr>
<td>Patrick O'Hare</td>
<td>Health System Executives</td>
<td>SVP / CIO, Spectrum Health</td>
</tr>
<tr>
<td>Kim Sibilsky</td>
<td>Provider Trade Associations</td>
<td>Executive Director, Michigan Primary Care Association</td>
</tr>
<tr>
<td>Name</td>
<td>Voting Member Role</td>
<td>Organization</td>
</tr>
<tr>
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<td>---------------------------------------------------</td>
</tr>
<tr>
<td>Dennis Smith</td>
<td>Chair of Finance Workgroup</td>
<td>CEO, Upper Peninsula Health Care Network</td>
</tr>
<tr>
<td>Ken Theis</td>
<td>Co-Chair of Technical Workgroup</td>
<td>CIO, State of Michigan</td>
</tr>
<tr>
<td>Rick Warren</td>
<td>Co-Chair of Technical Workgroup</td>
<td>CIO, Allegiance Health / JCMR</td>
</tr>
</tbody>
</table>

The workgroup was facilitated by John Evans and Sue Frechette of s2a Consulting.
6.1.1.3 Finance Workgroup Members

The Finance Workgroup was led by a public chairperson appointed by the State of Michigan. The voting members and co-chairpersons are listed below along with the role they represent and the organization they are from.

<table>
<thead>
<tr>
<th>Name</th>
<th>Voting Member Role</th>
<th>Organization</th>
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<tbody>
<tr>
<td>Dennis Smith</td>
<td>Chairperson</td>
<td>Upper Peninsula Health Care Network</td>
</tr>
<tr>
<td>Timothy M. Jodway</td>
<td>Community hospital CFO</td>
<td>Northern Michigan Regional Health System</td>
</tr>
<tr>
<td>Donald Kooy</td>
<td>Health system CEO</td>
<td>McLaren Regional Medical Center</td>
</tr>
<tr>
<td>Stephan Ranzini</td>
<td>Banker/financier</td>
<td>University Bank</td>
</tr>
<tr>
<td>Valerie Glesnes-Anderson</td>
<td>Sub-state HIE</td>
<td>Capital Area Regional Health Information Organization</td>
</tr>
<tr>
<td>Janice Torosian</td>
<td>Payer/Insurer/Health Plan CFO</td>
<td>Health Plan of Michigan</td>
</tr>
</tbody>
</table>

The workgroup was facilitated by John Evans from s2a Consulting with assistance from David Allen from Dewpoint and Mike Mote also from s2a Consulting.
### 6.1.1.4 Business Operations Workgroup Members

The Business Operations Workgroup was led by 2 co-chairs, 1 public, 1 private, who were appointed by the State of Michigan. The voting members and co-chairpersons are listed below along with the role they represent and the organization they are from.

<table>
<thead>
<tr>
<th>Name</th>
<th>Voting Member Role</th>
<th>Position and Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sue Moran</td>
<td>Co-Chair</td>
<td>Michigan Department of Community Health, Bureau of Medicaid Program Operations and Quality Assurance</td>
</tr>
<tr>
<td>Bob Brown</td>
<td>Co-Chair</td>
<td>Kalamazoo Center for Medical Studies</td>
</tr>
<tr>
<td>Gary S. Assarian, DO</td>
<td>Laboratory representative</td>
<td>JVHL/Henry Ford Medical Laboratories</td>
</tr>
<tr>
<td>Leeland Babitch, MD, MBA</td>
<td>Chief Medical Information Officer</td>
<td>Detroit Medical Center</td>
</tr>
<tr>
<td>Christopher Beal, DO</td>
<td>Primary Care Physician</td>
<td>St. Johns, MI</td>
</tr>
<tr>
<td>Rebecca Blake</td>
<td>Provider Trade Association</td>
<td>Michigan State Medical Society</td>
</tr>
<tr>
<td>Michael Bouthillier</td>
<td>Pharmacy representative</td>
<td>Ferris State University</td>
</tr>
<tr>
<td>Bryan Dort</td>
<td>Hospital/Health System Representative</td>
<td>Alpena Regional Medical Center</td>
</tr>
<tr>
<td>Paul Edwards</td>
<td>Workforce development initiatives</td>
<td>Greater Flint Health Coalition</td>
</tr>
<tr>
<td>Mary Anne Ford</td>
<td>Existing HIE Initiative</td>
<td>Capital Area RHIO</td>
</tr>
<tr>
<td>Bernard Han</td>
<td>University health researcher</td>
<td>Center of WMU Health Information Technology Research and Services</td>
</tr>
<tr>
<td>Scott Monteith, MD</td>
<td>Specialty physician representative with EHR experience</td>
<td>Northern Lakes CMH/GTBM, PC</td>
</tr>
<tr>
<td>Betsy Pash</td>
<td>Public health representative</td>
<td>Michigan Department of Community Health</td>
</tr>
<tr>
<td>Timothy A. Pletcher</td>
<td>RHITEC representative</td>
<td>Central Michigan University Research Corporation</td>
</tr>
<tr>
<td>Sherri Stirn, BS, CPC</td>
<td>Rural Health Centers</td>
<td>Mecosta Heath Services</td>
</tr>
<tr>
<td>Deana M. Simpson, RN</td>
<td>Nursing</td>
<td>Detroit Medical Center</td>
</tr>
<tr>
<td>Name</td>
<td>Voting Member Role</td>
<td>Position and Organization</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Linda Young</td>
<td>Home health representative</td>
<td>Borgess Visiting Nurse and Hospice Services</td>
</tr>
<tr>
<td>Peter Ziemkowski, MD</td>
<td>Primary Care Physician</td>
<td>Kalamazoo, MI</td>
</tr>
</tbody>
</table>

The workgroup was facilitated by Shaun Grannis, MD from s2a Consulting and Rick Brady from Dewpoint.
6.1.1.5 Technical Workgroup Members

The Technical Workgroup was led by 2 co-chairs, 1 public, 1 private, who were appointed by the State of Michigan. The voting members and co-chairpersons are listed below along with the role they represent and the organization they are from.

<table>
<thead>
<tr>
<th>Name</th>
<th>Voting Member Role</th>
<th>Position and Organization</th>
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</thead>
<tbody>
<tr>
<td>Ken Theis</td>
<td>Co-Chairperson</td>
<td>Michigan Department of Information Technology</td>
</tr>
<tr>
<td>Rick Warren</td>
<td>Co-Chairperson</td>
<td>Allegiance Health</td>
</tr>
<tr>
<td>Marcus Cheatham</td>
<td>Local public health</td>
<td>Ingham Co. Health Department</td>
</tr>
<tr>
<td>Doug Dietzman</td>
<td>Laboratory systems</td>
<td>Spectrum Health</td>
</tr>
<tr>
<td>Doug Fenbert</td>
<td>Hospitals &amp; Health Systems</td>
<td>Trinity Health</td>
</tr>
<tr>
<td>Thomas Lauzon</td>
<td>Health plan/Insurer/Payer</td>
<td>Health Plan of Michigan</td>
</tr>
<tr>
<td>Paul G. Miller</td>
<td>Pharmacy systems</td>
<td>M.Sc., Pharm.D., R.Ph</td>
</tr>
<tr>
<td>Bill Riley</td>
<td>Behavioral/ mental health</td>
<td>Oakland County Community Mental Health</td>
</tr>
<tr>
<td>Dan Stross</td>
<td>Hospitals &amp; Health Systems</td>
<td>Genesys Health System</td>
</tr>
<tr>
<td>Bruce Wiegand</td>
<td>FQHC</td>
<td>Michigan Primary Care Association</td>
</tr>
<tr>
<td>Mark Tuthill</td>
<td>Multispecialty group practice</td>
<td>MD - Henry Ford Health System</td>
</tr>
<tr>
<td>Ernie Yoder</td>
<td>Health research</td>
<td>MD, PhD, St. John Health System</td>
</tr>
</tbody>
</table>

The workgroup was facilitated by Mike Gagnon from s2a Consulting.
6.1.1.6 **LEGAL/POLICY WORKGROUP MEMBERS**

The Privacy and Security Workgroup was led by 1 chair who was appointed by the State of Michigan. The voting members and chair are listed below along with the role they represent and the organization they are from.

<table>
<thead>
<tr>
<th>Name</th>
<th>Voting Member Role</th>
<th>Position and Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Margaret Marchak</td>
<td>Chair</td>
<td>Hall, Render, Killian, Heath &amp; Lyman, P.C.</td>
</tr>
<tr>
<td>Moira Davenport-Ash</td>
<td>Security/Compliance Representative</td>
<td>CEI Community Mental Health Authority</td>
</tr>
<tr>
<td>Jeff Bontsas</td>
<td>Hospital Setting Representative</td>
<td>St John Health System</td>
</tr>
<tr>
<td>Denise Chrysler</td>
<td>MDCH Representative with Privacy experience</td>
<td>Michigan Department of Community Health</td>
</tr>
<tr>
<td>Darrell Dontje</td>
<td>MDCH Enterprise Security representative</td>
<td>Michigan Department of Information Technology</td>
</tr>
<tr>
<td>Chuck Dougherty</td>
<td>CIO representative</td>
<td>CEI Community Mental Health</td>
</tr>
<tr>
<td>George Goble</td>
<td>CIO representative</td>
<td>Trinity Health</td>
</tr>
<tr>
<td>John Hazewinkel</td>
<td>Attorney with HIE experience and HIE Privacy and Security Compliance Representative</td>
<td>Michigan State University</td>
</tr>
<tr>
<td>Glen Lutz</td>
<td>Compliance representative</td>
<td>Ascension Health</td>
</tr>
<tr>
<td>Melissa Markey</td>
<td>Attorney Representative</td>
<td>Hall, Render, Killian, Heath &amp; Lyman, P.C.</td>
</tr>
<tr>
<td>Mike Tarn</td>
<td>Consumer representative</td>
<td>Western Michigan University</td>
</tr>
<tr>
<td>Nancy Walker</td>
<td>Compliance representative</td>
<td>Michigan Health Information Management Association</td>
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<tr>
<td>Shelli Weisberg</td>
<td>Consumer representative</td>
<td>ACLU of Michigan</td>
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The workgroup was facilitated by Kelly Coyle and Linda McCardel from the Michigan Public Health Institute (MPHI).
### 6.2 The Comparative Analysis Matrix

<table>
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<tr>
<th>Subject Matter</th>
<th>More Stringent than HIPAA for Patient Care?</th>
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<td><strong>Privacy Specific Provisions</strong></td>
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<td>Comprehensive general privacy act</td>
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<td>Restrictions on use of Social Security number</td>
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<td>HIPAA (45 CFR 164.302 et seq.)</td>
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<td><strong>Identity Theft Protection Act</strong> <em>(MCL 445.72; Notice of Security Breach; Requirements)</em></td>
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<td><strong>HIPAA (45 CFR 164.302 et seq.)</strong> HITECH</td>
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<td><strong>Identity Theft Protection Act</strong> <em>(MCL 445.72; Notice of Security Breach; Requirements)</em></td>
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<td>Telehealth/ telemedicine provisions</td>
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<td>Uniform Electronic Transactions Act</td>
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<td>Records retention requirements</td>
<td><strong>Public Health Code</strong> (MCL 333.16213: Retention of Records; MCL 333.20175: Patient records) <strong>Release of Information for Medical Research and Education</strong> (MCL 331.531: Disclosures to peer review entities) <strong>Michigan Court Rules</strong> (MCR 2.314: Release of medical information by subpoena)</td>
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<td>Patient access</td>
<td><strong>Release of Information for Medical Research and Education</strong> (MCL 331.531: Disclosures to peer review entities) <strong>Revised Judicature Act of 1961</strong> (MCL 600.2157: Waiver of physician-patient privilege)</td>
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<td>Ownership of medical records</td>
<td><strong>Public Health Code</strong> (MCL 333.16213: Retention of Records; MCL 333.20175: Patient records; MCL 333.20175a: Agreement with another health facility to protect, maintain and provide access to records, etc.)</td>
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<td>Accounting for disclosures</td>
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<td>Disposition/ destruction of records</td>
<td>Public Health Code (MCL 333.20175: Patient records; MCL 333.20175a: Agreement with another health facility to protect, maintain and provide access to records, etc.)</td>
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**Consent/Authorizations**

| Patient authorization requirements | | | HIPAA (42 CFR 431.306 d) |

**Minors**

<p>| Age of majority | Status of Minors and Child Support (MCL 722.4: Emancipation of minor) | Age of Majority Act of 1971 (MCL 722.52: Adult of legal age, etc.) | |
| Emancipated minors | Status of Minors and Child Support (MCL 722.4e: Rights and responsibilities of emancipated minor; obligation and liability of parents) | | |</p>
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<tr>
<td>Age consent requirements - mental health</td>
<td>Mental Health Code (MCL 330.1498i: Notice to parent of hospital admission of minor; MCL 330.1716: Surgery consent; MCL 330.1707: Rights of minor; MCL 330.1724: Fingerprints, photographs, etc.)</td>
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<td>Age Consent requirements - other conditions</td>
<td>Public Health Code (MCL 333.17015: Informed consent for abortion)</td>
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<td>Patient Proxies</td>
<td>Marital License (MCL 551.103: Persons capable of contracting marriage; age requirement; etc.)</td>
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<td>Personal Representatives/ Executors</td>
<td>Medical Records Access Act (MCL 333.26263: Definitions)</td>
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<td>Guardians</td>
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<td>Health Care Power of Attorney</td>
<td>Estates and Protected Individuals Code (MCL 700.5501: Durable Power of Attorney; definition)</td>
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<td>Health Care Power of Attorney - mental health</td>
<td>Mental Health Code (MCL 330.1716; Surgery; consent; MCL 330.1433: Assisted outpatient treatment, etc.)</td>
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<td>Genetic information</td>
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<td>HIV/ AIDS information</td>
<td><strong>Public Health Code</strong> (MCL 333.5114: Reporting HIV test results; MCL 333.5114a: Partner notification of HIV test results; MCL 333.5119: HIV test for marriage licenses; MCL 333.5123: VD, HIV or Hepatitis B tests for pregnant women; MCL 333.5127: Consent by minor for VD or HIV testing; MCL 333.5129: Communicable disease test results of prostitutes and intravenous drug users; MCL 333.5131: Confidentiality of HIV or AIDS test results; MCL 333.5133: Consent forms for HIV and AIDS testing; MCL 333.16267: Obligation to report positive HIV test results; MCL 791.267: Testing of prisoners for HIV)</td>
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<td>Sexually transmitted disease information</td>
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<td>Hepatitis C information</td>
<td><strong>Public health Code</strong> (MCL 333.5123: VD, HIV or Hepatitis B tests for pregnant women)</td>
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<td>Adult mental health</td>
<td><strong>Public Health Code</strong> (MCL 333.6521: Records confidential; disclosure; MCL 333.6111: Records confidential; limitations on disclosure)</td>
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<td>Children's mental health</td>
<td><strong>Foster Care and Adoption Services Act</strong> (MCL 722.954c: Release of child's medical records, etc.)</td>
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<td>Communicable disease information</td>
<td><strong>Rule 325.173</strong>: Reporting of Diseases and Infections <strong>Rule 325.181</strong>: Confidentiality of Reports</td>
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<td><strong>42 CFR Part 70</strong></td>
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<td>Alcohol addiction</td>
<td><strong>Rule 325.14304</strong>: Substance Abuse Treatment Program Patient's Right to Review Records <strong>Rule 325.14910</strong>: Content and Maintenance of Patient Records for Substance Abuse Treatment Programs</td>
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<td><strong>42 CFR Part 2</strong></td>
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| Drug addiction                                                                 | Rule 325.14304: Substance Abuse Treatment Program Patient's Right to Review Records  
Rule 325.14910: Content and Maintenance of Patient Records for Substance Abuse Treatment Programs |                                              | 42 CFR Part 2                                                 |                                        |
<p>| Minor wards of the state                                                       | Probate Code of 1939 (MCL 710.44: Consent to adoption; separate instrument, etc.) |                                              |                                                               |                                        |
| Adult wards of the state                                                       |                                            |                                              |                                                               |                                        |
| Reporting of abortions                                                          | Public Health Code (MCL 333.2835: Abortion Reporting; MCL 333.2837: Abortion-related deaths or complications; MCL 333.17015: Informed consent) |                                              |                                                               |                                        |
| Victims (domestic violence, sex assault, etc.)                                 |                                            |                                              |                                                               |                                        |
| Futile Care Provisions                                                         |                                            |                                              |                                                               |                                        |
| Other proxies                                                                  |                                            |                                              |                                                               |                                        |
| <strong>Provider Specific Provisions</strong>                                               |                                            |                                              |                                                               |                                        |
| Pharmacy records                                                               | Public Health Code (MCL 333.17752: Prescription or equivalent record; preservation; disclosure; etc.) |                                              |                                                               |                                        |
| Emergency services (ambulance/ EMT)                                            |                                            |                                              |                                                               |                                        |
| Health profession licensing                                                     | Public Health Code (MCL 333.16608: Health profession specialty field license, etc.; MCL 333.16196: License or registration of individual inducted or entering into service; continuation; notice; MCL 333.16221: Investigation of licensee, etc.) |                                              |                                                               |                                        |</p>
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<td>Professional counselors</td>
<td>Public Health Code (MCL 333.16148: Board; rules establishing standards for education and training; accreditation of training programs; etc.; MCL 333.20155: Facility accreditation and audits)</td>
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<td>Utilization, peer &amp; quality review</td>
<td>Public Health Code (MCL 330.1143a: Confidentiality of peer review information for psychiatric facilities; MCL 333.21515: Confidentiality of hospital peer review records)</td>
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<td>Hospitals</td>
<td>Rule 325.1028: Hospital Medical Record Requirements</td>
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<td>HIPAA (CFR 42 482.24)</td>
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<td>School-based clinics</td>
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<td>Imaging labs and centers</td>
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<td>Testing and clinical labs</td>
<td>Rules 325.1743 and 325.1475: Laboratory Reports</td>
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<td>HIPAA (42 CFR 493)</td>
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<td><strong>Assisted living facilities</strong>&lt;br&gt;Public Health Code (MCL 333.21743: Confidentiality of clinical records by MDCIS, MDCH and nursing homes; MCL 333.21763: Confidentiality of communications by nursing home residents)&lt;br&gt;Mental Health Code (MCL 330.1433: Assisted outpatient treatment, etc.; MCL 330.1469b: Treatment program as alternative to hospitalization; court order)&lt;br&gt;Adult Foster Care Facility Licensing Act (MCL 400.712: Keeping and maintaining records and reports, etc.)&lt;br&gt;Rule 325.20112: Nursing Homes' Policies for Access to Records&lt;br&gt;Rule 400.14316 and Rule 400.15316: Maintenance of Resident Records by Adult Foster Care Group Homes&lt;br&gt;Rule 325.1851: Records of Homes for the Aged&lt;br&gt;Rule 325.1853: Content of Homes for the Aged Records&lt;br&gt;Rule 325.20404: Life-Threatening Accidents or Injuries in Nursing Home</td>
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<td><strong>Drug &amp; alcohol treatment facilities</strong>&lt;br&gt;Rule 325.14304: Substance Abuse Treatment Program Patient's Right to Review Records&lt;br&gt;Rule 325.14910: Content and Maintenance of Patient Records for Substance Abuse Treatment Programs</td>
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<td>State Department of Health reporting (reporting certain conditions to state)</td>
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<td>Immunization reporting</td>
<td>Public Health Code (MCL 333.9206: Certificate of immunization required, etc.)</td>
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<td>Information sharing in public emergencies</td>
<td>Public Health Code (MCL 333.20191: Infectious agent and emergency treatment)</td>
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<td><strong>State Facilities/Medical Records</strong></td>
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<td>Correctional facilities (adult)</td>
<td>Corrections Code of 1953 (MCL 791.234: Prisoners subject to jurisdiction of parole board, etc.; MCL 791.267: Testing of prisoners for HIV)</td>
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<td><strong>Statutory right to sue for damages related to health information</strong></td>
<td><strong>Public Health Code (MCL 333.21773: Involuntary transfer or discharge of patient; notice; etc.; MCL 333.20201: Policy describing rights and responsibilities of patients or residents; etc.)</strong></td>
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<td><strong>Common law right to sue for damages related to health information</strong></td>
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<td><strong>Criminal provisions - wrongful access</strong></td>
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<td><strong>Litigation Related Provisions</strong></td>
<td><strong>Public Health Code (MCL 333.20175: Maintaining record for each patient; confidentiality; wrongfully altering or destroying records, etc.; MCL 333.7333a: Electronic monitoring system; MCL 333.16221: Investigation of licensee, registrant, or applicant for licensure or registration, etc.) Mental Health Code (MCL 330.1748: Confidentiality of Mental Health Records) MCR 2.314: Release of medical information by subpoena MCR 2.506: Compliance with Subpoena by Hospitals</strong></td>
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<td><strong>Workers Disability Compensation Act (MCL 418.230: Confidential records; power of court to subpoena records not limited)</strong></td>
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<td><strong>Law Enforcement</strong></td>
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<td><strong>Michigan Vehicle Code (MCL 257.625a: Arrest without warrant; availability of test results, etc.)</strong></td>
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| **Abuse & neglect** | Mental Health Code (MCL 330.1723: Obligation of mental health professional to report abuse or neglect; MCL 330.1748a: Use of mental health records as evidence of abuse or neglect)  
Foster Care and Adoption Services Act (MCL 722.954c: Release of child’s medical records, etc.)  
Child Protection Law (MCL 722.623: Individual required to report child abuse or neglect, etc.) | | | |
| **Other disclosures to law enforcement** | Uniform Crime Reporting System Act (MCL 28.258: Information for LEIN) | | HIPAA (45 CFR 164.510, 164.512, 164.530) ; Patriot Act | |
| **Research** | Public Health Code (MCL 333.2631: Reporting or sharing research information with MDCH; MCL 333.5703: Toxicological studies of Vietnam veterans) | | HIPAA (45 CFR 164.512, 164.514) | |
| **Statutory Definitions** | Child Protection Law (MCL 722.627: Central registry; availability of confidential records, etc.)  
Michigan Penal Code (MCL 750.492a: Placing misleading or inaccurate information in medical records or charts; etc.)  
Michigan Vehicle Code (MCL 257.207a: Electronic driver license status check, etc.) | | | |
<p>| <strong>Electronic Medical Record</strong> | | | | |
| <strong>Electronic Health Record</strong> | | | | |</p>
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6.3 Alternative Technology Approaches Considered

The MiHIN is being designed with sub-state HIEs which provide “last mile” connectivity to providers and State of Michigan systems that are connected to the shared services bus for cross community interoperability and NHIN connectivity. This design is not the least expensive nor is it the most technologically advanced but we believe it represents the best, most viable short term architecture with the most sustainable long term benefits.

We reviewed the following architectural models and recommendations were reviewed and not pursued for the reasons noted below:

Single HIE

1. This model has one HIE for the entire state and all provider organizations plug into this HIE
2. Used successfully in small states (Vermont, Delaware, etc)
3. Not recommended for Michigan due to the number and scope of providers and because there are already HIEs in progress

Single HIE Vendor for all State HIEs

1. Single HIE vendor that provides HIEs for regions and then provides a custom gateway between HIEs
2. Not the primary model in any state and only one vendor is doing this
3. Could be less costly but not recommended due to the proprietary nature of the gateway and long term interoperability

HIEs playing the role of both HIE and Shared Services Bus

1. Each HIE builds the infrastructure for connecting organizations as well as the cross-HIE capabilities as a shared services bus
2. This is the model being developed in New York and possibly California
3. Creates a highly interoperable and flexible network
4. Not recommended due to cost and complexity

Shared Services Bus with Stakeholder Organizations plugged in directly

1. This is a Shared Services Bus with only standards compliant EHRs and other clinical systems allowed to connect
2. This is the Minnesota model
3. Depends on vendor EHR systems becoming fully standards compliant or organizations standing up the middleware (akin to our Private HIE)
4. Can be cost effective but vendors have made very slow progress towards being standards compliant
5. We are recommending this as part of our approach

Shared Services Bus with multiple HIEs

1. The HIE connects organizations and the Shared Services Bus connects HIEs
2. The closest model is in Virginia but many states considering
3. Creates a highly interoperable network but requires a middle layer to be developed for shared services bus connectivity
4. Keeps standards at the core and pushes non-standards to the edges
5. **This is the recommended** approach because it promotes both standards-based interoperability and timely implementation.
Appendix G: State of Michigan MiHIN Shared Services Operational Plan
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1 Stakeholder Approvals

The MiHIN Shared Services Operational Plan was endorsed by the MiHIN Governance Workgroup by unanimous vote on April 22, 2010. Membership of the MiHIN Governance Workgroup is listed in Appendix 1 of the MiHIN Shared Services Strategic Plan. The MiHIN Shared Services Operational Plan was endorsed by the Michigan Health Information Technology Commission by unanimous vote on April 22, 2010. Membership of the Michigan Health Information Technology Commission can be found in the Governance domain section in the MiHIN Shared Services Strategic Plan.

2 Executive Summary

The Michigan Health Information Network (MiHIN) vision of fostering the development of health information exchange (HIE) that will reduce the overall cost of care while at the same time increasing quality of care and patient safety, will be realized by implementing this Operational Plan based on the strategies developed by stakeholders across Michigan.

This Operational Plan is grounded in the experiences and progress of HIE in Michigan’s healthcare communities, and it will serve as the roadmap for the leadership of the MiHIN Shared Services by outlining the activities, timelines and financial aspects of implementing the MiHIN Strategic Plan for statewide health information exchange over the next four years.

Achieving the goals of this Plan will enable and support the ability of Michigan’s providers to accomplish and demonstrate meaningful use of health information technology by leveraging advancements in the cross-community exchange of patient information enabled by the MiHIN Shared Services.

The deployment the MiHIN Operational Plan will improve the ability of sub-state HIE efforts to access appropriate and timely health information both within and across state borders by serving as the vehicle for interoperability with other states and the national health information network.

The following sections provide a summary of the subsequent sections of this operational plan and are intended to document Michigan’s overall approach toward each of the domain areas. Most substantive discussions are provided in the sections dedicated to that domain area. The figure below shows a high level depiction of the projected timeline and key milestones for this project.
2.1 Governance

The State of Michigan facilitated a process that involved the Michigan’s HIT and HIE stakeholder community and determined the overall approach toward governing statewide Health Information Exchange services. This approach, documented in detail in the Strategic Plan, involved the creation of a collaborative governance structure between the legislatively mandated Health Information Technology Commission (HIT Commission) and a not-for-profit organization, the Michigan Health Information Technology Network (MiHIN) Shared Services. As delineated in the Strategic Plan, the HIT Commission will be leveraged to set broad based policy decisions and the MiHIN Shared Services Governance Board will execute on the technology components of the statewide HIE.

Establishing this Governance structure is the first and most critical task to complete. It is expected that these activities will initiate upon the submission of the Strategic and Operational Plan using members of the current MiHIN Governance Workgroup including the State of Michigan staff and will be completed July 2010.

2.2 Finance
The primary consumers of the statewide shared services are the Sub-state HIEs and the payers of healthcare. Defining the primary customers guided the formation of the operational decisions related to the creation of the budget and the overall sustainability plan.

To ensure broad participation in the statewide shared services, there are no hard dollar costs to the stakeholder community until 2012. However, in order to ensure that the stakeholders were invested in the project, in kind contributions in the form of labor would be expected from those customers who connect to the MiHIN Shared Services. Therefore during the startup phase of the MiHIN Shared Services (2010 and 2011) funding for the planning, capital, operational startup and pilot project implementation costs will be covered through the State HIE Cooperative Agreement and State of Michigan matching funds.

Beginning in 2012 a fee structure consisting of access and usage fees will be collected from the primary customer base of Sub-State HIEs and Healthcare Payers that are connected to the MiHIN Shared Services.

Michigan was allocated $14.9M through the State HIE Cooperative Agreement. The amount combined with the calculated State funded match of $1.6M results in a budget of $16.6M. One million dollars was allocated for planning and $1.9M is dedicated for the Michigan Department of Community Health (MDCH) grant requirements and to fund the work of the Michigan HIT Commission resulting in a total of $13.7M being available for the governance, technical and business operations of the MiHIN Shared Services.

2.3 Technical Infrastructure

The MiHIN Shared Service will be implemented in phases that will provide ability for the stakeholders to consume the technology components in manageable pieces.

The current project schedule sets a goal that the technology implementation will initiate in October 2010. This milestone requires the selection of vendors and the associated products prior to that date. Therefore the stakeholder community has identified the RFP process as a critical path item for the deployment of MiHIN.

The planned deployment of MiHIN Shared Services was structured to provide customer benefit through the implementation of specific use cases that map to the HIE Service areas identified in the State HIE Cooperative Agreement Funding Opportunity Announcement. This approach has an added benefit of allowing the stakeholder community to build out the foundational components in an incrementally over a period of 12 months and will ultimately lead to an extensible set of web services operating through a enterprise service bus that will facilitate comprehensive data exchange among Michigan’s sub-state HIEs throughout Michigan, to other states and nationwide.

The approach that MiHIN Shared Services will use involves the deployment of core infrastructure technology beginning in 2010 that will enable the transfer of reportable lab
summaries to MDCH’s Disease Surveillance System (MDSS) and the transfer of Immunization records to MDCH’s Immunization Record (MCIR) System. In order to accomplish these use cases a Master Patient Index, an initial set of Security Services and a Provider Index will be deployed.

Phase 2 will consist of continuing with the same approach of incrementally adding functionality by deploying more of the core infrastructure including: the completion of the Security Services, standing up an XDS Registry/Record Locator Service and the component required to implement the shared services bus. This will result in the sub-state HIEs being able to retrieve Immunization histories from MCIR and the transfer of Continuity of Care Documents (CCD) to physician offices and emergency departments.
2.4 Business and Technical Operations

The MiHIN Shared Services Governance Board is scheduled to begin operations in July 2010. The primary activity within the first quarter of operation will be to utilize the technical documentation produced during the planning activities to create a Request for Proposal which will result in the selection of a vendor for the technology that will be deployed.

Once the technology implementation kicks off the focus of the MiHIN Shared Services Governance Board will turn to finalizing the financial sustainability strategy and the creation of the business plan which is due to the ONC by February 2011.

2.5 Legal and Policy

The Governance section of this document provides an overview of the steps required to implement the legal entity and to obtain the State Designated Entity status. This section focuses on the implementation of the privacy and security aspects of Michigan’s Strategic Plan.

The stakeholder community has been working with the State of Michigan and other organizations to develop a comprehensive security and privacy policy for the MiHIN Shared Services. In order to implement these policies the MiHIN Shared Services Governance Board will appoint both a Privacy Officer and Security Officer that will ensure compliance with the application federal, state and international laws as well as providing state-wide leadership and guidance for the broad stakeholder community.

As a starting point for ensuring compliance a set of policies were developed, including: consent, access, authentication, authorization, and breach notification policies that will be provided to the MiHIN Shared Services Governance Board for implementation.

The approach toward implementing these policies will be the creation of a Participation or Subscription Agreement for the sub-state HIEs to sign in order to connect to the statewide shared services.
3 General Components

This section of the document provides an overview of the State of Michigan’s general approach toward implementing the Strategic Plan. It contains a high level schedule of the activities required to stand-up the MiHIN Shared Services, executing the procurement process to select the required vendor(s) and performing the technical activities associated with standing up the Core Services and implementing the technology required for the identified use cases.

3.1 Project Schedule

The project schedule that has been created is designed to demonstrate the activities and interdependencies that exist in order for the content of the Strategic Plan to be operationalized. The early phases of this project schedule are critical to ensure that the technology components can be properly implemented in a timely manner thereby allowing the MiHIN Shared Services components to be available for use by the sub-state HIEs and Payers.

This section of the MiHIN Shared Services Operational Plan describes the project schedule, its interdependencies, and risks and mitigation measures.

3.1.1 Overall timeline

The timeline associated with this project plan has been broken down into several major sections, some of which will run in parallel. The first major activity is to standup the Governance structure in July 2010. Once that critical path item is satisfied the process for selecting the vendor and associated technology can begin with a goal of vendor selection finishing September 2010.

The selection of the technology vendor will allow the Governance Board of MiHIN Shared Services to transfer the implementation responsibilities to the technical team to implement the core technology required to satisfy the targeted use cases beginning October 2010. This will allow the Governance Board to focus on the creation of Business Plan for Financial Sustainability which is due in February 2011. The Financial sustainability will need to be implemented in January 2012 when membership and other fees are expected to sustain the MiHIN Shared Services.

3.1.1.1 Governance Timeline

The State of Michigan and the Healthcare Stakeholders involved in the Governance Workgroup activities have made significant progress on determining the framework for the MiHIN Shared Services entity and its associated governance board. In the Strategic Plan the type of entity and overall board make-up is described in detail. As of the submission of this plan the State of Michigan and the members of the Governance workgroup will begin with the activities in implementing the strategy.
The goal is to have the Governance Entity operating and an Executive Director selected by July 2010. This means that the initial members of the Governance board will need to be selected in June 2010.

To complete the coordinated governance structure, as described in the Strategic Plan, the State of Michigan must seek a legislative change for the HIT Commission to add a member of the MiHIN Shared Services Governance Board. Further, Governor Jennifer M. Granholm must designate the MiHIN Shared Services Governance Board as the State Designated Entity. These changes are targeted to begin in May 2010.

### 3.1.1.2 Vendor Selection

Throughout the workgroup process a group of technical stakeholders have been involved with the vendor community to understand the vendor capabilities that exist in the marketplace today to realistically implement the capabilities of MiHIN within a defined budget. These activities did not include a formal RFP process yet resulted in the creation of a Systems Requirements Document and detailed specifications for the interfaces that would be required for the pilot implementations. These documents were created in such as fashion as to ensure that they could easily be inserted into a RFP template with the associated terms and conditions and evaluation criteria.

As a result it is the plan of the MiHIN Shared Services entity to use this work and quickly release a request for proposal to select a vendor technology. The planning activities that preceded this operational plan included the creation of a Technical Architecture Plan, System Requirements document and targeted technical specifications. Also during the preparation activities a Vendor Technical Collaboration Team was formed that informed a project team on the status of various vendor products. The combination of these activities will allow for the creation of a Request for Proposal on an aggressive schedule. It is expected that the RFP will be released as a next step once the MiHIN Shared Services Entity is formed in July 2010. The goal is to finalize the vendor selection and contract negotiation in September 2010.

### 3.1.1.3 Technology Deployment

The MiHIN Shared Services technology components will be implemented incrementally with each phase deploying a use case that relates to the Meaningful Use requirements and simultaneously building out the core infrastructure. This implementation method balances user adoption, business planning and infrastructure development in such a way to create sustainability, extensibility and scalability.

The MiHIN Shared Services implementation will occur in two phases of approximately six months each. The goal is for the first phase to begin in October 2010.

### 3.1.1.4 Business Planning and Sustainability Timeline
The new MiHIN Shared Services 501(c)(3) organization, once it has been created in July 2010, will undertake the development of a business plan that supports their adopted financial sustainability strategy and approach. In this effort the estimated operational and capital budgets developed during the Strategic and Operational Planning phase will be replaced with actual budgets that result from completing a formal RFP process and from the implementation and ongoing support of the planned HIE pilot projects.

The initial and ongoing results of business and financial modeling will enable MiHIN Shared Services to finalize its revenue targets and establish the appropriate fee structures that will be incorporated into the stakeholder trust agreements thereby establishing the formal basis for financial support. Additionally, this modeling activity will allow MiHIN Shared Services to finalize its Business Plan and submit this plan to the ONC by the February 10, 2011 deadline.

3.2 Interdependencies

A project of this magnitude has many interdependencies that are on the critical path to success. This section of the plan describes the macro-level dependencies while the detailed project plan that will be created during the project will provide a complete picture of all the dependencies.

3.2.1 Governance Entity Functioning and Funding

Michigan’s structure for the deployment of the MiHIN Shared Services requires the creation of a not-for-profit corporation that will operate as the statewide organization responsible for the implementation of the technology that will facilitate Michigan’s providers with ability to exchange data on a statewide basis. When the MiHIN Shared Services Governance Board is created and functioning the substantial decisions and critical activities can begin in earnest.

Therefore it is imperative that MiHIN Shared Services be operating in July 2010 and the associated federal funding be available.

3.2.2 Vendor Selected and Contracts signed

The second major dependency is the selection of the vendor(s) that will provide the technology for the operation of the MiHIN Shared Services. The selection of this vendor requires that MiHIN Shared Services entity purchase the technology that satisfies its requirements at a competitive price. MiHIN Shared Services will use a RFP process to ensure that selects the correct vendor technology. This project has been structured to minimize the match funding that the State of Michigan will need to provide through the State HIE Cooperative Agreement, as a result it is a goal for the contract to be signed with the vendor in October 2010.

3.2.3 Sub-State HIE Capabilities
The technical architecture of the MiHIN Shared Services leverages the work of Michigan’s existing and operational sub-state HIEs. Though the sub-state HIEs have made tremendous progress within their respective areas of services, the sub-state HIEs within Michigan require funding to become fully capable of participating in the MiHIN Shared Services. Therefore, the MiHIN Shared Services Budget provides funding for multiple sub-state HIEs to make the necessary additions and changes to their technology and organization. It is critical that the MiHIN Shared Services Governance Board holds the sub-state HIEs accountable toward making the changes required within their organizations to enable participation with the MiHIN Shared Services.

3.2.4 Technology Dependencies

The technology that is required to be implemented to support the use cases will be deployed in such a way that will maximize use case functionality without causing rework in later phases. The Master Patient Index (MPI) is scheduled to be deployed first along with portions of the security services. This approach will provide a high value component deployed in a secure manner that will provide the basis for the build out of use case functionality. The provider directory is dependent on the deployment of the MPI.

3.3 Project Risks

Given that statewide HIE Shared Services is a relatively nascent area of healthcare, a certain level of risk can be expected as the project is implemented. The following risks have been identified according the State HIE Cooperative Agreement five domains. Each risk is accompanied by an assessment of the impact of the risk along with a strategy and approach to mitigate that particular risk. As the project is implemented, the proactive nature of the mitigation strategies are expected to eliminate or substantially reduce the risks, however they will also be refined and changed if necessary in response to the evolving nature of these risks and other risks that are identified.

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<th>Risk Impact Assessment</th>
<th>Mitigation</th>
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<tr>
<td>Governance: Stakeholder support</td>
<td>Moderate</td>
<td>As the MiHIN Shared Services begins implementation the support for statewide shared services by sub-state HIEs will be critical to successfully implementing the Operational Plan. The challenges and priorities for implementing their own respective HIEs could result in reduced focus and</td>
<td>Maintain the momentum created from the Governance Workgroup process and immediately shift into establishing the MiHIN Shared Services Governance Board. Ensure strong participation in Governance by sub-state HIEs and ensure they are active participants in implementation decisions and the attainment of milestones.</td>
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<td>Likelihood of Occurrence</td>
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<tr>
<td>Governance: Timing to get MiHIN Shared Services Established</td>
<td>Moderate</td>
<td>The plan calls for the creation of a State Designated Entity to procure and operate the technology associated with MiHIN Shared Services. Without this entity there is no procuring agent.</td>
<td>Begin the creation process using experienced personnel and stakeholders immediately after the submission of the Strategic and Operational Plan. Enlist stakeholder support throughout the process to ensure timely acceptance of bylaws.</td>
</tr>
<tr>
<td>Governance: Ability to get contract executed with Vendor by 1 October 2010</td>
<td>Moderate</td>
<td>The timeline for implementing MiHIN Shared Services requires that a contract be executed and project planning begins on the date specified. Delaying the start date has multiple impacts on the project including the amount of match funding necessary.</td>
<td>The creation of the System Requirements Document and Pilot Specifications documents in the planning phase will greatly shorten the time required to create an RFP.</td>
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<tr>
<td>Technical: Architecture Model</td>
<td>Low</td>
<td>The choice of an architectural model has risks as well as benefits. There are some risks in designing the MiHIN Shared Services Bus as a gateway between Sub-state HIEs and modeling the SSB as a NHIN compatible architecture. The primary risks are the immaturity of the shared services bus technology and the potential costs and time to build it.</td>
<td>Build the MiHIN Shared Services incrementally ensuring that each part works and is valuable before adding new capabilities. Vendor selection will be very important to controlling costs and timeline for implementation. These risks can partially be offset by contract terms.</td>
</tr>
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<td>Technical: Leveraging Existing Technology</td>
<td>Low to Moderate</td>
<td>Leveraging existing technology is both an opportunity and a risk. The goal in leveraging existing technology is to save money. But the key risk in trying to leverage technology is the complexity of integration.</td>
<td>Initially, attempt only to leverage value-added networks that are already in place as opposed to trying to leverage core components of the technology. Attempt to leverage core components in the future to function as redundant services once the core components are working.</td>
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<td>Business Operations: Failure to accomplish implementations</td>
<td>Low</td>
<td>Implementations can fail for (1) technical, (2) organizational and (3) process reasons.</td>
<td>To minimize the risk of failure for these reasons, and the MiHIN Shared Services Governance Board will continue to, (1) thoroughly review the technologies to be</td>
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<tr>
<td>Risk Event</td>
<td>Likelihood of Occurrence</td>
<td>Risk Impact Assessment</td>
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<tr>
<td>Privacy and Security: Consumer Perception</td>
<td>Moderate</td>
<td>The Privacy and Security Work Group identified a risk related to managing the consent process. While the work group recognized that the portability of individually identifiable health information is critical to the success of HIE, the risk of consumer perception and fear was also readily acknowledged.</td>
<td>Refined and easily understandable educational and outreach materials for both providers and consumers; privacy and security officers for the MiHIN Shared Services Governance Board; issuance of consistent and guidance materials for Sub-state HIEs; willingness and flexibility to adjust consent options as technology evolves.</td>
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<tr>
<td>Privacy and Security: Confusion Among Sub-state HIEs Regarding Compliance with State and Federal Law</td>
<td>Low</td>
<td>The Privacy and Security Work Group also identified a risk related to the management of compliance with multiple federal and state laws and regulations. Newly forming and newly evolving sub-state HIEs will not only have to ensure that their participant activities are legal and in compliance with any existing laws, the sub-state HIEs will also have to ensure that they are in compliance with the policies and procedures of the MiHIN Core Services Network. In order to build the fabric of trust between diverse participants, regardless of what sub-state HIE they participate in, overall direction and guidance will need to come from the MiHIN Privacy and Security Officers.</td>
<td>Involving sub-state HIEs in the future development of HIE policies to ensure that concerns are addressed, appointing a Privacy Officer and a Security Officer to lead efforts, reviewing and updating the Comparative Analysis Matrix, engaging a health law attorney to issue opinions that can be trusted by all sub-state HIEs, requiring all sub-state HIEs will have a contractual agreement with the MiHIN Core Services Network.</td>
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<tr>
<td>Finance:</td>
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<td>The possibility that the MiHIN will develop a Request for Proposal</td>
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<td>Acquisition and Implementation Costs too high</td>
<td>Moderate to High</td>
<td>preferred vendor costs for hardware and software acquisition and implementation services could exceed the available Federal and State grant funding.</td>
<td>that will appeal to the largest possible number of software and hardware vendors by encouraging vendors to submit joint responses that package all hardware, software, and implementation support into a single proposal, additionally, it will seek component pricing breakdowns to allow for more effective pricing analysis and comparison, and more informed selection of components and services.</td>
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<tr>
<td>Finance: Sub-state Health Information Exchanges don’t evolve in a timely manner</td>
<td>Moderate to High</td>
<td>The possibility exists that several of the sub-state Health Information Exchanges that are currently in the planning or early implementation stages will not be able to complete their efforts within the next 18 to 24 months which will significantly reduce the number of primary customers across which MiHIN can spread its operating costs.</td>
<td>The MiHIN Shared Services will take several steps to mitigate this potential risk. First, the state of Michigan will coordinate the outreach, marketing and educational activities with the State of Michigan’s Regional Extension Center (REC) and the Medicaid EHR Incentive program to promote sub-state HIEs and provide relevant information to target audiences that may utilize the services of a sub-state HIE. Second, the State of Michigan will utilize multiple policy levers to promote transactions and reporting to come from providers through the sub-state HIEs to the State of Michigan. Lastly, the MiHIN Shared Services deployment plan prioritizes the core technologies and use cases that are most valuable to sub-state HIEs today and create immediate value for the customers of sub-state HIEs. This MiHIN Shared Services Operational budget includes funding for the initial sub-state HIEs to develop the necessary organizational and technical infrastructure to connect to the MiHIN Shared Services.</td>
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### MiHIN Project Risks, Impacts, and Mitigation Strategies

#### 3.4 Coordinate with ARRA Programs

Michigan has experienced a high level of planning efforts between the HIT ARRA programs in Michigan and the HIT Coordination Work Group has established milestones and timelines to carry-out the coordination activities. The State HIT Coordinator will continue to convene monthly HIT Coordination work group meetings with the staff of the Michigan Center for
Effective IT Adoption (M-CEITA), the State’s Regional HIT Extension and the Medicaid EHR Incentive Program Staff.

The goal of the HIT Coordination work group is to develop a united message to accelerate health IT adoption, awareness and acceptance amongst health care professionals and the citizens of Michigan. To accomplish this goal several milestones have been set. The development of a one stop website containing all of the necessary information on the HIT activities and projects in the State of Michigan is one of the milestones established. Planning for the one stop website began in January 2010 and the estimated time to move the website into production is June 2010.

A shared health IT adoption database is another milestone of the HIT Coordination work group. MiHIN, M-CEITA and the Medicaid EHR Incentive Program all have or plan to conduct surveys to gain a baseline on the status of HIT/HIE in Michigan. The efforts of survey development have been coordinated to ensure the healthcare professionals are not inundated with duplicative surveys. Future plans are to collect the results of the surveys into a database that is shared with the ARRA programs. The database will be a tool allowing for uniform reporting on Michigan’s health IT environment to the ONC and CMS. Planning for the shared database began in March 2010 and completion is expected by October 2010.

Michigan also plans on leveraging the Medicaid EHR Incentive Program and M-CEITA outreach plans to promote HIT and HIE. Current plans have the projects not only collaborating on outreach but also on educational activities, and as part of these activities, regional information and listening sessions will be held throughout the state to solicit information and input from healthcare professionals. The regional listening sessions will begin in the spring 2010 and continue through the summer of 2010. Providers that use M-CEITA services and/or enroll in the EHR Medicaid Incentive Program will be given assistance in joining an HIE connected to MiHIN Shared Services and will be provided with information to providers on how to realize the benefits of HIE in their practices, sustaining the transformative power of HIT.

Additional coordination between the MiHIN and the Medicaid EHR Incentive Program to leverage existing technologies and share directories and services will also take place and planning efforts are well underway. MDCH plans to leverage the Medicaid data warehouse integration capabilities to extract pertinent administrative and clinical information making it available in a CCD format to Medicaid providers through the MiHIN. The data warehouse’s repository capacity and analytical capabilities will also be used to support quality reporting requirements. The data warehouse and Michigan’s Medicaid Management Information System will utilize the MiHIN’s shared services.

A major milestone of this project is to establish a team of subject matter experts to carry-out the planning and implementation of this integration project. In March of 2010, a project manager was hired to lead the team in the development of a project plan and schedule. The project plan will be complete in June 2010. The integration plan and project schedule will be synchronized with both the MiHIN and the Medicaid HIT Plans.
3.5 Coordinate with Other States

To ensure intrastate coordination and interoperability with other states the MiHIN Shared Services Governance Board will utilize guidance already created by existing HIEs within Michigan, HIEs in other states, nationally recognized organizations, and the ONC. Some of the opportunities to coordinate with other states will initially begin with the following initiatives:

- PHIN Public Health Information Network
- Great Lakes Border Health Initiative- multi-state efforts that ensure that geopolitical and jurisdictional boundaries do not impede infectious disease control and surveillance efforts.
- NGA National Governor’s Association State Alliance for e-Health State-level HIE
- ONC- Office of the National Coordinator, including HISPC work

The MiHIN Shared Services coordinated governance structure will also have to monitor and participate in national conversations regarding Privacy and Security, including developments on NHIN and with the DURSA (Data Use and Reciprocal Support Agreement), as well as developments with projects like NHIN Direct. Through implementation of Privacy and Security policies and procedures and the Privacy and Security Committees, MiHIN Shared Services will work to harmonize intrastate efforts with an eye towards interstate exchange.
4 Domain Specific Components

The following sections define Michigan’s approach toward operationalizing the domain components detailed in the strategic plan. It is organized by domain and addresses the requirements of the ONC Toolkit.

4.1 Governance

The development of the MiHIN governance functions is a key to developing the statewide shared services infrastructure and supporting widespread interoperability. The MiHIN will be governed by a coordinated governance structure that builds on unique strengths that exist in Michigan.

In July 2010 a new 501(c)(3) not for-profit entity will be established and designated by Governor Jennifer M. Granholm as the State Designated Entity (SDE). The governance board of MiHIN Shared Services will assume the following responsibilities: the business and technical operations of MiHIN Shared Services technology; implementing this Operational Plan; authority over the MiHIN Shared Services; and implementing the financing structures.

Effective immediately, the existing HIT Commission, a representative body of Michigan’s HIT and HIE stakeholders, will assume the following responsibilities: monitoring the progress of HIT and HIE statewide; facilitating public discussion of HIT and HIE principles; recommending public policies for HIT and HIE adoption and use; and providing a voice of the public to the MiHIN Board and establish the statewide vision for HIE.

Together, these two entities will share responsibility for specific roles in providing leadership and facilitating consensus to continuously expand Michigan’s HIT and HIE capacity.

4.1.1 Milestones, Interdependencies and Timelines

Work is currently underway to formally and legally establish the MiHIN Governance Board in July 2010. Key decisions that are required for the development of articles of incorporation and bylaws, as noted in the Strategic Plan, have been made by the Governance Workgroup. The appropriate actions are currently being taken to complete and file all legal documents required to establish the new entity.

In the timeline depicted below the critical steps that must be performed prior to July 2010 include: finalizing bylaws, designation as the State Designated Entity by the Governor, the establishment of MiHIN Shared Service as legal entity, the election of a board of directors and the hiring of an Executive Director and Administrative Assistant.

The July 2010 date is a critical path item to the MiHIN and has been identified as a risk in the risk section of this document.
The board will be seated in various methods: State government will appoint its members; the HIT Commission will vote on their representative. Healthcare payer and sub-state HIE organizations will be invited by MDCH to identify themselves. A letter from the Director of MDCH will be sent to potential sub-state HIE and payer organizations within Michigan. The intent of these letters is to identify interested parties that are commitment to serving as a member of the MiHIN Shared Services Governance Board. The MiHIN Shared Services Governance Board seating process will be defined with the input of multiple stakeholders throughout May 2010 with the initial board seated in June 2010.

Successful implementation of Michigan’s Strategic and Operational Plans will require close collaboration between the coordinated governance structure and the MiHIN Shared Services staff. The management structure and staff to operate the MiHIN Shared Services on a day to day basis will be phased in over the four year project term. Positions, including the Executive Director, will be added during 2010 and 2011. Additional staff will be added with the organization fully staffed by 2014. The MiHIN Shared Services Governance Board will evaluate the staffing plans on a quarterly basis to determine the most efficient and effective strategy for staffing.

4.1.2 Achieving Status as a National Health Information Organization

The technical infrastructure, interoperability standards and privacy and security policies in Michigan’s Strategic and Operational Plans were designed to accommodate national standards and enable connection to the National Health Information Network (NHIN). The MiHIN Shared Services will be well positioned for connectivity to federal systems due to the design of the architecture.

It is the role of the Michigan HIT Commission to assure continued alignment of the statewide and national vision for health information exchange. It will be the role of the MiHIN Shared Services Governance Board to assure the statewide infrastructure is implemented in accordance with the Strategic and Operational Plans. The Michigan HIT Coordinator will serve as the liaison with NHIN to ensure regular communication regarding the MiHIN Shared Services’ evolution toward achieving operational status as an NHIO. The Michigan HIT Coordinator will be charged with keeping the coordinated governance structure fully informed of NHIN developments.

4.2 Finance

The MiHIN Shared Services Strategic Plan establishes the guiding principles, the overriding strategy, and the underlying approach to the financial sustainability of the Michigan statewide shared services network. This foundation not only guided the decisions and efforts that were required to develop the Strategic and Operational Plans. This section provides details related to the financial processes and efforts required to implement the Strategic Plan, and it provides the
specifics of the MiHIN Shared Services startup and operational budget as well as the MDCH Planning and HIT Commission operational budget components.

4.2.1 MiHIN Shared Services Operating Budget

The budget and staffing plan required for the implementation of the Strategic Plan and to operate the MiHIN Shared Services network was developed based upon the selected governance and legal structure, the identified ongoing activities, the architectural infrastructure design, and the stakeholder prioritized services. These factors were used as the foundation for gathering of cost information from several sources including other state and community based Health Information Exchanges and from a select group of the leading HIE vendors. The following are the processes utilized to develop the budget and staffing plan.

- An informal RFI process was undertaken to obtain information regarding software, hardware, implementation and hosting services costs; this included direct discussions with interested vendors
- Detailed discussions were held with several leaders and staff members from the State of Michigan, the Michigan Department of Information Technology and the Michigan Department of Community Health to understand their requirements
- The operational budgets and staffing structures of several other state and community Health Information Exchanges were reviewed to provide insight into the MiHIN budget and staffing, and to validate budget and staffing assumptions
- The ongoing governance, legal/policy, technical, business, and financial activities were identified to assist in defining budgetary requirements

The funding and staffing detailed in the following MiHIN Shared Services budget will allow Michigan to:

- Establish the MiHIN shared services infrastructure to support the deployment of a Master Patient Index, a Master Provider Index, an XDS Repository (Record Locator Service), and security services that make up the enterprise Shared Services Bus.
- Deploy the shared services technology at the MiHIN and sub-state HIE level to undertake use cases that correlate to the first Meaningful Use requirements
- Establish, govern and operate the MiHIN organization, and manage the startup and implementation processes
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4.2.2 MiHIN Shared Services Staffing Plan

The section below details the overall staffing plan associated with implementation the MiHIN Shared Services Entity. Key functional roles and their associated descriptions are described in this section. The Business and Technical Operations section of this document provides more detail on how contractor and vendor staff will be used to augment these resources during the implementation of the MiHIN Shared Services technology.

The Staffing Plan consists of the following positions phased in over a five year period. In 2010 and 2011, during the deployment, implementation, and startup stage, the Executive Director, Administrative Assistant, Project Manager, Business Analyst, and the two Customer Support
Specialists positions will be filled. These positions will provide the direction, leadership, and coordination for the MiHIN Shared Services governance and business operations startup activities, customer support activities, as well as, the technical activities related to the design, acquisition, and deployment of the statewide shared services network infrastructure.

Additionally, these positions will provide the project management and technical leadership for the implementation of the planned HIE pilot projects. During this phase the MiHIN Shared Services staff will be assisted by a contracted Implementation Team that will provide lead positions in the areas of business and system architecture including privacy and security. The following provides a general description of the responsibilities of these first MiHIN Shared Services positions.

- **Executive Director**: Provides strategic and operational direction and oversight for the organization; ensures that the MiHIN outreach program is coordinated with sub-state HIEs and Michigan’s REC; is the executive representative for MiHIN Shared Services and is the primary point of contact for the stakeholders and others seeking to conduct business with MiHIN Shared Services.

- **Administrative Assistant**: Provides clerical and administrative support; assists the Executive Director in collecting, tracking, and reporting of the financial activities, and assists with the maintenance of the MiHIN Shared Services website content.

- **Project Manager**: Coordinates all service development and service implementation projects with vendor, contracted, sub-state HIE, and the State of Michigan project managers and staff; ensures that industry recognized standards and methods are utilized to manage all projects.

- **Business Analyst**: Coordinates activities related to the identification, evaluation, and selection of services and capabilities that will be offered by MiHIN Shared Services; monitors and reports stakeholder utilization of existing services and capabilities; assists in the maintenance of the MiHIN Shared Services website content.

- **Customer Services Specialist**: Coordinates activities related to the operational support of the MiHIN Shared Services stakeholders including access to services and capabilities, and coordinating the resolution of MPI identity match issues with the sub-state HIEs.

In 2012, with the beginning of the first year of full production operations the Technical Analyst and the Lead Technical Architect positions will be filled. These positions will provide additional capacity to support new stakeholders and new services, and will assume more responsibility for the control and direction of the MiHIN Shared Services technical infrastructure. During this period the MiHIN Shared Services staff will continued to be supported by the contracted Implementation Team, however, this support will not require as much time during this stage of operations as was required during the startup and implementation stage. This contracted support will be phased out at the end of State HIE Cooperative Agreement funding. The
following provides a general description of the responsibilities of these additional MiHIN Shared Services positions.

- **Technical Analyst:** Coordinates activities related to the operational status of technical and functional services and capabilities, stakeholder access to these services and capabilities, and assists in the resolution of data, software, and hardware issues including providing the second level of support for the resolution of MPI identity match issues.

- **Lead Technical Architect:** Coordinates activities related to the acquisition, installation, maintenance, and operation of the various infrastructure components; sever as the primary contact for all vendor and service provider contracts, and serves as the primary system architect for the MiHIN Shared Services organization.

In 2014, the organization will have implemented its Business Plan and will be fully sustainable without dependence upon grants or State subsidy for its operations. Beginning this year the MiHIN Shared Services operations will be supported entirely by entity employed staff. At this point the remaining open positions will be filled; this includes the Lead Security Architect, and the Lead Privacy Analyst. These positions will replace the contracted Implementation Team staffing that will be phased out at the beginning of this year. The following provides a general description of the responsibilities of these additional MiHIN Shared Services positions.

- **Lead Security Architect:** Coordinates activities related to the establishment of security and access standards, policies, methods, and procedures; monitors, reports, tracks, and resolves security and access violations; this position is a contracted position during the grant period, and it will then become a permanent staff position.

- **Lead Privacy Analyst:** Coordinates activities related to the establishment of privacy and confidentiality standards, policies, methods, and procedures; monitors, reports, tracks, and resolves privacy and confidentiality breaches; this position is a contracted position during the grant period, and it will then become a permanent staff position.

### 4.2.3 MDCH Planning & HIT Commission Budget

The following details the operational components of the Michigan HIT Commission budget that directly support the governance and operations of MiHIN Shared Services, as well as, those components required to support activities related to the monitoring the progress of HIT and HIE adoption statewide, facilitating public discussion of HIT and HIE principles, and recommending public policies for HIT and HIE adoption and use.
### MDCH Planning & HIT Commission Operating Budget

This is a calendar year based budget representing the 4 fiscal years of the ONC Grant

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<th>Item Description</th>
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</table>
4.2.4 HIT Commission Staffing Plan

This Staffing Plan includes the current positions of HIT Coordinator and the Department Manager which have led the development of the MiHIN Shared Services Strategic and Operational Plans, and the position of Outreach Coordinator that will be recruited by October 2010. These positions will provide the direction, leadership, and coordination of HIT Commission activities with the MiHIN Shared Services staff and governance body in the areas of business operations, operational startup, statewide shared services priorities, network infrastructure design, and stakeholder outreach and education activities.

- **HIT Coordinator:** Provides senior management leadership and government oversight of the State of Michigan’s involvement in the creation and operation of the statewide shared services network and the exchange of health information. Provides daily coordination with the MiHIN Shared Services Executive Director in the areas of stakeholder education, collaboration, and consensus building regarding the statewide and national vision for health information exchange and HIT adoption, and public policy development.

- **Department Manager:** Provides departmental leadership in the administration of the HIT Commission’s operations including areas related to outreach and educational program development, definition and development of state and national progress reporting, and coordination with the MiHIN Shared Services leadership in the development and delivery of stakeholder and public informational and educational programming.

- **Outreach Coordinator:** Provides coordination of marketing and outreach activities with MiHIN Shared Services leadership, sub-state HIEs, and the healthcare community in Michigan; promotes the adoption and use of HIT, the exchange of health information through the sub-State HIEs and MiHIN Shared Services; coordinates the development and distribution of marketing, educational, and promotional materials; coordinates the maintenance of the MiHIN Shared Services website content.
4.2.5 Achieving Operational Status

The funding and the staffing represented in the above budgets provides the resources to operationalize the MiHIN Strategy and Approach for Financial Sustainability which calls for the implementation of a series of funding mechanisms that establishes an equitable and proportional allocation of costs across all MiHIN Share Services customers. It directs the organization to utilize only those funding mechanisms that through an ongoing process of analysis and review achieve the following:

1. Recognize that all who benefit from the values realized from the exchange of health information will equitably and proportionally participate in the financing and support of the statewide shared services network, and

2. Optimize the use of the statewide shared services network by establishing a fee structure that encourages the adoption and use of HIT and the exchange of health information within and across sub-state HIEs, thus further assisting eligible providers in achieving “meaningful use”, and

3. Enable the extension and expansion of the capabilities, services, and benefits of the exchange of health information within the State of Michigan by ensuring that sustainable revenues are available to meet both current and future federal, state, and stakeholder service demands beyond the four years of the HITECH grant funding (2010 – 2014).

MiHIN Shared Services will institute an evaluation and review process that will continually measure the appropriateness and effectiveness of the various funding mechanisms to ensure the operational sustainability of the statewide shared services network beyond the HITECH grant funding period. The selected mechanisms will enable the equitable and proportional allocation of costs to the various stakeholders, and will ensure that the pricing structures reflect the relative value of each service and generate the required revenues. To ensure the most cost effective acquisition of services and assets the State of Michigan will continue to utilize its purchasing power to enable MiHIN Shared Services, as the State Designated Entity, to leverage its purchases. The following describes the funding approach that will be used in each stage of evolution of MiHIN Shared Services’ production operations.

**Startup & Pilot Stage** - During the startup and pilot phases of operations (2010 and 2011) MiHIN Shared Services financing will utilize funds provided through the HITECH State HIE Cooperative Agreement grant and the State of Michigan matching funds to cover planning, capital startup costs, asset acquisition, operational startup costs, and pilot project implementation costs.

**Production Stage** - Beginning in 2012 with the first full year of production operations MiHIN Shared Services will initiate the collection of access and usage fees from its primary customer
base which includes the sub-state Health Information Exchanges and Public and Private Healthcare Payers that are then connected to MiHIN Shared Services statewide network. These fees will begin establishing the financial sustainability of the network. It is likely that the allocation of the fees to each of the primary customers will be based upon one or more factors that reflect some relevant aspect of its service base such as total population, number of hospitals, number of hospital beds, number of admissions, number of ER visits, number of ambulatory encounters, number of physicians, market share, number of covered lives, or other such statistical indicator of potential impact and benefit. This equation will be finalized by the MiHIN Shared Services Governance Board.

Each sub-state Health Information Exchange will determine the methodology it will use to allocate their MiHIN fees across their customer base. This process will significantly simplify the MiHIN revenue administration activities, and will take advantage of the revenue processes already in place in each sub-state Health Information Exchange.

Additionally, during this initial production period MiHIN Shared Services may institute the use of additional access and usage fees such as Membership, Subscription, Sponsorship, Transaction, and Fee-for-Service fees to accommodate the addition of new customers and new statewide shared services. This evolving fee structure and the growing customer base will provide the sustaining revenue required to operate the MiHIN statewide shared services network beyond the grant period.

**Sustainable Production Stage** - Finally, beginning in 2014 at the end of the HITECH State HIE Cooperative Agreement grant period, MiHIN Shared Services will have established the services and the customer base to provide the sustaining revenues it requires for operations without dependence upon additional grant funding or State of Michigan subsidies. While grant funding will not longer be required for operational support, it is anticipated that additional grant funding will be sough to support the acquisition, deployment, and piloting of new statewide shared services.

**4.2.6 Business Model and Financing**

The new MiHIN Shared Services 501 (c)(3) entity, once it has been created, will undertake the development of a business plan that supports their adopted financial sustainability strategy and approach. In this effort the estimated operational and capital budgets developed during the Strategic and Operational Planning phase will be replaced with actual budgets that result from completing a formal Request for Proposal process and from the implementation and ongoing support of the planned HIE pilot projects.

This financial and business modeling effort will establish the ongoing process that will allow all factors including those listed below to be fully analyzed and periodically reviewed to ensure that the selected funding mechanisms remain aligned with MiHIN Shared Services financing strategy and guiding principles, and that they continue to produce the required sustaining revenue.
The following are examples of business and financial evaluation factors that will be considered:

1. The impact, appropriateness, acceptability, and timing of each of these funding mechanisms as it relates to each stakeholder group
2. The size and number of participants in each stakeholder group
3. The timing of the delivery of each of the identified service priorities
4. The extent to which the value of a given service can be determined and associated with one or more stakeholder groups
5. The extent to which a given service has a directly associated ROI that can be associated with one or more stakeholder groups

The initial and ongoing results of this business and financial modeling will enable MiHIN Shared Services to finalize its revenue targets and establish the appropriate fee structures that will be incorporated into the stakeholder trust agreements thereby establishing the formal basis for financial support. Additionally, this modeling activity will allow MiHIN Shared Services to finalize its Business Plan and submit this plan to the ONC by the February 10, 2011 deadline.

Accounting, financial and reporting structures will be established by MiHIN Shared Services to reflect the financial plan and budget presented for the State Health Information Exchange Cooperative Agreement program. The software and accounting pack is yet to be selected. That will be a primary initial function of the MiHIN Shared Services governance board once the entity has officially been created and is functional. The requirements for the accounting and time keeping applications will include Generally Accepted Accounting principles. There will also be challenges surrounding the grants management process. This will require a centralized process for grants management to assure that no money is left on the table and that an accurate understanding of administrative costs will be crucial to management of them. In addition, MiHIN will comply with OMB regulations Circular A-122 and Circular A-133 detailing the requirement to supply certified audits and reports of the MiHIN accounting activities by engaging a CPA.
4.3 Technical Infrastructure

Michigan’s technical infrastructure will accommodate the implementation of a statewide shared service bus while providing a framework that sets boundaries on the dimensions of technical implementation to ensure interoperability and consistent operation.

This section defines the approach, action steps and decision points associated with the technical aspects of the deployment of the MiHIN Shared Services Bus including NHIN interoperability. It also describes plans to respond to the evolving meaningful use criteria and relevant certification processes.

4.3.1 Implementation Approach and Action Steps

The MiHIN Shared Service will be implemented in phases that will provide ability for the stakeholders to consume the technology components in manageable pieces.

The current project schedule sets a goal that technology implementation will initiate in October 2010. This milestone requires the selection of vendors and the associated products prior to that date. Therefore the stakeholder community has identified the RFP process as a critical path item for the deployment of MiHIN.

The planned deployment of MiHIN was structured to provide immediate consumer benefit through the implementation of specific Use Cases that map to the ONC HIE Service areas. This approach has an added benefit of allowing the stakeholder community to build out the foundational components in an incremental fashion that over a period of 12 months will ultimately lead to an extensible set of web services operating through an Enterprise Services Bus (ESB) that will facilitate comprehensive data exchange throughout the State of Michigan and with additional funding the NHIN.

An aggressive schedule of six weeks is planned for the vendor selection process. This schedule can only be achieved because of the significant work performed by the State of Michigan and contracted consultants and subject-matter experts from September 2009 through April 2010. During that time period a technical architecture document was created, vendors were solicited through an RFI process, a technical workgroup consisting of stakeholders through the state was convened, vendors were further screened through the Vendor Collaboration Team, a System Requirements Document was completed and targeted detailed technical specifications were complete. This work, specifically the System Requirements Document and Technical Specifications are structured to be integrated into a RFP template.

A two week period for contract negotiations has been allocated with a contract planned to be executed in September 2010. This schedule provides some contingency during September and allows for a project planning period prior to the project start in October 2010.
4.3.2 Decision Points

Throughout the project key decisions will be made regarding the deployment of technology. Those decisions will be documented during the project planning activities. This section of the document details larger scope decisions that will need to be made during the implementation of MiHIN.

4.3.2.1 Vendor Selection

One of the key decisions that will be made by the MiHIN Shared Services Governance Board in the early phases of the project will be the selection of the vendor. This decision will be made using a process that will combine immediate business need, strategic direction, capabilities and cost.

4.3.2.2 Leveraging Components

Leveraging components that stakeholders already have that are required by the MiHIN shared services bus is a key decision for the implementation team. For example messaging gateways (or interface engines), eMPIs, security tools and data warehouses are all examples of some of the technologies uncovered during an analysis of the HIT and HIE capacity in Michigan. Determining if any of them should be leveraged or extended to the Shared Services Bus will be a part of the first phase of the technology deployment.

The core components of the MiHIN are crucial to its function, performance, security and success so reusing existing components must be considered carefully. As the MiHIN matures there will be the need to have more than one shared services bus for purposes of reliability and performance.

4.3.3 Alignment with NHIN Core Services and Standards

The MiHIN architecture has an overarching goal to be compliant with the national standards for healthcare interoperability recognized by the Secretary of the Department of Health & Human Services (HHS). Specifically, HHS recognizes interoperability specifications containing harmonized standards published by the Healthcare Information Technology Standards Panel (HITSP), and as such, the MiHIN is being designed as a HITSP-compliant and HITSP-consistent (where no direct conformance criteria exist) architecture. Similarly, HHS has sponsored a large scale development effort to build a national health information exchange capability called the Nationwide Health Information Network (NHIN) that instantiates the HITSP standards into real networks and systems. The MiHIN will leverage the work of the NHIN effort in its architectural framework, as is cited later in this document.

The MiHIN Shared Services Bus will support the NHIN core functions of Security Services, Patient Discovery, Query for Documents and Retrieve Documents. NHIN Standards are mostly in Limited Production but there is at least one case of Production with the MedVirginia
connection to the Social Security Administration using Connect Open Source. To meet these functional requirements MiHIN Shared Services will follow the NHIN 2010 Final Production Specifications as follows:

- ACCESS CONSENT POLICIES PRODUCTION SPECIFICATION - V1.0
- AUTHORIZATION FRAMEWORK PRODUCTION SPECIFICATION V2.0
- QUERY FOR DOCUMENTS PRODUCTION SPECIFICATION V2.0
- RETRIEVE DOCUMENTS PRODUCTION SPECIFICATION V2.0
- HEALTH INFORMATION EVENT MESSAGING PRODUCTION SPECIFICATION V2.0
- MESSAGING PLATFORM PRODUCTION SPECIFICATION V2.0
- PATIENT DISCOVERY PRODUCTION SPECIFICATION V1.0
- WEB SERVICES REGISTRY PRODUCTION SPECIFICATION V2.0

The MiHIN Shared Services NHIN gateway implementation is scheduled to be implemented in Phase three. In order to prepare for this implementation all connectivity to the MiHIN Shared Services Bus will be standards-based.

4.3.4 Compliance to Certification Requirements

The MiHIN Shared Services Governance board recognizes that the ONC is ultimately the certifying authority for statewide HIE initiatives. MiHIN Shared Services will follow and implement any guidance published by the ONC and expects to be able to quickly attain certification when required.

4.3.5 Process for Responding to Evolving Meaningful Use Criteria

As the criteria and requirements for Meaningful Use expand and adapt over time, the MiHIN Shared Services technologies are a solid foundation to meet any emerging requirements. The shared services in security, document registry, patient and provider indexes and the shared services bus will enable any necessary functionality to be added incrementally, without requiring the replacement of current technologies to meet new needs and use cases.

At this time, the planned service capabilities are adequate to meet the needs of providers in Michigan to achieve meaningful use through the sub-state HIEs and the MiHIN Shared Services. The incremental nature of the deployment strategy allows the MiHIN to adjust service deployment to match the changing needs of Meaningful Use and developments in standards and technologies.

Operationally, the needs and requirements for health information exchange and meaningful use will be integrated in the formal environment scan methodology used to assess HIE in Michigan. The deployment strategy calls for a 12 month rolling window with two six month phases. As the first phase nears completion, the next six month implementation phase will be planned. These methodologies allow MiHIN Shared Services to adapt and meet changing needs.
4.4 Business and Technical Operations

This section of the Operational Plan describes the details of how the governance structure and technical operations will be implemented.

4.4.1 Governance Implementation

The MiHIN long-term governance model is a coordinated governance structure that includes utilizing the statewide vision and public structure of the existing Michigan HIT Commission and the creation a new MiHIN Governance Board to allow those that pay for and directly benefit from the MiHIN to govern the business and technical operations.

The Michigan HIT Commission will immediately assume its role in the coordinated governance structure, as it has the organization capacity to incorporate this scope of work.

It is expected that the MiHIN Shared Services Governance Board parameters (operational charter, etc.) will be defined by the end of May 2010 with the proper paperwork being filed and the initial appointment process ending in July 2010. The governing entities board has been defined to consist of a maximum of 13 members, consisting of representatives from up to seven sub-state HIEs, three payer representatives, two State government members (representing MDCH and Medicaid), and one commissioner from the HIT Commission.

The board will be seated in various methods: State government will appoint its members; the HIT Commission will vote on their representative. Payer and sub-state HIE organizations will be invited by MDCH to identify themselves. The MiHIN Shared Services Governance Board seating process will be defined with the input of multiple stakeholders throughout May and June 2010. The need to accommodate additional sub-state HIEs or other classes of board membership has been identified and listed as a future action item for the MiHIN Shared Services Governance Board.

Initial MiHIN Shared Services Board membership will be staggered and while the exact duration of a term is to be determined, officers elected by the board will serve at least a 2 year term.

Legal services will be used in May to perform the functions necessary to form the MiHIN Shared Services Governance Board entity. The entity will be initially incorporated as a Michigan corporation, then apply for 501(c)(3) status. It is expected that the governing entity will be operation in July 2010. At that time, the Michigan Governor Jennifer M. Granholm will designate the MiHIN Shared Services as the Governance Board as the State Designated Entity.

Before the boards first meeting, final corporate bylaws will be developed as well as clearly delineated and designated governance roles, along with non-discrimination and conflict of
interest policies that demonstrate a commitment to open, fair, and nondiscriminatory board activities. The bylaws, roles and policies will be developed by a sub-set of members from the MiHIN governance workgroup process.

The initial MiHIN Shared Services Governance Board meeting is scheduled in July 2010. At this meeting, the final bylaws, roles and policies will be approved. The MiHIN Shared Services Governance Board will conduct regularly scheduled meetings as determined by the bylaws creating the entity. The HIT commission will continue its regularly scheduled monthly meetings. A joint meeting with the Michigan HIT Commission is targeted to take place in September 2010.

4.4.2 Technical Implementation

The kick-off for first phase of the MiHIN Shared Services is October 2010. Leading up to kick-off date, a variety of planning and preliminary technical testing will occur. Currently underway are activities to define specifications including use cases, technical specifications, and implementation guidance. These documents will define the technical characteristics of the pilot projects and will be delivered to the MiHIN Governance Board upon completion.

Selection of pilot organizations will be done by the MiHIN Shared Services Governance Board and will be completed in September 2010. Technical procurement requirements will be met in October 2010. At that time, the formal kick-off of the first phase of the MiHIN Shared Services will begin.

The build-out of core MiHIN capabilities is scheduled to begin in October 2010. To incrementally test the implemented core services, proof-of-concept testing will occur after initial installations. The testing will confirm abilities to transfer reportable laboratory results to the Michigan Disease Surveillance System (MDSS) and immunization records to Michigan Care Improvement Registry (MCIR).

Core MiHIN capabilities will be built in two broad categories: core infrastructure build-out and security services, core infrastructure build-out will consist of a Master Patient Index (MPI), provider directory, XDS registry (Record Locator Service), which completes the shared services bus. The MPI is scheduled to begin implementation in October 2010, completing in March 2011. The provider directory is scheduled to begin implementation in January 2011, completing in March 2011. The XDS registry will begin implementation in April 2011, completing in June 2011. The last core infrastructure build-out, the shared services bus, will begin in April 2011 and complete in July 2011.

Security services will consist of audit and node authentication, consent, and roles. Audit and node authentication capabilities will begin implementation in October 2010, completing in December 2010. Capabilities to enforce consent directives will begin to be implemented in January 2011, completing in March 2011. The ability to enforce policy directives based on roles will begin implementation in April 2011, completing in September 2011.
A graphical summary of the deployment timeline can be found in the MiHIN Deployment Strategy Chart below.

<table>
<thead>
<tr>
<th>Core Infrastructure Buildout</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIPI</td>
<td>Oct-10</td>
<td>Apr-11</td>
<td>Oct-11</td>
</tr>
<tr>
<td>Provider Directory</td>
<td>Nov-10</td>
<td>May-11</td>
<td>Nov-11</td>
</tr>
<tr>
<td>XDS Registry (RLS)</td>
<td>Dec-10</td>
<td>Jun-11</td>
<td>Dec-11</td>
</tr>
<tr>
<td>Shared Services Bus</td>
<td>Jan-11</td>
<td>Jul-11</td>
<td>Jan-12</td>
</tr>
<tr>
<td>NHIN Gateway</td>
<td>Feb-11</td>
<td>Aug-11</td>
<td>Feb-12</td>
</tr>
<tr>
<td>Security Services</td>
<td>Mar-11</td>
<td>Sep-11</td>
<td>Mar-12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Use Cases</th>
<th>Phase I Use Cases</th>
<th>Phase II Use Cases</th>
<th>Phase III Use Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labs to MDSS</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
</tr>
<tr>
<td>Immunizations to MCIR</td>
<td>Green</td>
<td>Green</td>
<td></td>
</tr>
<tr>
<td>Immunization History from MCIR</td>
<td>Green</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCDs to ED</td>
<td></td>
<td>Green</td>
<td></td>
</tr>
<tr>
<td>CCDs to Physician Offices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syndromic results to MSSS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicaid Eligibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lab Results Inquiry</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Funded Box: Items inside the box are funded by this State HIE Cooperative Agreement. Items outside the box would require additional funding from alternative sources to complete.

MiHIN Shared Services Deployment Strategy
The first phase (Pilot Phase I) will begin in October 2010. The projects are reportable lab results delivery to the Michigan Disease Surveillance System (MDSS) and immunization reports to the Michigan Care Improvement Registry (MCIR) and will end deployment phase in March and February 2011, respectively. In accordance with the deployment strategy, all projects will enter the three month pilot operations stage at that time, with the limited production stage to follow in July and June 2011 respectively. The phase I pilot projects are scheduled to enter production status in December and November 2011, respectively.
The second phase will begin in April 2011. Three use cases will be rolled out in this phase. The projects are Immunization History from MCIR, CCDs to Emergency Departments and CCDs to Physician Offices. The first project, immunization history from MCIR, will begin deployment in April 2011, enter pilot operations in October 2011, limited production in January 2012, and production status in June 2012. The second and third pilot projects, CCDs to Emergency Departments and CCDs to Physician Offices, will both start deployment in June 2011, enter pilot operations in October 2011, production in January 2012, and production status in June 2012.
4.4.3 Staffing

Staffing is expected to be minimal; our strategy relies on outsourcing all initial and future implementation and technical development activities. The new governance entity board will be responsible for hiring new staff for the MiHIN organization. It is estimated that five staff members will be needed by October 2010. By 2015, it is expected that eleven staff members will be needed.

4.4.4 MiHIN Shared Services Governance Staffing

The governing entity is expected to have an initial staff of five. Details of positions and hire dates can be found in section VI.B. All governing entity staff positions will be employees. The positions, roles, and dates of hire are summarized in the table below:

<table>
<thead>
<tr>
<th>Staff Member</th>
<th>Year of Hire</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Director</td>
<td>2010</td>
<td>Administrative</td>
</tr>
<tr>
<td>Administrative Assistant</td>
<td>2010</td>
<td>Administrative</td>
</tr>
</tbody>
</table>

4.4.5 Michigan HIT Commission Staffing

In its role in the coordinated governance structure, the Michigan HIT Commission will utilize staff to fulfill its roles and responsibilities. The positions, roles, and dates of hire are summarized in the table below.

<table>
<thead>
<tr>
<th>Staff Member</th>
<th>Year of Hire</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT Coordinator</td>
<td>2010</td>
<td>Administrative</td>
</tr>
<tr>
<td>HIT Specialist</td>
<td>2010</td>
<td>Administrative</td>
</tr>
<tr>
<td>Outreach Specialist</td>
<td>2010</td>
<td>Technical</td>
</tr>
</tbody>
</table>

Detailed estimates of costs can be found in the financial domain section.
4.4.6 MiHIN Shared Services Technical Staffing

The staff for implementation will consist largely of contracted vendor services and other consultants as appropriate. As pilot projects move toward production status, the ongoing operations will be handled by governing entity technical staff and vendor staff as appropriate.

For ongoing operations, the governing entity will hire employees. The positions and dates of hire are summarized in the table below:

<table>
<thead>
<tr>
<th>Staff Member</th>
<th>Year of Hire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager</td>
<td>2010</td>
</tr>
<tr>
<td>Business Analyst</td>
<td>2010</td>
</tr>
<tr>
<td>Customer Support Specialist (2)</td>
<td>2010</td>
</tr>
<tr>
<td>Technical Analyst</td>
<td>2012</td>
</tr>
<tr>
<td>Lead Technical Architect</td>
<td>2012</td>
</tr>
<tr>
<td>Lead Security Architect</td>
<td>2014</td>
</tr>
<tr>
<td>Lead Privacy Analyst</td>
<td>2014</td>
</tr>
</tbody>
</table>

During implementation, the deployment will be overseen by the MiHIN Shared Services Technical staff and with a contracted implementation team. The implementation team will be built up as appropriate, but initially it is anticipated that a lead project manager, a system architect and a business architect would be needed.

A variety of technical staff will be used as part of vendor solutions. These services may be contractual or bundled into the price of the solutions. Estimated requirements to implement use cases have been developed. These estimates are subject to change based on the actual vendor solution procured. Detailed estimates of labor-hours and costs can be found in the financial domain section.

4.4.7 Procurement processes and timelines
In July 2010, the governing entity will use the materials prepared in advance to rapidly evaluate and procure the hardware necessary to begin the phase I projects in the deployment plan.

The initial procurement of the phase one technology will be done by October 1, 2011. The deployment plan projects an October 1, 2010 start for phase one projects. Planning and vendor evaluation will occur throughout August and September 2010.

4.4.8 Contracting processes and timelines

Contracts for technology will be established by the MiHIN Shared Services Governance Board. The process for procuring and contracting will be determined by the new governing entity and implemented as an initial task once it is created in July 2010.

4.4.9 Standard operating procedures

Standard operating procedures will be developed during pilot deployments and limited production phases of our deployment strategy. Best practices will be reviewed and preliminary policy and procedure manuals covering the services to be deployed will be drafted. During the course of the phases, changes in implementation specifications will be monitored and their impact on the operational methodologies assessed. A production candidate set of operational policies and procedures will be validated during the deployment strategy limited production phases of service implementations. They will, in turn, be assessed and modified as required based on the experiences of the limited production phases.

There are two classes of operations guidelines: one for organization-wide operations that all services are likely to require (backup, disaster recovery, etc) and technology-specific operations guides (patient-identity remediation, etc). Organization-wide policies will be reviewed for necessary changes required by the addition of unique services. Specific guides will be developed when a service is deployed.

To ensure continuous improvement of process and realize the lowest operating cost possible, operational policies will be reviewed on a rolling quarterly basis, each policy being reviewed yearly. To realize efficiency gains, all specific policies will be analyzed yearly to discover any similarities that would enable a shared procedure and potential savings in money, time and/or labor.

Policies and procedures for business functions (such as accounting) will be established by the MiHIN Shared Services Governance Board.
4.5 Legal / Policy

This section of the operational plan provides the details associated with the approach toward creating the legal structure that will be responsible for the operation of MiHIN Shared Services and the steps required to ensure compliance with Federal and State Privacy and Security regulations.

4.5.1 Legal Steps for the Establishment of the Governance Structure

One of the key steps in the execution of this operational plan is the creation of the legal entity that is MiHIN Shared Services. Many of the decisions that are required to create the legal entity such as make-up of the Board of Directors, operational budget and staffing plan were made during the planning phase of this project. The next step is the creation of the legal entity that is MiHIN Shared Services.

The creation of this entity will be performed by a Michigan attorney skilled in the creation of not-for-profit organizations. It will be the responsibility of this attorney to use the results of the planning effort to create the bylaws and articles of incorporation that will be filed with the State of Michigan.

The creation of the legal entity provides the organizational structure that is required to apply to the Internal Revenue Service for not-for-profit status. While Health Information Exchange’s have been approved for not-for-profit status there are no clear guidelines for an organization to obtain the required status. Therefore it is expected that this process will take some time to complete.

4.5.2 Federal and State HIE Privacy and Security Policy Development

The MiHIN Shared Services Governance Board will appoint both a Privacy Officer and a Security Officer who will ensure compliance with all applicable federal and state laws, as well as providing state-wide leadership and guidance for Michigan’s sub-State HIEs. Additionally, due to Michigan’s shared international border with Canada and in consideration of Michigan’s colleges and universities the MIHIN Shared Services will also work to develop policies that address international laws as appropriate. The MiHIN Shared Services will build on the stakeholder policy recommendations to ensure that adequate Privacy and Security policies are in place.

In order to continue to foster state-wide participation and to promote consistency and communication among the sub-state HIEs, the MiHIN Shared Services coordinated governance structure will establish and manage two working committees made up of stakeholders, including representatives from specially protected health information groups and health plans. The work
groups will manage the Privacy and Security of the MiHIN Shared Services as well offering guidance and direction to the sub-state HIEs. The two committees are composed as follows:

- **MiHIN Privacy Committee**: made up primarily of Privacy Officers from each of the sub-state HIEs, along with other stakeholders and lead by the MiHIN Privacy Officer. The Privacy Committee, lead by the MiHIN Privacy Officer will assist in the development, drafting and implementation of all MiHIN Privacy policies for sub-State HIEs. The Committee will follow guidance from both the State and Federal government and will work with the sub-state HIEs to identify challenges and risks and develop mitigation plans to address them.

- **MiHIN Security Committee**: made up primarily of Security Officers from each sub-state HIE, along with other stakeholders and lead by the MiHIN Security Officer. The Security Committee, lead by the MiHIN Security Officer will assist in the development, drafting and implementation of all MiHIN Security Policies for sub-state HIEs. The Committee will follow guidance from both the State and Federal government and will work with the sub-state HIEs to identify challenges and risks and develop mitigation plans to address them.

The MiHIN Privacy and Security Committees will update the Strategic and Operational plans on an annual basis to evaluate the overall MiHIN Privacy and Security implementation, update policy and guidance recommendations as needed, review and update forms and agreements, and review and update the overall MiHIN Privacy and Security direction.

Covered Entities are required by the HIPAA Privacy and Security Rules to have Privacy and Security officers in place. In addition, under the new HITECH amendments, Business Associates are also required to have a number of HIPPA Privacy and Security policies in place. These federal requirements create a structure of Privacy and Security Officers that allow both guidance and feedback to flow. Under the leadership of the MiHIN Privacy and Security Officers, and the respective Privacy and Security Committees, appropriate safeguards will be in place to assure and assist state HIE participants in complying with state and federal legal policies and requirements. Privacy and Security Officers will both report regularly to the Executive Director of the MiHIN Shared Services and to the HIT Commission.

The MiHIN governing body will work with sub-state HIEs and with the State to coordinate federal initiatives. This will include health initiatives with the Department of Military and Veterans Affairs, Indian Health Services, as well as Medicaid and Medicare initiatives. The MiHIN Governance Board will provide guidance to assist sub-state HIEs with integration and alignment of relevant federal initiatives. Sub-state HIEs will work with a number of organizations in Michigan that support federal HIE and HIT initiatives, including:

- **Grand Rapids Veterans Nursing Home**: located in Grand Rapids, Michigan houses two units for Alzheimer’s, as well as one unit for dual diagnoses patients and operates domiciliary and nursing care.
• Dominic J. Jacobetti Veterans Facility- located in Marquette, houses one of Michigan’s first nursing units for Alzheimer’s disease and related disorders and operates domiciliary and nursing care.
• State Veterans Homes Board of Managers- Governance Board made up of Veterans who act in the interest of the veterans’ community in both advocacy and advisory roles related to the admission and member affairs at Michigan’s two veterans’ homes.
• Michigan’s Inter-Tribal Council- the Council’s Indian Health Services Comprehensive Field Health Division works to implement programs that improve the health status of Indian families- including communications of federal, state and local initiatives.

As the MiHIN Shared Services infrastructure and sub-state HIEs begin to develop and increase capacity for health information exchange, the Privacy and Security Committees will address issues on an incremental basis. Initially, the first task will be to create a Participation Agreement or Subscription Agreement for the sub-state HIEs in order to “connect” to the MiHIN Shared Services. The next task will be to review and refine the Privacy and Security Policy Framework developed by the Privacy and Security Work Group which includes:

4.5.2.1 Policy Direction: Informed Opt Out

Informed Opt Out recognizes that the HIPAA Privacy Rule allows for the sharing of Protected Health Information for purposes of treatment, payment and operations between Covered Entities. Based on that recognition, even if an individual “opts out” of data exchange, some identifiable health information will still be transferred electronically. The exceptions are listed below and apply to Direct Transfers, “Break the Glass” and Legally Mandated Reports.

This Policy recommendation includes a draft for a model Informed Opt Out form.

This Policy recommendation includes a draft of model language for insertion in Notice of Privacy Practices.

4.5.2.2 Policy Direction: Access

Access controls govern when and how a patient’s information may be accessed by authorized individuals via the MiHIN. This policy is designed to reduce unauthorized access and ensure information is used for authorized purposes.

4.5.2.3 Policy Direction: Authorization

Authorization is the process of determining whether a particular individual within a sub state HIE has the right to access Protected Health Information via the MiHIN. Authorization is subject to role-based access standards that take into account an individual’s job function and the information needed to successfully carry out a role
within the entities participating in the HIE. These requirements are designed to limit exchange of information to accomplish the intended purpose of the exchange, thereby allowing patients to have confidence in the privacy of their health information.

4.5.2.4 Policy Direction: Authentication

Authentication is the process of verifying that an authorized individual is who she or he claims to be. Sub-state HIEs using the MIHIN Shared Services will implement policies and procedures to verify that an Authorized User seeking access to electronic Protected Health Information is the person or entity he/she/it claims to be.

4.5.2.5 Policy Direction: Audit

Audits are oversight tools used for recording and examining access to information within an electronic health information exchange system. This policy is necessary for verifying compliance with access controls implemented to prevent/limit inappropriate access to information.

4.5.2.6 Policy Direction: Breach

Breach Notification requires sub-state HIEs and all their participating entities to notify individuals when unencrypted personal information was, or is reasonably believed to have been, acquired by an unauthorized person or a person without authority, including when a confirmed breach in the security of the system poses a significant risk of identity theft or other harm. (42 USC §17931)
5 SUMMARY / CONCLUSION

The MiHIN Operating Plan is the culmination of work that stakeholders across Michigan undertook with the initial strategies outlined in the 2006 Conduit to Care and furthered through the MiHIN Strategic Plan over the last six months.

This Operating Plan builds upon the development of sub-state HIEs over the past several years and leverages existing State of Michigan information technology systems by taking an incremental approach to deploying use cases and associated shared services that have been prioritized by stakeholders across the state.

This plan identifies the domain based activities, schedules and financial requirements for implementing the MiHIN Strategic Plan as well as the approach to governing and operating the MiHIN over the next four years.

Achieving cross-community exchange of patient information by deploying statewide shared services will enable and support the ability of Michigan’s providers to accomplish and demonstrate meaningful use while improving the ability of sub-state HIEs to access health information within and across State borders.

The ONC approval of this Plan will support the ability of stakeholders across the State of Michigan to participate in statewide HIE, the National Health Information Network (NHIN) and achieve the MiHIN vision of fostering the development of HIE that will reduce the overall cost of care while at the same time increasing quality of care and patient safety.
6 Appendices

Appendix 1 – Glossary of Terms and Acronyms

AHIC – American Health Information Community

ARRA – American Recovery and Reinvestment Act

CAM – Comparative Analysis Matrix

CDC, CDCP – Center for Disease Control and Prevention

CCD – Continuity of Care Document

CHAMPS – Community Health Automated Medicaid Processing System

COBIT - Control Objectives for Information and related Technology, a set of best practices (framework) for information technology management created by the Information Systems Audit and Control Association (ISACA), and the IT Governance Institute (ITGI) in 1996.

Conduit to Care – the product of a “180 day” partnership of a diverse set of Michigan’s health care and business stakeholders, aka Michigan’s eHealth Initiative

Connect Open Source - The Federal Government's open source implementation of a national health information network gateway (Source MiHIN Architecture Design document V 1.2.4

DICOM – Digital Imaging and Communications in Medicine

DURSA – (Data Use and Reciprocal Support Agreement) a comprehensive agreement that governs the exchange of health data across a diverse set of public and private entities.

EHR - Electronic Health Records

EMPI - Enterprise Master Patient Index (In this context, we are talking about an MPI for the state of Michigan.)

ER – emergency room

ESB - Enterprise Service Bus

FCC Rural Health Care Pilot – Project to connect rural health care providers in the state with high speed Internet
FQHC – Federally Qualified Health Centers

HHS - Department of Health and Human Services (Executive Department of US Federal Government)

HIT – Health Information Technology

HITECH - Health Information Technology for Economic and Clinical Health

HIE - Health Information Exchange

HIMSS – Healthcare Information Management Systems Society

HIPAA – Health Information Portability and Accountability Act

HISPC – Health Information Security and Privacy Collaboration

HITSP - Healthcare Information Technology Standards Panel

HL7 - Health Level Seven, an all-volunteer, non-profit organization involved in development of international healthcare; this term is also used to refer to some of the specific standards created by the organization (e.g., HL7 v2.x, v3.0, HL7)

IHE - Integrating the Healthcare Environment

IT – Information Technology

ITIL - Information Technology Infrastructure Library, a set of concepts and practices for managing information technology services, development and operations

JVHL - Joint Venture Hospital Laboratories

MCIR – Michigan Care Improvement Registry

MDIT – Michigan Department of Technology

MDSS – Michigan Disease Surveillance System

M-CEITA – Michigan Center for Effective IT Adoption

MiHIN - Michigan Health Information Network

MiHIN SSB - MiHIN Shared Services Bus
MPHI - Michigan Public Health Institute (Michigan non-profit organization focused on public health)

MPI - Master Patient Index

MSSS – Michigan Syndromic Surveillance System

MU – Meaningful Use

NHIN - Nationwide Health Information Network (An HHS Sponsored development effort to build a national health information exchange capability)

NHIN Direct - new initiative from the ONC trying to simplify the way a physician can meet meaningful use requirements with their electronic health record

NPP – Notice of Privacy Practice

OMB – Office of Management and Budget

ONC - Office of the National Coordinator for Health Information Technology

PCO – Program Control Office

PHI – Protected Health Information

PIX - Patient Identity Exchange (a transaction type)

PIX -PDQ - Patient Identification Exchange - Patient Data Query

REC – Regional Extension Center

RHIO – Regional Health Information Organization

RHITEC – Regional Health Information Technology Extension Center

RLS – Record Locator Service

SAML - Security Access Markup Language

SCP – New York eHealth Collaboratives Statewide Collaboration Process

SDE – State Designated Entity

SHIN-NY –State Health Information Network of New York
SOA - Service-Oriented Architecture

SOM – State of Michigan
Appendix 2 – Privacy and Security Policies

Access Policy

Access controls govern when and how a patient’s information may be accessed by authorized individuals via the MiHIN. These access policies are designed to reduce unauthorized access and ensure information is used for authorized purposes.

Policy: Access

- Authorized Users will access information via the MiHIN in accordance with all applicable policies, and state and federal laws and regulations.
- Sub-state HIEs will establish policies and procedures to ensure that access meets current security standards.
- Only Authorized Users shall access information via the MIHIN.
- Authorized Users shall be authenticated in accordance with the provisions of the Authentication Policy.
- Sub-state HIEs and their participating entities will have processes and capabilities in place to ensure accountability and enable identity of each user who has accessed patient information.
- All participating entities shall implement and enforce an accountability policy that meets state and federal legal and regulatory requirements.
- Authorized Users shall be prohibited from sharing their user names and/or passwords with others and from using the user names and/or passwords of others. The use of another's credentials to access the system is prohibited.
- Users are responsible for all activities related to their unique credentials.
- All breaches of credentials must be reported in a timely manner.
- Authorized Users who have access to electronic PHI via the MiHIN will be required to receive training on the access and authentication process and mechanisms required for their job function.
- Sub-state HIEs will meet security requirements under state and federal laws and regulations, and policies and procedures as determined by the MiHIN governing body.
- The MiHIN Governance entity will create and maintain a security workgroup that will recommend best practices and policies/procedures to the MiHIN.
• Sub-state HIEs and participating entities must manage their user accounts in accordance with MiHIN standards.

Authentication Policy

Authentication is the process of verifying that an authorized individual is who she or he claims to be. Sub-state HIEs using the MIHIN Shared Services will implement policies and procedures to verify that an Authorized User seeking access to electronic Protected Health Information is the person or entity he/she/it claims to be.

Policy: Authentication

• All participating entities shall implement and enforce a user authentication mechanism that meets state and federal law and regulatory requirements.

• Sub-state HIEs must authenticate, or must require their participating entities to authenticate, each Authorized User’s identity prior to providing any Authorized User with access to Protected Health Information (PHI) via the MIHIN.

• Authorized Users shall be prohibited from sharing their user names and/or passwords with others and from using the user names and/or passwords of others. The use of another’s credentials to access the system is prohibited.

• Authorized Users who have access to electronic PHI via the MiHIN will be required to receive training on the access and authentication process and mechanisms required for their job function.

Informed Opt Out Policy

The MiHIN will develop and implement minimum policies for sub-state HIEs and their participating entities to adopt in order to connect to the MiHIN shared services.

Policy: Informed Opt Out

This policy recognizes that the HIPAA Privacy Rule allows for the sharing of Protected Health Information for purposes of treatment, payment and operations between Covered Entities. Based on that recognition, even if an individual “opts out” of data exchange, some identifiable health information will still be transferred electronically. The exceptions are listed below and apply to Direct Transfers, “Break the Glass” and Legally Mandated Reports (the “Exception” situations).

• With respect to the other transfers of data, an individual will be given two choices:
  o Allow individually identifiable health information to be accessed by authorized users through the MiHIN, but only when that access is legally permissible.
Not allow access to individually identifiable health information, other than Direct Transfers, Break the Glass, and Legally Mandated Reports (the "Exception" situations).

- Standard language will be added to any NPP to inform the patient that individually identifiable health information will be accessed through the MiHIN unless they opt out (see attached).
- Regardless of the individual’s choice, individually identifiable health information may be stored by the sub-state HIE.
- Individually identifiable health information that is subject to additional, legally imposed special restrictions will only be used and/or disclosed in accordance with applicable laws.
- Individuals can change their minds and terminate their prior opt out decision.
- Consumer education materials will be provided to explain the benefits of access and what the decision to opt out of data exchange means with sufficient information to allow a consumer to make an informed choice. After an individual opts out, the individual may reverse that decision.
- The sub-state HIE and MiHIN levels will keep an electronic record of the decision.
- Contractual agreements will be required at the sub-state HIE and MiHIN level and will include provisions to protect patient privacy.
- To Opt Out, or to terminate a prior opt out decision, the individual will have to complete the Request to Opt Out Form (draft attached).

EXCEPTIONS

- **Break the Glass** – This refers to individually identifiable health information being accessed (break the glass) in emergency medical situations by authorized providers.

- **Direct Transfers** – This refers to individually identifiable health information being sent and received via the MiHIN by authorized providers with a treatment relationship to an individual, without the use of the RLS. Direct transfers only occur between authorized providers or between providers and Business Associates.

- **Legally Mandated Reports** – This refers to authorized providers sending individually identifiable health information via the MiHIN to a government agency for the purposes of complying with mandatory public health reporting requirements (if the authorized provider may make the disclosure without express consent of the patient).
Audit Policy

Audits are oversight tools used for recording and examining access to information within an electronic health information exchange system. They are necessary for verifying compliance with access controls implemented to prevent/limit inappropriate access to information.

Policy: Audit

- Sub-state HIEs and participating entities must ensure that the following information be recorded and maintained at the point of access for audit purposes:
  - The identity and time frame of each entity/individual that accesses or transmits information through the MiHIN.
  - The patient identification and the type of data accessed.
- Each sub-state HIE and participating entity must validate the integrity of the audit process. Audits must be conducted on a regular basis at least once a year at a minimum.
- Sub-state HIEs and participating entities will implement a system wherein, upon request, patients have a means of seeing who has accessed information about them via the MiHIN and when such information was accessed.
- All sub-state HIEs and participating entities must cooperate with the MiHIN and/or other sub-state HIEs with respect to any audits.
- All sub-state HIEs and participating entities must retain audit information for the time frame required by law.
- MiHIN and all sub-state HIEs will generate audit records for all security relevant events.

Authorization Policy

Authorization is the process of determining whether a particular individual within a sub-state HIE has the right to access Protected Health Information via the MIHIN. Authorization is subject to role-based access standards that take into account an individual’s job function and the information needed to successfully carry out a role within the entities participating in the HIE. These requirements are designed to limit exchange of information to accomplish the intended purpose of the exchange, thereby allowing patients to have confidence in the privacy of their health information.

Policy: Authorization

- Sub-state HIEs shall establish and implement policies, standards and procedures that:
  - Establish role definitions and rules for Authorized Users.
- Define the purposes for which Authorized Users in those roles may access Protected Health Information (PHI) via the MIHIN.

- Define the types of PHI that Authorized Users within such roles may access (e.g., demographic data only, clinical data).

- The purposes for which an Authorized User may access information via the MIHIN and the types of information an Authorized User may access shall be based, at a minimum, on the Authorized User’s:
  - Job function
  - Relationship to the patient

- Sub-state HIEs shall require their participating entities to assign roles to the individuals within their organizations who will be authorized to access information via the MIHIN. Sub-state HIEs and their participating entities may have additional roles, but they must map those roles to one of the eight roles listed below:
  1. Practitioner with access to all information and Break the Glass authority
  2. Practitioner with access to all information but no Break the Glass authority
  3. Non-Practitioner with access to all information
  4. Non-Practitioner with access to only non-clinical information
  5. Sub-state HIE administrator with access to only non-clinical information
  6. Sub-state HIE administrator with access to all information for the purpose of public health reporting
  7. System administration support and technical support access
  8. Sub-state HIE read only audit account

- Users with multiple roles will access data using the role that applies to the job function they are performing at the time.

**Breach Notification Policy**

Breach Notification requires sub-state HIEs and all their participating entities to notify individuals when unencrypted personal information was, or is reasonably believed to have been, acquired by an unauthorized person or a person without authority, including when a confirmed breach in the security of the system poses a significant risk of identity theft or other harm. (42 USC §17931)
Policy: Breach Notification

- The sub-state HIE and all their participating entities will abide by all applicable federal, state and local laws, rules and regulations pertaining to any security breach related to MiHIN.

- If a sub-state HIE or participating entity experiences a reportable security breach related to MiHIN they must immediately notify the MiHIN governance entity.

Note: These laws also apply:

- Michigan Identity Theft Protection Act 452 of 2004

- Michigan Social Security Privacy Act

- Federal "Red Flags" Rule, 16 C.F.R. § 681.2
  http://www.ftc.gov/bcp/edu/microsites/redflagsrule/more-about-red-flags.shtm
Appendix H: State of Michigan MiHIN Shared Services Strategic & Operational Plan Amendment 1.4
State of Michigan

MiHIN Shared Services
Strategic & Operational Plan
Amendment 1.4
November 2, 2010
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1 Introduction

This amendment to Michigan’s Strategic and Operational Plans that were submitted on April 30, 2010 for the Office of the National Coordinator for HIT (ONC) approval is in response to the Program Information Notice (ONC-HIE-PIN-001) issued on July 6, 2010. Guidance was issued from the ONC via email on July 14, 2010 that asked each state that had previously submitted plans to respond directly to the new criteria introduced in ONC-HIE-PIN-001. The July 14 guidance asked states that meet the new criteria but needed to supply new documentation to do so by August 1, 2010. Michigan falls into this category of needing to supply new documentation.

This amendment is meant to supply new documentation to the ONC to demonstrate Michigan’s compliance with ONC-HIE-PIN-001. The new guidance is separated into two categories; Strategic Plan and Operational Plan. The ONC guidance is listed at the beginning of each section in black text. Michigan’s response is under each new criterion in blue text and is also boxed.

In most cases, Michigan’s response points back to specific page numbers in the Strategic and Operational Plans. In cases where further documentation is needed, the additional documentation is available in the Appendices of this amendment and is noted in the blue and boxed responses.

The responses in this amendment should be considered supplemental information to what is given in the Strategic and Operational Plans that were submitted on April 30, 2010.

2 Strategic Plan

2.1 Environmental Scan

Within the strategic plan, the environmental scan shall include an overview of the current HIE activities within the state including the penetration of electronic lab delivery, e-prescribing networks and other existing HIE solutions.

Michigan has addressed this requirement in pages 7-11 of the MiHIN Shared Services Strategic Plan submitted to the Office of the National Coordinator on April 30, 2010.

To update the comprehensive environmental scan maps of the covered counties of each sub-state HIE initiative shown below. Only the sub-state HIEs are listed that are able to (or are planning to) provide the delivery of structured lab results directly to a provider EHR in order to meet meaningful use in 2011. Only the current coverage area is depicted, though nearly all sub-state HIEs report active plans to expand and cover further area in Michigan. Also, several sub-state HIEs are not bound by geography and can facilitate service to any area of the state. The Michigan HIT Coordinator will facilitate collaboration with Michigan’s Regional Extension Center to identify eligible providers that are not being met by a regional offering and provide information about the non-geographic HIEs.
The percentage of Michigan’s active, licensed providers that can be covered by the sub-state HIE is listed next to each initiative. In Michigan, there are approximately 29,000 active, licensed physicians (according to the 2009 Michigan Department of Community Health physician licensure study), which is the denominator for the percentage. The numerator is the number of licensed, active providers that could utilize the services of the sub-state HIE in order to meet the meaningful use requirements in 2011. The percentages are meant to illustrate the proportion of Michigan’s provider population that have at least one option for receiving service from a sub-state HIE to meet meaningful use criteria in 2011 (e.g., structured lab results directly to a provider EHR and the exchange of patient care summaries between unaffiliated providers).

The Capital Area RHIO currently covers 1200 of Michigan’s active, licensed physicians or 4.1% of the total physician population. The Capital Area RHIO is not bound to this geography and can provide services to other communities as requested.

The Jackson Community Medical Record currently covers 405 of Michigan’s active, licensed physicians or 1.3% of the total physician population.
My1HIE currently covers 18,000 of Michigan’s active, licensed physicians or 62% of the total physician population. My1HIE is not bound to this geography and can provide services to other communities as requested.

Michigan Health Connect currently covers 13,000 of Michigan’s active, licensed physicians or 44.8% of the total physician population. Michigan Health Connect is not bound to this geography and can provide services to other communities as requested.
In Michigan, not only does every provider have at least one choice for a sub-state HIE that has the capability to meet the Meaningful Use criteria in 2011, there are several areas that have multiple choices. This accounts for the more than 100% coverage of each sub-state HIE’s area. The table below sums up the amount of licensed active providers in the state and the proportion that are covered by a sub-state HIE that can meet meaningful use in 2011.

The Southeast Michigan HIE currently covers 15,000 of Michigan’s active, licensed physicians or 51.7% of the total physician population.

The Upper Peninsula Healthcare Network currently covers 850 of Michigan’s active, licensed physicians or 2.8% of the total physician population.
<table>
<thead>
<tr>
<th>Organization</th>
<th>Area of Michigan</th>
<th>Number of Providers</th>
<th>Proportion of Michigan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jackson Community Medical Record</td>
<td>South Central</td>
<td>405</td>
<td>1.30%</td>
</tr>
<tr>
<td>Capital Area RHIO</td>
<td>Central</td>
<td>1,200</td>
<td>4.10%</td>
</tr>
<tr>
<td>Upper Peninsula Health Care Network</td>
<td>Upper Peninsula and Upper lower</td>
<td>850</td>
<td>2.80%</td>
</tr>
<tr>
<td>Michigan Health Connect</td>
<td>West, Upper Lower, Central</td>
<td>13,000</td>
<td>44.80%</td>
</tr>
<tr>
<td>my1HIE</td>
<td>Southeast, central</td>
<td>18,000</td>
<td>62%</td>
</tr>
<tr>
<td>South East Michigan Health Information Exchange (SEMHIE)</td>
<td>Southeast</td>
<td>15,000</td>
<td>51.70%</td>
</tr>
<tr>
<td><strong>TOTAL COVERED WITH HIE OPTIONS</strong></td>
<td><strong>48,455</strong></td>
<td></td>
<td><strong>TOTAL PROVIDERS IN MI</strong> 29,000</td>
</tr>
</tbody>
</table>

*Many providers fall into the service area of multiple sub-state HIEs and therefore have more than one option.*
Structured Lab Results:

The baseline of sub-state HIE capabilities for the delivery of structured lab results is strong in Michigan. All six sub-state HIEs listed are either currently delivering structured lab results to provider EHRs or will be able to support this functionality in 2011. These services are provided by a combination of secured messaging, interfaces with EHR vendors and interoperability hubs. The standards that are being used are predominately HL7 and LOINC. Several sub-state HIEs are planning LOINC in the first through third quarters of 2011. The table below details the structured lab results delivery capabilities in Michigan.

<table>
<thead>
<tr>
<th>HIE Name</th>
<th>Currently Providing the Delivery of Structured Lab Results to Provider EHRs</th>
<th>If no, what quarter of 2011 will this be provided? (quarter &amp; year)</th>
<th>How is it/How will it be provided?</th>
<th>Standards in use/Planned to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jackson Community Medical Record</td>
<td>Yes</td>
<td></td>
<td>Secure messaging and interface engine</td>
<td>HL7, IHE and LOINC Planned for Q3 2011</td>
</tr>
<tr>
<td>Capital Area RHIO</td>
<td>No</td>
<td>Q4 2010</td>
<td>Interface engine</td>
<td>HL7, LOINC</td>
</tr>
<tr>
<td>Upper Peninsula Health Care Network</td>
<td>No</td>
<td>Q2 2011</td>
<td>Secure messaging and interface engine</td>
<td>HL7, LOINC</td>
</tr>
<tr>
<td>Michigan Health Connect</td>
<td>Yes</td>
<td></td>
<td>Secure messaging and interface engine</td>
<td>HL7, LOINC Planned for Q1 2011</td>
</tr>
<tr>
<td>my1HIE</td>
<td>Yes</td>
<td></td>
<td>Secure messaging and interface engine</td>
<td>HL7, LOINC, SNOMED</td>
</tr>
<tr>
<td>South East Michigan Health Information Exchange (SEMHIE)</td>
<td>No</td>
<td>Q3 2011</td>
<td>Secure messaging and interface engine</td>
<td>XDS-A, XDS-B - LOINC SNOMED planned for Q3 2011</td>
</tr>
</tbody>
</table>
Exchange of Patient Care Summaries:

The capacity for the exchange of patient care summaries across unaffiliated providers/organizations is strong in Michigan and will grow with the State HIE Cooperative Agreement program funding. In Michigan, the six sub-state HIEs are at differing levels of adoption readiness to meet the meaningful use requirements for 2011. The table below shows what each sub-state HIE is planning to meet meaningful use independent of the MiHIN Shared Services. Once the MiHIN Shared Services is in place, data from each sub-state HIE and state of Michigan public health sources can populate the summaries for a more complete patient summary.

<table>
<thead>
<tr>
<th>Sub-state HIE</th>
<th>Currently Providing the Exchange of Patient Care Summaries</th>
<th>If no, what quarter of 2011 will this be provided? (quarter &amp; year)</th>
<th>If yes, what Vendor. If you are not able, what steps are needed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jackson Community Medical Record</td>
<td>Yes</td>
<td></td>
<td>Using Integrated Healthcare Solutions</td>
</tr>
<tr>
<td>Capital Area RHIO</td>
<td>No</td>
<td>Q3 2011</td>
<td>Working with vendor - Axolotl - to generate patient care summary specifications consistent with Meaningful Use.</td>
</tr>
<tr>
<td>Upper Peninsula Health Care Network</td>
<td>No</td>
<td>Q2 2011</td>
<td>Currently in the vendor selection process. Implementing a contractual requirement to meet stage 1 meaningful use in 2011.</td>
</tr>
<tr>
<td>Michigan Health Connect</td>
<td>Yes</td>
<td></td>
<td>Using Medicity</td>
</tr>
<tr>
<td>my1HIE</td>
<td>Yes</td>
<td></td>
<td>Using Covisint &amp; Wellcentive</td>
</tr>
<tr>
<td>South East Michigan Health Information Exchange (SEMHIE)</td>
<td>No</td>
<td>Q3 2011</td>
<td>Received 2nd round Beacon Award, and SSA contract - in the planning stage for vendor selection for this functionality. Will have contractual requirements to ensure vendor meets stage 1 meaningful use in 2011.</td>
</tr>
</tbody>
</table>

Please refer to Appendix R for the full environmental scan of Michigan’s sub-state HIEs.

The environmental scan should include the following measures or similar measures to determine the health information exchange taking place with these important data trading partners:

- % pharmacies accepting electronic prescribing and refill requests
- % clinical laboratories sending results electronically
- % health plans supporting electronic eligibility and claims transactions
In the Strategic Plan, on page 7, an analysis of Michigan’s early adopters of HIT and HIE that was done to support the MiHIN planning process is briefly described. The entire analysis was fundamental to the decision-making of the MiHIN Workgroups and the project staff throughout the planning process. The qualitative findings of this analysis are discussed in the Environmental Analysis that was submitted in the Strategic Plan, but more detail, including the full report and the breadth of quantitative findings, was not included. Appendix B of this amendment contains the “Michigan HIT and HIE Technical Environment Analysis”, which is the full report containing all detail of Michigan’s current state and gap analysis.

Page 9 of Appendix B “Michigan HIT and HIE Technical Environment Analysis” details the current status of Michigan’s HIE and HIT functionality with this chart:

This chart shows Michigan’s initial metrics. The analysis that derived these metrics will be expanded as part of the State HIE Cooperative Agreement. As the reporting requirements are solidified, future analyses will include more scientific data collection methods and include data from national sources like Surescripts and federal partners like CMS.

An analysis of state government systems was also critical to the planning process, but was not provided in the Strategic and Operational Plans. This analysis is called the “State of Michigan Systems Technical Environment Analysis” and can be found in Appendix J. This analysis
looked exclusively at State of Michigan government systems that utilize clinical and/or administrative data and provides a full environmental scan of the State of Michigan systems and reaches the conclusion that several systems are able to be leveraged and have great potential to assist providers in meeting meaningful use and expanding statewide HIE capacity.

These systems include the State’s vital records systems, public health reporting and surveillance, corrections health systems, Medicaid and several others. This analysis was fundamental in the decision making of the workgroups that were formed and directly influenced Michigan’s focus on public health surveillance and reporting and Medicaid quality data.

After a first review of available data sources Michigan has determined the following data points. In determining the “% of pharmacies accepting electronic prescribing and refill request, Surescripts data from 2009 indicates that 98% of Michigan pharmacies have activated e-prescribing. See Appendix L for the Surescripts data. Michigan is committed to surveying all pharmacies for a more accurate number as part of the State HIE Cooperative Agreement in 2011.

In determining the “% of public health departments receiving immunizations, syndromic surveillance and notifiable laboratory results”, MDCH data indicates that 100% of Michigan’s 45 public health departments are receiving this data electronically from Michigan’s public health registries. See Appendix M for a full report and analysis.

In determining the “% of health plans supporting electronic eligibility and claims transactions”, the Michigan Association of Health Plans which has all health plans in Michigan as members except for Blue Cross Blue Shield of Michigan has indicated that 100% of the health plans operating in Michigan support electronic eligibility and claims transactions. Blue Cross Blue Shield of Michigan accepts electronic eligibility and claims transactions through their Web-Denis portal fully described in Appendix N. So, Michigan can report that 100% of health plans support eligibility and claims transactions. Further, those health plans that are participating as a Medicaid Health Plan are, by contract with Michigan Medicaid, required to support electronic claims transactions. More information about Michigan Medicaid Health Plans can be found at http://www.michigan.gov/mdch/0,1607,7-132-2943_4860---,00.html.

In determining the “% of clinical laboratories submitting results electronically”, Michigan turned to the MDCH laboratory licensing section and learned that Michigan has 7,444 CLIA certified clinical laboratories. The State of Michigan relies on CLIA certification and does not have a separate licensing or certification process. The contact data for all of the CLIA laboratories certified to perform in Michigan is kept with the Centers for Medicare and Medicaid. Michigan is currently in the process of requesting that data and will survey the clinical laboratories in Michigan in 2011 per the requirements of the ONC-HIE-PIN-001.

Michigan ran an analysis of trading partners with the state of Michigan’s laboratory information system. The analysis shows that 1,583 of trading laboratories receive or send results delivery via electronic means. It is not known at this time by which standard these results are received. Considering this is not a scientific survey, it is difficult to ascertain a true percentage of laboratories submitting results electronically.
Looking specifically at hospital laboratories, there are 138 in Michigan. Of these 138 it is estimated by the Joint Venture Hospital Laboratories (JVHL) that works directly with 126 of those hospital laboratories that 5% are sending results using LOINC coding. However, the JVHL provides a service to the 126 hospital laboratories by translating CPT codes into LOINC for the Healthcare Effectiveness Data and Information Set (HEDIS) quality reporting to state and national health plans.

The core of the JVHL services are intended to allow the 26 independent Michigan hospitals and laboratories that make up the JVHL to work together in the billing of claims and HEDIS result reporting for a wide array of different health plans. This includes working with over 35 distinct electronic data interchange (EDI) partners and the utilization of ANSI-HIPAA EDI file formats for the transmission of billable claim data and remittance information. More information on JVHL can be found in appendix Q.

The strategy of relying on sub-state HIEs to work directly with laboratories to electronically send and receive data will be key in reaching the small, local or specialized clinical laboratories in Michigan. Our strategy for bridging the gaps in clinical laboratories statewide is to pursue direct connections to the MiHIN Shared Services where appropriate with large, statewide clinical laboratories. With this two-tiered approach, Michigan will be able to demonstrate improvement in closing the gap.

2.2 Strategy to meet meaningful use

Strategic plans shall describe how the state will execute the state’s overall strategy for supporting Stage 1 meaningful use including how to fill gaps identified in the environmental scan. Specifically, states and SDEs shall describe how they will invest federal dollars and associated matching funds to enable eligible providers to have at least one option for each of these Stage 1 meaningful use requirements in 2011:

Overall Strategy for Ensuring Success in Meaningful Use

The strategy for ensuring that all Michigan providers have an option for at least one method of results delivery is to utilize and expand the reach of sub-state HIEs in Michigan.

One of the goals of the MiHIN Shared Services is to provide the technical, business and policy support for that will allow sub-state HIEs to thrive, expand and keep costs affordable to providers seeking meaningful use. By creating a suite of shared services that focus on identity management, record locator service and security, this allows for statewide HIE connectivity. The MiHIN Shared Services also allows sub-state HIEs to utilize the shared services to reach greater efficiencies and capabilities within their own areas of services. The MiHIN Shared Services Governance board will work directly with sub-state HIEs to determine what resources are needed for each sub-state HIE to connect to the MiHIN Shared Services and what resources are needed for sub-state HIEs to expand to provide greater functionality and choice for Michigan’s providers. Michigan’s strategy is to ensure that all of Michigan’s providers have the capability to meeting the first stage of meaningful use by providing resources from the State HIE Cooperative Agreement to assist where necessary and then looking toward the MiHIN Shared Services that would be needed for later stages of Meaningful use connectivity.
Beyond resources, Michigan will utilize other collaborative, contractual and policy mechanism to ensure that Michigan’s sub-state HIEs are successful in implementing and expanding technology and services to support the first stage of meaningful use.

For contractual mechanisms, the Michigan Department of Community Health, the recipient of the State HIE Cooperative Agreement funding, will include specific contract language in its agreement with the MiHIN Shared Services Governance board that requires the board to develop success criteria and the methodology to measure against the criteria before funding is provided to sub-state HIEs. This ensures that success is tracked and measured throughout the program. Only those initiatives that continue to show success will be provided with continued resources.

As part of the Medicaid strategy, MDCH will work closely with Medicaid to determine appropriate policies to incent successful sub-state HIE initiatives and further incent Medicaid providers and Medicaid health plans to participate in the successful sub-state HIEs.

Michigan will collaborate with all of the other ARRA HIT resources in the State to ensure that sub-state HIEs are successful. The Michigan HIT Coordinator will also work with Michigan’s Regional Extension Center – the Michigan Center for Effective IT Adoption (M-CEITA) to ensure that providers are aware of the sub-state HIE options and that the options are appropriately represented in every area of the state. Michigan will work with Beacon community selected in Michigan – the Southeast Michigan Health Information Exchange – to identify best practices and other useful resources to deliver to all other sub-state HIEs in Michigan.

The Michigan HIT Coordinator will be responsible for bringing the sub-state HIEs together on a regular meeting schedule to promote cross-learning, collaboration on developing shared resources and collect potential policy issues. The HIT Coordinator will be tasked with looking for other resources and opportunities to work with the sub-state HIEs to promote their continued success.

1. E-prescribing

As described in the Environmental Scan on page 10 (E-prescribing readiness) and through the offerings of sub-state HIEs described on pages 7-9 of the strategic plan and the analysis provided in Appendix B, Michigan’s providers currently have options for e-prescribing. To ensure that all of Michigan’s providers have at least one option for e-prescribing, Michigan will pursue two paths – expanding e-prescribing directly through sub-state HIEs and expanding e-prescribing through policies, incentives and other available market levers. To expand e-prescribing technology offered throughout the state, the MiHIN Shared Services will expand the coverage areas and technical capacity of sub-state HIEs in Michigan (described on pages 29-39 of the Strategic Plan). Every sub-state HIE that is operating in Michigan currently or plans to offer e-prescribing in the near future. See Appendix B for more information on sub-state HIE offerings in MI.
To expand e-prescribing through policy, incentives and other market levers, the HIT Coordinator will work with Michigan Medicaid to continue to examine policy levers and the operations of the EHR incentive program that can be utilized to encourage E-prescribing. Further, the Michigan HIT coordinator will work with existing coalitions of payers and other stakeholder to identify mechanisms for encouraging e-prescribing in Michigan to those providers that are not utilizing this service today.

The Michigan Primary Care Consortium is currently working on expanding e-prescribing in Michigan as a stated goal. The Michigan HIT Coordinator is already and will continue to work directly with the Michigan Primary Care Consortium to identify levers to make this goal a reality. See Appendix E for a full description of the Michigan Primary Care Consortium and a list of their stated goals and accomplishments.

The HIT Coordinator will also work closely with the Michigan HIT Commission to develop recommendations for specific action on promoting the availability and use of e-prescribing. The Michigan HIT Commission has representatives from pharmacies, pharmacists, pharmaceutical companies as well as payers, providers and hospitals which are important stakeholders in promoting e-prescribing. See pages 18-19 for more information on the composition of the Michigan HIT Commission.

2. Receipt of structured lab results

As described in the technical section of the Strategic Plan, pages 26-40, the proposed technical architecture for the MiHIN Shared Services is to connect Michigan’s sub-state Health Information Exchange initiatives together for statewide Health Information Exchange. The architecture is built upon functioning HIE initiatives at local levels. In Michigan, the first and most robust services offering of sub-state HIEs is the delivery of structured lab results (more detail is available in Appendix B “Michigan HIT and HIE Technical Environment Analysis” and Appendix R “Sub-State HIE Capabilities, Plans and Proportions Survey”).

At present, all of Michigan’s providers have or will have at least one option for receiving structured lab results (see the Environmental Scan on pages 1 through six to see the statewide reach of HIE in Michigan and Appendix R “Sub-State HIE Capabilities, Plans and Proportions Survey”).

Michigan has several sub-state HIEs that are not bound by geography and can provide services to communities throughout the state. If a sub-state HIE is not successful in providing the services to meet the criteria for exchanging structured lab results then a provider may choose to utilize one of the non-geography based sub-state HIEs to meet stage 1 meaningful use. The Michigan HIT Coordinator will facilitate collaboration with Michigan’s Regional Extension Center to identify eligible providers that are not being met by a regional offering and provide information about the non-geographic HIEs.

Michigan’s strategy is also work with the Joint Venture Hospital Laboratories (JVHL – see appendix Q) to determine the best policy and resources available to promote the use of LOINC
in Michigan's independent hospital laboratories. This could include providing training and technical assistance through the JVHL to these laboratories. Michigan will pursue working with JVHL to coordinate efforts and resources to ensure that the experience of JVHL will be leveraged to promote the use of structured lab result reporting in addition to the translation services that most sub-state HIEs are currently or planning to offer.

Through the MiHIN Shared Services Governance Structure (described on pages 15-21 of the Strategic Plan), further policy methods will be pursued to maximize available options for Michigan's providers. The HIT Coordinator will take responsibility for working with all relevant stakeholders to explore, recommend and implement policies, incentives or other market levers to ensure that Michigan providers have the capacity to receive structured lab results.

3. Sharing patient care summaries across unaffiliated organizations

The sharing of patient care summaries across unaffiliated organizations was found by Michigan's stakeholders through the MiHIN Shared Services planning process to be a high priority and is described in detail on pages 42 – 45 in the Technical domain of the Strategic Plan.

See page 7, environmental scan, and Appendix R of this amendment for Michigan’s baseline capacity for sharing patient care summaries across unaffiliated organizations.

Michigan's sub-state HIEs have been working toward this goal before it was a part of the first phase of meaningful use and therefore many are already prepared to offer this service to eligible providers to meet the meaningful use criteria. Michigan's strategy for meeting this requirement is to first empower MiHIN Shared Services governance to determine the appropriation of resources to sub-state HIEs to ensure that the exchange of patient care summary functionality is available to all of Michigan’s providers. Once patient care summaries are able to be exchanged to meet the first stage of meaningful use, the MiHIN Shared Services governance board will utilize the MiHIN Shared Services (as described in the technical domain of Michigan’s strategic and operational plans) to expand the data elements available to be incorporated into the patient care summaries. The goal is for a complete patient summary and this will require data elements from the state of Michigan public health systems, Medicaid, other payers and all sub-state HIEs. Michigan’s strategy is to ensure that all providers can meet the meaningful use requirements for the first year before implementing the statewide data sharing capabilities.

Michigan has several sub-state HIEs that are not bound by geography and can provide services to communities throughout the state. If a sub-state HIE is not successful in providing the services to exchange patient summaries across unaffiliated providers/organizations in 2011, then a provider may choose to utilize one of the non-geography based sub-state HIEs to meet stage 1 meaningful use. The Michigan HIT Coordinator will facilitate collaboration with Michigan’s Regional Extension Center to identify eligible providers that are not being met by a regional offering and provide information about the non-geographic HIEs.
States and SDEs should also describe a strategy and plan to address the other required information sharing capabilities specified in the FOA over the course of the project, including:

- Building capacity of public health systems to accept electronic reporting of immunizations, notifiable diseases and syndromic surveillance reporting from providers;

Expanding the capacity of Michigan’s robust immunization reporting, notifiable disease and syndromic surveillance systems was found to be a top priority for Michigan’s stakeholders through the MiHIN Shared Services planning process.

As outlined in the Strategic and Operational Plans submitted in April 2010, several of the Michigan Department of Community Health’s systems will be enhanced to support eligible providers (EPs) and hospitals achieve meaningful use (see chart below, Figure 1 State of Michigan System Descriptions). The state of Michigan had already procured the necessary technologies and is currently working to adopt the necessary standards to allow all EPs and hospitals to meet the three meaningful use menu set measures that are aimed at improving population and public health.

Enabling bi-directional communication with the MDCH’s public health and Medicaid systems has long been an MDCH goal. Michigan has been working to implement standards based messaging in all of the public health systems since 2005. The details outlined below are consistent with the plans outlined in the Strategic and Operational Plan. No budgetary, governance or technical decisions have been made that differ from the information and strategy outlined in Michigan’s April 2010 submission. The information in this section is intended to support and add detail to the strategies and plans outlined in the Strategic and Operational Plans submitted in April 2010.
Currently, Michigan’s public health systems supporting meaningful use are functioning in accordance with the Meaningful Use adopted content exchange and vocabulary standards. Michigan will be ready to support providers in the first stage of Meaningful Use in 2011 in the following ways. The Michigan Disease Surveillance System (MDSS) provides a means for EPs and hospitals to submit electronic data on reportable lab results through HL7 2.5.1 using LOINC codes. The Michigan Syndromic Surveillance System (MSSS) will enable the capability of the EPs and hospitals to submit electronic syndromic data and the interoperability between certified EHRs using HL7 2.3.1 and HL7 2.5.1. The Michigan Care Improvement Registry (MCIR) will permit the electronic submission of immunization information to an immunization information system through the HL7 Standard Code Set and HL7 2.3.1 and 2.5.1. MDCH Bureau of Laboratories, laboratory information system, STARLIMS, will also be enhanced to send electronic lab results to certified EHRs using LOINC and HL7 2.5.1. EHR Incentive enrollment, payment, and meaningful use reporting will be streamlined by adding additional features and functionality to MDCH’s MMIS and Medicaid Data Warehouse.

However, to continue the bi-directional communication between the state of Michigan systems and Michigan’s providers and hospitals will be better supported by the MiHIN Shared Services by providing a single point of contact for health care providers to access and report to these systems.
systems. Though Michigan's public health systems will be ready for the first stage of meaningful use, the integration with the MiHIN Shared Services will provide a transport solution streamlining health information exchange between providers and public health that will likely be necessary for subsequent stages of Meaningful Use.

To streamline data exchange between health care providers and systems supporting meaningful use, the recently named State of Michigan Health Information Exchange (SOM HIE) will be created based on existing MDCH systems and offered as a service to the MiHIN. The SOM HIE is not a sub-state HIE as described in the Strategic and Operational Plans. The SOM HIE is the integration of all relevant MDCH systems to support bi-directional communication with Michigan's providers. SOM HIE will conform to the MiHIN Shared Services Interoperability Specifications, which meet NHIN standards, to enable integration with other sub-state HIEs, certified EHRs and NHIN.

The SOM HIE is a function of state of Michigan government and will therefore be operated and governed by the State of Michigan. The SOM HIE will collaborate fully with the MiHIN Shared Services Governance board. To ensure collaboration and coordination, the MiHIN Shared Services Governance Board includes two members from the SOM HIE (one from Medicaid and one from MDCH public health systems, as described in the Governance Section of the Strategic Plan). The SOM HIE has a steering committee that is made up program and technical leaders from MDCH and the Michigan Department of Technology, Management and Budget.

The development of the SOM HIE is an enterprise-wide approach that will not only enable MDCH to support stage 1 meaningful use but also it will enable mechanisms to capture clinical information in real-time, such as, birth defect and cancer data, to improve public health surveillance and disease management. The following table, Figure 2, illustrates the SOM HIE project milestones. This timeline is dependent upon the approval of the MiHIN Shared Services Strategic and Operational Plan.

<table>
<thead>
<tr>
<th>SOM HIE Milestones and Timelines</th>
<th>Target Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implement messaging gateways for meaningful use (receive immunizations, receive notifiable lab results, receive syndromic data)</td>
<td>December 2010</td>
</tr>
<tr>
<td>Complete requirements and design of SOM HIE</td>
<td>Early 2011</td>
</tr>
<tr>
<td>Implement security and messaging services to receive immunization information via MiHIN Shared Services</td>
<td>Summer 2011</td>
</tr>
<tr>
<td>MDSS receive notifiable laboratory results from sub-state HIEs</td>
<td>Late 2011</td>
</tr>
<tr>
<td>Implement XDS repository to send immunization histories via MiHIN Shared Services</td>
<td>Early 2012</td>
</tr>
<tr>
<td>STARLIMS send lab results via MiHIN Shared Services</td>
<td>Summer 2012</td>
</tr>
<tr>
<td>MCIR, MDSS and STARLIMS fully integrated with SOM HIE MPI</td>
<td>Late 2012</td>
</tr>
<tr>
<td>MCIR, MDSS and STARLIMS fully integrated with SOM HIE Provider Index</td>
<td>Early 2013</td>
</tr>
<tr>
<td>Combined Public Health and Medicaid data available in CCD format to health care providers via the MiHIN Shared Service</td>
<td>Late 2013</td>
</tr>
</tbody>
</table>
SOM HIE will include four main services; Patient Identity Service, Security Service and Query for Documents Service and provide a messaging gateway to the MiHIN Shared Services. The Patient Identity Service will use national standards (PIX and PDQ) and leverage the Master Patient Index (MPI) that is currently being integrated with the Medicaid Data Warehouse. The Security Services will use the national standards (mainly SAML) and integrate with the existing SOM Single Sign On and the Provider Index. The Query for Documents Service (aka Record Locator Service) will support XDS query and responses from two sources. This includes a web services server that early meaningful use providers will be able to use until the MiHIN Shared Services are readily available. SOM HIE will leverage and use an existing messaging gateway, Orion Rhapsody. Rhapsody will be interoperable with the MiHIN Shared Services allowing health care providers to send and receive public health information in an efficient and streamlined manner. (See diagram below)

The implementation of the SOM HIE will be aligned with the MiHIN Shared Services Operational Plan and the Michigan State Medicaid HIT Plan. Public health reporting integration with the MiHIN Shared Services will occur in a phased approach as stated in the operational plan. Each use case is strategically deployed with the core infrastructure needed for the electronic exchange. In phase one, the use cases deployed will be notifiable labs to MDSS and immunizations to MCIR. The core infrastructure that will be deployed to carry out these use cases are the MPI, Provider Directory and the security services. Sending immunization histories back to providers requires a query and response and therefore will be deployed in
coordination with the XDS registry or record locator service in the second phase. In the third phase, MSSS will receive syndromic information via the MiHIN.

More detail can be found on the following pages of the Strategic Plan: 35, 41-45, Operational Plan: 12-13, 34-36. Also, see Appendix J for a full analysis of capabilities and environmental scan of Michigan’s public health systems.

- Enabling electronic meaningful use and clinical quality reporting to Medicaid and Medicare.

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Michigan’s Medicaid program and the MiHIN Shared Services are working closely together to determine the best solutions for enabling electronic meaningful use and clinical quality reporting. As described on pages 12-14 of the Strategic Plan, there is a framework in place to continue working on common goals between these two programs, one of which is clearly defined as electronic quality and meaningful use reporting. Through this collaborative framework, Michigan Medicaid and the MiHIN Shared Services plan to address this capability over the course of the project. The Michigan HIT Coordinator will continue to work with federal partners to ensure that Medicare meaningful use and clinical quality reporting is addressed.

2.3 Coordination with Medicaid

Because of the importance of the Medicaid program in setting state level HIT policy, states and SDEs are required to describe their coordination with Medicaid in their Strategic Plans. The following activities are either required or highly encouraged and the activities adopted shall be reflected in the state HIE plan.

**Required Activities:**

1. The state’s governance structure shall provide representation of the state Medicaid program.

   In the MiHIN Shared Services Strategic Plan, on page 19, it is stated that Medicaid will have a seat on the board of the MiHIN Shared Services Governance Board. Also, the Director of the Michigan Department of Community Health, which houses the Michigan Medicaid program, is by state statute a member of the Michigan HIT Commission.

2. The grantee shall coordinate provider outreach and communications with the state Medicaid program.

   As outlined on pages 12-14 of the Strategic Plan, Michigan Medicaid and the MiHIN Shared Services are working together to coordinate efforts. Since submitting the Strategic and Operational Plans in April, the two programs have been also working with Michigan’s Regional Extension Center, M-CEITA, to do outreach and communications.
One example of this collaboration is the jointly hosted website www.michiganhit.org, which provides information, links and contact information for each of the ARRA funded HIT initiatives in Michigan.

Also, Medicaid, MiHIN and M-CEITA worked together to hold provider outreach sessions – a postcard that details this first round of outreach sessions is in Appendix C “Michigan Provider Outreach Sessions Postcard”. These sessions took place in May and June, and all of the information from each of the initiatives was presented. Archived video of the sessions are available at www.michiganhit.org.

Medicaid, MiHIN and M-CEITA plan to continue working together on provider outreach and communications. To ensure that these initiatives continue to collaboration on this and other actions, the HIT Coordinator has developed a coordination framework that is described on pages 12-14 of the Strategic Plan and further detailed on pages 12-13 of the Operational Plan.

3. The grantee and the state Medicaid program shall identify common business or health care outcome priorities.

Page 13 of the MiHIN Shared Services Strategic Plan details the efforts of the Michigan Medicaid agency and the State HIE Cooperative Agreement and the joint goals that have been developed collaboratively.

4. The grantee, in collaboration with the Medicaid program, shall leverage, participate in and support all Beacon Communities, Regional Extension Centers and ONC funded workforce projects in its jurisdiction.

Page 14 of the MiHIN Shared Services Strategic Plan and pages 12-13 of the Operational Plan outline the coordination strategy between all ARRA funded activities within Michigan. The Michigan HIT Coordinator is responsible for the coordination and identification of activity, resources or other leverage point. The Strategic plan focuses on collaboration between the Medicaid agency, the Regional Extension Center in Michigan and the State HIE Cooperative Agreement. There are currently no Beacon or workforce projects within Michigan’s jurisdiction. If/when new projects are awarded in Michigan; they will be added to the collaboration framework.

5. The grantee shall align efforts with the state Medicaid agency to meet Medicaid requirements for meaningful use.

The MiHIN Shared Services is committed to aligning with Michigan Medicaid to meet the requirements of meaningful use as stated on page 13 of the MiHIN Shared Services Strategic Plan. Also, the letter from the Michigan Medicaid Director, in Appendix A, clearly states the commitment to collaborate with the State HIE Cooperative Agreement and other HIT and HIE initiatives in the state.
Encouraged Activities:
6. The state’s HIE program is encouraged to obtain a letter of support from the Medicaid Director. If a letter of support is not provided, ONC will inquire as to why one was not provided and the lack of a letter may impact the approval of a state plan, depending on circumstances.

Though the Medicaid Director approved the submission of the MiHIN Shared Services Strategic and Operational Plan to the Office of the National Coordination through a vote on the MiHIN Governance Workgroup and through the Michigan HIT Commission as stated on page 1 of both the Strategic and Operational Plan, a letter of support is attached in Appendix A for completeness.

7. Conduct joint needs assessments.

The MiHIN Shared Services is committed to conducting joint needs assessments with the Michigan Medicaid program, specifically the Medicaid EHR Incentive program and Michigan’s Medicaid Management Information System. Through the planning phase of the State HIE Cooperative Agreement, Medicaid was a key partner in assisting in the environmental scan of private partners and of State of Michigan systems (Appendix B and Appendix J) and in participating in all of the planning workgroups. This made certain that the Michigan Medicaid needs were well represented in the Strategic and Operational Plans.

8. Conduct joint environmental scans.

For Michigan Medicaid’s State HIT Plan, the MiHIN Strategic Plan environmental Scan as well as the information contained in Appendix B and Appendix J were used to assess the current state in Michigan. Further, MiHIN and the Regional Extension Center worked with Medicaid to administer the survey found in Appendix D, “Medicaid EHR Provider Survey”. Over 10,000 surveys were sent out to Michigan’s Medicaid providers on May 7, 2010. Full results and analysis are anticipated in late August 2010.

9. Collaborate with the Medicaid program and the ONC-supported Regional Extension Centers to provide technical assistance to providers outside of the federal grant for Regional Extension Centers’ scopes of work.

Page 14 and 21 of the MiHIN Shared Services Strategic Plan details the foundation of coordination, support and collaboration between the Michigan Medicaid, Michigan’s Regional Extension Center (M-CEITA) and the MiHIN. It is the role of the HIT Coordinator to continually assess and improve the coordination between these programs. Further, the Medicaid State HIT Plan when it is finalized will further detail the coordination between Medicaid and the Regional Extension Centers and the State HIE Cooperative Agreement.
10. Leverage public help desk/call center contracts and services between the State HIE Program, Medicaid and the REC.

The State HIE program, Medicaid and the REC are committed to collaborating together to leverage help desks, call centers, informational resources and other services between all programs to ensure efficiency and coordination for Michigan’s providers and patients. The framework for collaboration (as outlined on pages 12-14 of the Strategic Plan) will be utilized to identify and determine the feasibility of potential leverage points.

11. Conduct joint assessment and alignment of privacy policies at the statewide level and in the Medicaid program.

The MiHIN Shared Services and the Michigan Medicaid program are committed to leveraging existing assets and are all committed to following statewide policies and standards as they emerge. As it is outlined on pages 50-55 of the Strategic Plan, the necessary statewide policy framework will be finalized throughout the course of this cooperative agreement and with Medicaid at the governance board and as a programmatic partner all policies will be aligned.

12. Leverage existing Medicaid IT infrastructure when developing the health information exchange technical architecture.

Pages 13, 14, 34, and 35 of the MiHIN Shared Services Strategic Plan address exactly how Michigan’s Medicaid Management Information System (called the Community Health Automated Medicaid Payment System or CHAMPS) will be utilized and leveraged by the state HIE technical architecture to ensure that it is interoperable statewide.

13. Determine whether to integrate systems to accomplish objectives such as making Medicaid claims and encounters available to the health information exchange and information from non-Medicaid providers available to the Medicaid program.

Michigan Medicaid and the MiHIN Shared Services will utilize the framework for collaboration described on pages 12-14 of the Strategic Plan to further explore this issue and make the appropriate determination.

14. Determine which specific shared services and technical services will be offered or used by Medicaid.

Michigan Medicaid and the MiHIN Shared Services will utilize the framework for collaboration described on pages 12-14 of the Strategic Plan to further explore this issue and make the appropriate determination.

15. Determine which operational responsibilities the Medicaid program will have, if any.
Michigan Medicaid and the MiHIN Shared Services will utilize the framework for collaboration described on pages 12-14 of the Strategic Plan to further explore this issue and make the appropriate determination.

16. Use Medicaid HIT incentives to encourage provider participation in the health information exchange.

It is the intent of the MiHIN Shared Services and Michigan Medicaid to ensure that Michigan’s providers who take advantage of the EHR incentives also take full advantage of the sub-state HIEs that are available throughout the state. Michigan Medicaid is working with the HIT Coordinator, the HIT Commission and the MiHIN Shared Services Governance board to examine which policies, financial incentives or other levers can be utilized to create this cross-participation a reality.

17. Collaborate during the creation of payment incentives, including Pay for Performance under Medicaid, to encourage participation by additional provider types (e.g. pharmacies, providers ineligible for incentives).

2.4 HIE Sustainability Plans

ONC recognizes the importance and challenges of developing a sustainable health information exchange capability. It is essential, therefore, that for the initial submittal of the Strategic Plan, that states and SDEs shall describe initial thoughts for sustaining HIE activities during and after the cooperative agreement period. It is important to consider how to achieve sustainability based on the model being pursued and to incorporate any work that has been done to test the market acceptance of revenue models. The primary focus of sustainability should be on sustaining information sharing efforts, and not necessarily the persistence of government-sponsored health information exchange entities. ONC anticipates that annual updates to the state plans will provide further developed approaches and activities for long-term HIE sustainability.

Pages 22 – 26 of the Strategic Plan and pages 16-21 of the Operational Plan detail the financial sustainability strategy for the MiHIN Shared Services. By examining the lessons learned from HIE initiatives around the nation throughout the MiHIN planning process, the MiHIN Finance and Governance workgroups found several success factors of financial sustainability that are planned to be part of the MiHIN Shared Services. First, the MiHIN Shared Services will provide a limited set of functions that have been identified by the primary customers as services that will demonstrate direct value. Second, the MiHIN Shared Services technology is designed to meet all requirements with the minimum amount of technology. Third, the direct customers of the MiHIN Shared Services will be the majority of the governing entity that makes business and technology decisions.
The result of these three factors is valuable services at low costs to the MiHIN Shared Services customers. Keeping costs low, implementing the minimum necessary and involving the primary customers in governance are key lessons learned that will improve the long-term sustainability of the MiHIN Shared Services.

As discussed in the page numbers referenced above, Michigan’s governance for the MiHIN Shared Services is primarily made up of direct customers – Sub-state HIEs and payers. Both of these stakeholder groups are the direct users of the MiHIN Shared Services. The long-term sustainability strategy is to have the direct customers thoroughly represented in governance of the technical and business operations decisions so that as new services and new costs are added they will be palatable because those paying are those that made the decisions. To add further “checks and balances” to ensure that the entire healthcare community (including consumers) are well represented, the coordinated governance model is balanced with the Michigan HIT Commission, which is described on pages 18 and 19.

Facilitating Services - If the state HIE effort is facilitating the statewide coverage of HIE services using a variety of exchange methods, the state plan shall describe preliminary plans for how sustainability of the HIE market in the state may be enhanced by state or SDE actions including any state policy or regulation. Specific plans for sustainability of any directories or authentication services offered at the state level by the grantee must be addressed during the course of the four-year program.

Pages 16-21 of the Operational Plan detail how Michigan will support the MiHIN Shared Services. In the first two years of implementation, the Cooperative Agreement funding will be utilized. As operations begin, the MiHIN Shared Services will be supported by customers – sub-state HIEs and payers. These customers are the majority on the MiHIN Shared Services Governance Board, which is the organization that is tasked with the full business plan (which includes the plan for sustainability) that has previously been established by the ONC and being due in February of 2011.

Directly Offering Services - If the state HIE effort is directly providing the services, the state plans shall provide preliminary but realistic ideas on who will pay for the services and under what mechanisms (e.g., per transaction fees, subscription models, payers receiving a percentage allocation based on their covered base) The state plan should also consider how program sustainability can be supported by state policy or regulation including payment reforms to incentivize demand for information sharing or contracting requirements to ensure participation of key partners such as labs and pharmacies.

The MiHIN Shared Services plans to provide direct services to sub-state HIE initiatives within the state and to Michigan’s payers. These services are outlined on pages 28-31 of the Strategic Plan. The MiHIN Shared Services is not planning to provide HIE services directly to providers, but instead providing efficiencies and leveraging purchasing power to provide sub-state HIEs with the necessary technologies to offer services to every provider in the state and connect to one another for statewide connectivity.

Pages 16-21 of the Operational Plan detail how Michigan will support the MiHIN Shared Services. In the first two years of implementation, the Cooperative Agreement funding will be
3 Operational Plan

3.1 Executing Strategy for Supporting Meaningful Use

For each of these areas, the Operational Plans shall:

- Outline a clear and viable strategy to ensure that all eligible providers in the state have at least one viable option in 2011;

Pages 32-26 of the Operational Plan describe the strategies for ensuring that all providers in the state have at least one viable option in 2011. Further, the information added in this Amendment in section 2.2 describes the more specific clear strategy for activities that have been introduced in ONC-HIE–PIN–001.

- Include a project timeline that clearly illustrates when tasks and milestones will be completed;

Pages 6-8 and 32-28 provide the project timeline that clearly illustrates tasks, milestones and interdependencies. The full project plan is available in Appendix F of this Amendment. It is important to note that the timeline in Appendix F is an initial draft, subject to change after a vendor is procured. After a vendor is put in place, the first deliverable of the vendor’s contract will be a highly detailed timeline that lists very specific tasks.

- Provide an estimate of all the funding required, including all federal funding and state funding, used to enable stage one meaningful use requirements;

Pages 17-25 of the Operational Plan provides estimates of all funding that is required for the MiHIN Shared Services – including state funding, private funding and federal funding. The only potential source of funding that was not included in the Operational Plan that was submitted on April 30, 2010 is funding from the Medicaid EHR program. In the Planning – Advanced Planning Document that Michigan submitted for approval from the Centers for Medicare and Medicaid, planning funding for the State HIE Cooperative Agreement was denied by the CMS region five office. At the time of this Amendment, the HIT Coordinator is currently working closely with Michigan Medicaid on the Implementation – Advanced Planning Document to ensure that funding from the EHR Incentive program for the State HIE Cooperative Agreement program is included effectively and appropriately.
• Indicate the role both in funding and coordination of the state Medicaid agency in achieving the state strategy;

The role for coordination with Michigan Medicaid is identified on pages 12 and 13 of the Operational Plan.

The role for funding with Michigan Medicaid is identified in this amendment in section 3.1 and will be further detailed when Michigan’s Implementation – Advanced Planning Document and the Medicaid State HIT Plan is finalized for approval.

• Identify potential barriers and risks including approaches to mitigate them; and,

Pages 9-12 of the Operational Plan detail potential barriers/risks to this project as well as the possible approaches for mitigation.

• Identify desired technical support and coordination from ONC to support the state strategy.

The level of technical support and coordination desired from ONC is addressed in this section of the Amendment. Michigan is requesting that ONC provide technical support and coordination throughout the Cooperative Agreement project period by sharing best practices from other states, holding regular information sessions, communicating frequently with the HIT Coordinator and providing clear expectations. Many of these support and coordination needs are well underway by the ONC and the technical assistance team. Michigan has benefitted from the informational sessions held via web-conference and the in person conference held in May of 2010.

3.2 Project Management Plans

State Operational Plans shall include a robust project management plan with specific timelines, milestones, resources and interdependencies for all the activities in the state’s HIE project. States and SDEs shall explain their project management approach including the project plan tasks that are managed by vendors in order for ONC to judge the comprehensiveness and the feasibility of the plans. State plans should also describe the change management and issue escalation processes that will be used to keep projects on schedule and within budget.

Appendix F of this Amendment contains a robust project management plan with specific milestones, resources and interdependencies. The project management plan in Appendix F is based on the information supplied in the Strategic and Operational Plans that were submitted to the ONC on April 30, 2010.
The project plan has two parts – first, the project plan for the planning phase and the project plan for the implementation phase. The planning phase project plan shows a 100% complete status. The implementation project plan shows an overdue status. The critical interdependency of the implementation project plan is the approval of the Strategic and Operational plans. The project plan was based on the expectation that Michigan would have approval of the Strategic and Operational Plans within eight weeks of submission which is by July 1, 2010. Once the plans are approved there will be new dates in the implementation project plan, but the sequence and duration of the tasks will remain the same.

It is important to note that the timeline in Appendix F is an initial draft with high level tasks. After a vendor is put in place, the first deliverable of the vendor’s contract will be a highly detailed timeline that lists very specific tasks.

Specific to the timing of the sub-state HIEs and when they will connect, our current project timeline includes sub-state HIEs to begin connecting early on in a phased approach. Also, as outlined in Appendix P and in section 3.4 of this Amendment, each sub-state HIE is at a different place in development. In the first use case pilot of this project, it is expected that two sub-state HIEs will connect. In the second use case pilot of this project it is expected that another 3 will be able to connect. By the end of this project, it is expected that all seven of Michigan’s currently operating sub-state HIEs will have the ability to connect to the MIHIN Shared Services.

The project management approach is outlined in the proposal for the State HIE Cooperative Agreement program that was submitted in October 2009. A summary is provided below:

“The MiHIN Program Office, created in May 2009, is a joint effort of MDIT and MDCH. The MiHIN Program Office has two focus areas—business needs and technical solutions—that work together to inform and present decision points to a Steering Committee made up of state government officials. The MiHIN Program Office will coordinate and align state government involvement in all ARRA HIT initiatives, including the Medicaid EHR Incentives, the Regional Extension Center, and HIT Workforce initiatives. The state HIT Coordinator leads the MiHIN Program Office.

In July 2009, Michigan selected a partnership between Dewpoint Inc. and Strategic Alliance Advisors (s2a) to manage and support implementation of the MiHIN. This team of business, technical, clinical informatics, and project management consultants will staff the MiHIN Project Control Office. The MiHIN Project Control Office will provide oversight management for ongoing project administration, maintaining scope and change control, release planning, release management, risk management, issue management, defect assessment, performance metrics for the Implementation contractor, and periodic participation in project strategy and direction as requested.”

The Michigan Department of Community Health will utilize the MiHIN Project Control Office contract for the purposes described above for the interoperability of the public health systems and Medicaid systems projects. The MiHIN Shared Services Governance Board may leverage
the MiHIN Project Control Office contract from the Michigan Department of Community Health in whole or in part for the work described above.

Two key components of the Project Control Office to keep the project on schedule and within budget are the issue resolution and change management processes outlined below. The issue resolution process is critical throughout all aspects of the project. An issue is an identified event that if not addressed may affect schedule, scope, quality, or budget.

An issue log will be maintained and updated with the following minimum elements:
- Description of issue
- Issue identification date
- Responsibility for resolving issue
- Priority for issue resolution (to be mutually agreed upon by the State and the Contractor)
- Resources assigned responsibility for resolution
- Resolution date
- Resolution description

Issues shall be escalated for resolution from level 1 through level 3, as defined below:
Level 1 – Project Managers
Level 2 – Executive Stakeholders
Level 3 – Executive Steering Committee

An issue is an event that requires an action plan to fix a problem that has occurred, or an uncertainty, stated as a question, which needs to be answered so necessary actions can be taken. Issues, or problems, are expected to occur during the course of a project. Any issue has the potential to affect the progress of the project if it goes unresolved, and it may jeopardize the achievement of project deliverables. Issue Management identifies project issues, ensures an owner is assigned, and sets a due date for resolution.

Issue Management provides a mechanism by which team members can surface, escalate, and resolve issues that jeopardize the attainment of a project milestone or causes significant project risk. A successful Issues Management process ensures that issues are documented and managed across the project consistently, and that timely and effective resolution and communication occur. The early detection and resolution of issues is a key project management role, and provides for open communication channels and aggressive approach by the team. If it is determined that in order for the issue to be resolved a change must be made to either scope, schedule or budget, the Change Management Process will be invoked.

The Change Management process is defined as the process to communicate, assess, monitor, and control all changes to schedule and budget. The change management procedures will handle such things as “out-of-scope” requests or changing business requirements while the project is underway.

Throughout the life of a project, new requirements may be discovered, deliverables may change, and sometimes reasons to make adjustments to the scope of work are identified. Although change is inevitable, a structured Change Management process, when implemented properly and executed consistently, can aide in setting, managing, and more importantly, meeting, stakeholder expectation. The rigorous implementation of a Change Management process is an essential component in controlling the scope of the project. Managing changes to the baseline project schedule is accomplished by incorporating only vital changes, which are
documented and approved through the change control process. This is an iterative process which is triggered through the submission of change requests.

The purpose of a Change Request is to document, track, and control any changes to the project or adjustments to the agreed-upon scope of work for the project. A change may or may not impact the cost or schedule of the project. The Change Request provides a documented trail of changes, and provides information for the assessment of time, resource availability, and cost impact of the change (if any). Change Requests may also be used to document the removal of functionality or a reduction in cost.

The project team members will submit a Change Request under the following circumstances:

- Changes relative to a project schedule variance
- Changes relative to project revenue or cost variance
- Change relative to potentially missed project schedule milestones
- Change that has significant impact on the project scope
- Changes relative to significant technology considerations

Copies of the change management, issue escalation, risk management plan, and communication plan are attached in Appendix G called “Project Management Documentation”.

3.3 Risk Assessment
Managing risk is an important element of successfully building HIE capacity to support meaningful use. Within their Operational Plans, States and SDEs shall identify known and potential risks and describe their risk mitigation strategies. Risks should be prioritized using risk severity and probability. Examples of risks that may be included are: changes in the HIE marketplace, evolving EHR and HIE standards, lack of participation of large stakeholders including Medicaid, breach of personal health information.

The MiHIN Shared Services Operational Plan contains a complete risk assessment that prioritizes the probability, details the impact of the risk and provides mitigation strategies on pages 9 through 12.

3.4 HIE Architecture and Standards
Within the operational plans, States and SDEs shall describe the technical approach taken to facilitate data exchange services within the state based on the model being pursued.

Pages 29-36 of the Operational Plan and Pages 26-38 of the Strategic Plan detail the approach Michigan is taking to facilitate data exchange services statewide.

Michigan will build a master patient index by using proven MPI technology that integrates multiple data feeds to identify matches and potential matches for patient identity. Building off of the core concepts of the MiHIN Shared Services which is to utilize the rich expertise of Michigan’s sub-state HIEs, the initial data feeds will come from the sub-state HIEs. The plan is to incrementally add new data feeds as they become available, for example, from Michigan’s payers. With data from payers and sub-state HIEs nearly all Michigan citizens will be covered.
The only citizen that would not be eventually covered would be a citizen that has never had insurance (including Medicaid) and has never had a medical encounter in the vast majority of Michigan's health care system that participates in a sub-state HIE.

It is recognized that a more authoritative, comprehensive data feed would be preferable. Michigan explored all other avenues for data feeds to the MPI. Michigan is currently exploring the use of the Michigan Care Improvement Registry, which has uniquely identifies 6.5 million of the 10 million citizens. As outlined on page 22 of Appendix J of this amendment, the Michigan HIT Coordinator is pursuing clarification as to the conditions of MCIR's use in the MPI.

Also of note, Michigan explored using the extensive data from the Michigan birth registry which is populated with Michigan's vital records data. After a review of state law, it was found that there are legal restrictions on utilizing this data that would prohibit its use for a statewide MPI. It is the goal of the Michigan HIT Coordinator to continue to explore this current state law to determine what potential legislative remedies potentially exist.

To support the Master Provider Index – again, Michigan will utilize the provider indices of the sub-state HIEs and the provider index information of Michigan's Bureau of Health Professions Licensing system. The bureau of health professions licenses/regulates 32 healthcare occupations in Michigan. Since nearly all provider types are included in the information supplied by the Bureau of Health Professions, it is unlikely that there will be providers that are not covered in the Master Provider Index. Further, the Bureau of Health Professions is nearly complete on a “One-Source-Credentialing” project that will greatly assist providing information to the MiHIN. Please see appendix O for a summary of the Michigan One Source Credentialing project.

The technical architecture in Michigan was developed and fully supported by the sub-state HIEs in Michigan. See appendix P for the sub-state HIE applications to be a part of the MiHIN Governance Board. These applications provide direct attestation from sub-state HIEs that they will commit to support financially and with resources the MiHIN Shared Services. It is clear in the technical specifications provided in the Strategic and Operational Plans as well as this amendment that the proposed MiHIN Technical Architecture will require specific pieces of technology within each sub-state HIE. The sub-state HIEs will receive funding as part of the State HIE Cooperative Agreement to cover the implementation of these pieces of technology. The cost of maintaining this technology in each sub-state HIE will likely be a part of the long-term financial sustainability plan that is due to ONC in 2011. The technology proposed is relevant to the sub-state HIEs and is scalable to meet the sub-state HIEs needs today and in the future. The sub-state HIEs have also found value in the proposed technology as evidenced by their attestation to support the MiHIN, as found in Appendix P.

Throughout the implementation process Michigan will actively pursue making the identity management directories available to other initiatives in order to fully enable a statewide identity management service that can serve multiple known or emerging needs.

As indicated in Appendix P, Michigan’s sub-state HIEs are in varying states of readiness. Each sub-state HIE that is seeking to be a part of the governance board has been asked to fill out a
form that shows their technical readiness at a high level. As it shows in Appendix P, two of Michigan’s sub-state HIEs are currently ready with an XDS repository. Three have indicated that an XDS repository is part of their implementation plan and are currently preparing to implement this technology. Another two have indicated that the XDS repository is now part of their plan since the MiHIN Shared Services Planning process and are currently in the planning process. The MiHIN Shared Services Budget, found in the Operational Plan submitted on April 30, 2010, includes funding for sub-state HIEs to support the deployment of their XDS repository technology.

The implementation of a Record Locator Service is important to Michigan’s goal for statewide health information exchange. During our extensive planning process, Michigan’s stakeholders looked at current national standards, particularly those that are involved in NHIN. The XDS standard was selected to support the Record Locator functionality because of its use in NHIN and because it is important to Michigan’s stakeholder to use national standards and be compatible with NHIN.

Though it may not be directly applicable to stage 1 Meaningful Use, having a standards based Record Locator Service is likely to be necessary for subsequent stages of Meaningful Use as well as to meet our stakeholder goals for quality and safety. The XDS implementation proposed in Michigan’s Strategic and Operational Plan is a very narrow test of the XDS standard - it was meant to be a test of the public health use cases. On page 27 of the Strategic Plan submitted on April 30, one of the technical architecture guiding principles states that Michigan will “Comply with the latest interoperability standards but be practical enough to get something working.” If XDS is a standard that is not practical enough to implement, then it would be within our guiding principle framework to make a change.

Michigan’s strategy is to prioritize activity to 1) ensure that all providers have at least one option for the first stage of meaningful use through a sub-state HIE and then 2) implement functionality that may be necessary to meet subsequent stages of Meaningful Use and that add value to the healthcare community. Considering that Michigan already has a solid baseline for HIE services, it is anticipated that the first priority will be completed in the third quarter of 2011. Then, the second priority of adding and enhancing the services offered will begin in the fourth quarter of 2011. This strategy will build up the base of robust HIE at a local level by working with sub-state HIEs to meet all Meaningful Use requirements in a way that makes their services reliable, affordable and valuable to all providers in the state. Once there is a strong base for HIE in Michigan, then advanced services (like leveraging XDS to support the Record Locator Service functionality and others) become relevant, useful and a value-add to Michigan’s providers.

- Facilitating Services - If the state HIE effort is facilitating the statewide coverage of HIE services using a variety of exchange methods, the state plans shall describe the approach of obtaining statewide coverage of HIE services to meet meaningful use requirements and also the processes or mechanisms by which the state or SDE will ensure that the HIE services comply with national standards.
• Directly Offering Services - If the state HIE effort is directly providing or provisioning services (including shared directories or provider authentication services) the state plans shall provide either the detailed specifications or describe the process by which the detailed specifications will be developed. For those plans that don't have a detailed architecture, the updated Notice of Award for implementation will have a requirement to provide the detailed plans at a later date.

The MiHIN Shared Services is planning to provide shared directories and so the detailed specifications and the process for further defining specifications can be found on pages 26-38 of the Strategic Plan. As part of the MiHIN Shared Services planning process, detailed specifications were drafted and are available in Appendix H "MiHIN Shared Services Interoperability Specifications" and Appendix I "MiHIN Security Architecture and Requirements."

The approach for developing these detailed standards and specifications included subject matter experts and a workgroup made up of technical experts from a diverse array of Michigan's healthcare systems (described on page 65 of the Strategic Plan). Also, a “Vendor Technical Collaboration Team” was created so that HIT and HIE vendors could provide specific input to standards and specifications that would create a highly interoperable technical environment. To mitigate any conflict of interest in potential procurement processes, the State of Michigan did not sponsor the Vendor Technical Collaboration Team. More information about the Vendor Technical Collaboration Team can be found in Appendix K.

The use of standards to support HIE enabling technology is a critical aspect of this program and needs to be part of a longer-term framework to support interoperability. Due to the evolving nature of health information technology, standards, requirements related to meaningful use, and standards adoption, there should be an explicit mechanism specified in state plans that ensures adoption and use of standards adopted or approved by the Department of Health and Human Services (HHS) as well as the appropriate engagement with ONC in the ongoing development and use of the NHIN specifications and national standards to support meaningful use. The plans should also explain how the states will encourage any vendors or service providers to follow national standards, address system modularity, data portability, re-use of interfaces, and vendor transition provisions.

The MiHIN Shared Service Operational Plan addresses the specified issues on pages 29-31 and 38-39. Michigan is committed to engage ONC in the ongoing development and use of NHIN specifications and national standards to support meaningful use. Further, the guiding principles listed on page 16 for Governance and on page 27 for Technology specifically address strong commitment to utilize national standards in Michigan. Appendix H "MiHIN Shared

Services Interoperability Specifications” illustrates Michigan’s proposed reliance on national standards. The procurement process will require MiHIN Shared Services vendors to follow national standards and interoperability principles.

Michigan, through the Michigan HIT Coordinator, will continue to examine potential policy levers and work directly with technology stakeholders and trade organizations to find effective ways to encourage all vendors or services providers to follow national standards and interoperability principles. The Michigan HIT Commission has technology vendor representation and as part of the MiHIN Coordinated Governance Structure will be a key resource to developing such policies.
3.5 Privacy and Security

Within the Operational Plans, States and SDEs shall develop and fully describe their privacy and security framework including the specific policies, accountability strategies, architectures and technology choices to protect information. The state privacy and security framework shall be consistent with applicable federal law and policies. To assist the states, ONC will provide guidance on security and privacy policies and programs in the near future. The state plan shall contain a description of the analysis of relevant federal and state laws as related to HIE and the plans for addressing any issues that have been identified. If an analysis hasn’t been done, the state or the SDE shall provide a description of the process and the timeline for completion. Furthermore, states should describe the methods used to ensure privacy and security programs are accomplished in a transparent fashion. If a complete framework is not available, the state or the SDE shall describe the process they will use to fully develop such a framework.

On pages 47-55 of the Strategic Plan and pages 40-44 of the Operational Plan Michigan lays out a privacy and security framework that will evolve overtime. A full analysis of state and federal laws that pertain to health information exchange can be found in section 6.2 Appendix: Comparative Analysis Matrix in the Appendix of the Strategic Plan. The findings from this analysis are address on pages 51-55 of the Strategic Plan. Appendix 2 of the Operational Plan offers detailed privacy and security policies that address access, authentication, individual choice, audit, authorization and breach. This framework will continue to develop as described on pages 40 – 41 of the Operational Plan.

The technology sections of the Strategic and Operational Plans illustrate Michigan’s technology choices and considerations regarding privacy and security. See pages 29-31 of the Operational Plan and pages 26-39 of the Strategic Plan for more details. Appendix I of this amendment “Michigan Information Security Architecture and Requirements” also provides detailed security specifications, technology choice considerations and requirements.
August 1, 2010

David Blumenthal MD, MPP
National Coordinator for Health Information Technology
Department of Health and Human Services
200 Independence Avenue, S.W.
Washington, DC 20201

Dear Dr. Blumenthal:

I am writing this letter to express my strong support for and coordination with the Michigan Health Information Network (MiHIN), which is the name of Michigan’s project under the State Health Information Exchange Cooperative Agreement.

In Michigan, the Medicaid Agency is part of the Michigan Department of Community Health, which is the prime applicant on the State HIE Cooperative Agreement. As such, Michigan’s Medicaid Agency has been supportive with direct involvement in the MiHIN from its beginning in 2005.

Medicaid has been at the table when health information technology is planned and implemented statewide in Michigan and locally, as well. Michigan Medicaid has taken a policy stance that supporting Health Information Technology and HIE is right for our beneficiaries, our providers and our entire state.

To put this policy into action, Michigan Medicaid has historically offered incentives for Medicaid health plans to participate in local Health Information Exchanges and has been actively encouraging e-prescribing in Michigan. Michigan Medicaid is working closely with the MiHIN to respond to all HIT opportunities under the American Recovery and Reinvestment Act of 2009 in a coordinated manner. As Michigan’s Medicaid Director, I have assigned top staff to explore options for leveraging resources, funding and other policy levers to promote HIT and HIE throughout Michigan. Further, I am prepared to ensure representation from Medicaid on the MiHIN governance board.

I am pleased with the progress and stated direction of the MiHIN and Michigan Medicaid is committed to working with all partners to guarantee success.

Sincerely,

[Signature]

Stephen Fitton, Director
Medical Services Administration
Appendix B: State of Michigan HIT Adoption Analysis
6 Appendix C “Michigan Provider Outreach Sessions Postcard”
7 Appendix D “Medicaid EHR Provider Survey”
The Michigan Primary Care Consortium (MPCC) is a collaborative private/public partnership of organizations committed to improving the delivery of primary healthcare in Michigan and to rebuilding the primary healthcare workforce. The Consortium was organized in 2006 in response to an invitation from the Chronic Disease Division of the Michigan Department of Community Health to primary care stakeholders to collaborate in resolving the system level barriers that were impeding the consistent delivery of effective chronic illness and preventive care in primary care settings.

Since 2007, the Consortium has promoted the transformation of primary care practices to patient-centered medical homes. The Improving Performance in Practice (IPIP) project has provided insight into the difficulties and successes experienced by primary care practices while implementing the model. In 2010, MPCC workgroups are completing initiatives in three major arenas: practice transformation, engagement of consumers of healthcare, and rebuilding the primary care workforce.

A basic assumption of the Consortium is that transformative changes in complex systems are best accomplished through the collaborative efforts of all key stakeholders. MPCC members have a vested interest in primary healthcare and/or health system change and affirm the Mission, Vision, and Guiding Principles of the MPCC. MPCC’s members represent diverse organizations:

- Physician organizations and physician hospital organizations
- Businesses and other purchasers of healthcare
- Insurance companies and healthplans
- Professional associations
- Academic programs
- Michigan Department of Community Health
- Quality improvement organizations
- Others

MPCC members are involved in various activities to achieve the overall objective:

**Comprehensive, coordinated, whole-person care that is adequately reimbursed will be available in every primary care setting in Michigan**

To accomplish this overall objective, the following activities are taking place.

**MPCC Workgroups:** The MPCC white paper series: “Primary Care is in Crisis” provided a framework and recommended actions for three primary areas of focus. Work groups are implementing action plans for nine objectives in 2010. The nine objectives include:
**Michigan IPIP Program:** Improving Performance In Practice or IPIP is a primary care practice transformation program that combines learning sessions with coaching to implement components of PCMH and chronic illness care.

**Michigan Definition of PCMH:** Michigan health plans, insurance companies and primary care professional associations came to consensus on a MI Definition of PCMH based on the Joint Principles of the Patient-Centered Medical Home with four Michigan footnotes.

**Health Plan Incentive Programs:** Michigan payers agreed that beginning in 2010, they would include three specific PCMH components in their incentive programs: extended access, e-prescribe, and registry use. Additional measures are under consideration for 2011.

More information is available at [www.mipcc.org](http://www.mipcc.org)
9 Appendix F “MiHIN Shared Services Project Plan”
10 Appendix G “Project Management Documentation”
11 Appendix H “MiHIN Shared Services Interoperability Specifications”
12 Appendix I “MiHIN Information Security Architecture and Requirements”
Appendix J “State of Michigan Systems Technical Environment Analysis”
The consulting team S2A is now accepting nominations to the MiHIN Vendor Technical Collaboration Team. Nominations will be accepted for both vendor and stakeholder members to the MiHIN Vendor Technical Collaboration Team. While the work of this team will be presented to the MiHIN Technical Workgroup for approval to be included in the MiHIN Architecture Design this is not a State of Michigan sponsored activity. The work of this team will be facilitated by the S2A consultants.

We will hold open nominations for 10 working days from the date of posting on the MiHIN website. Once the 10 days are up we will select the team and begin work. However we will accept additional nominations after the initial period.

Background: Any project with the scope of the MiHIN requires collaboration and involvement from numerous parties. To provide guidance to the project, the current MiHIN leadership is forming workgroups for Governance, Business Operations and Technical Specifications. There will also be sub-workgroups for Privacy and Security, Finance and Performance Measurement. One of the goals of the Technical Workgroup is to develop the system architecture and standards that can be implemented into highly interoperable infrastructure. While following national standards are very important they are not sufficient to implement the necessary infrastructure. Because most national standards are architecture agnostic they fall short of being true implementation specifications.

A successful approach used in other Health Information Exchange (HIE) projects is to engage both stakeholder IT resources and a broad base of Health Information Technology (HIT) and HIE vendors in the design and standards setting process. We are calling this team the Vendor Technical Collaboration Team. In some HIE projects this team might be merged with the Technical Workgroup. However to mitigate any conflict of interest we have decided that we should keep this team separate from the MiHIN Technical Workgroup which will be creating requirements that would eventually become part of an RFP that some of these vendors might bid on. The work of this team will ensure that any design work done by the Technical Workgroup can be implemented by a large majority of the HIT and HIE vendors.

Charter: The focus of this Vendor Technical Collaboration Team will be to assist the MiHIN Technical Workgroup and the Project Control Office (PCO) in the development of the MiHIN Backbone architecture, interoperability standards, system security, shared services definition and implementation.

Why do we need a Vendor Technical Collaboration Team?

- The nature of this project is to create a backbone and state-wide Health Information Exchange infrastructure that is capable of allowing any vendor to interoper as long as they follow national and state-wide standards
- The success of this backbone hinges on its ability to interoperate with broad array of stakeholder and vendor systems.
- While there are some national standards most of them are developed to be vendor and architecture agnostic. Applying these standards to a particular architecture takes significant work.
• By getting a number of vendor organizations to develop a consensus on how to implement specific functions and services of the backbone we ensure higher interoperability and encourage more competition for specific services going forward.
• There is strong precedence for this at the national and at state levels.
• The ONC is looking for states and regions to develop standards and submit them for national review and acceptance.

Goals of the MiHIN Vendor Technical Collaboration Team

To assist the MiHIN Consultants in:

• the design of the MiHIN Backbone technical architecture
• recommending approaches for the implementation of the backbone
• defining the interoperability standards that should be implemented for the backbone and the integration with all community HIE organizations and EHR vendors
• the definition of the terminology (nomenclature) standards that should be implemented for the backbone
• the development of security standards and processes for the backbone
• the development of shared services definitions and technology deployment
• assisting in the backbone implementation and testing during implementation

Participants

• Co-chairs and Voting Members of the MiHIN Technology Workgroup
• MiHIN Project Control Office Consulting Team (Team Leadership)
• Key State of Michigan Department Staff
• Backbone or HIE Vendors Technical Staff
• EHR Vendors Technical Staff
• Select technical resources from stakeholder organizations

Process for Forming the Vendor Technical Collaboration Team

The Vendor Collaboration Team will be assembled and facilitated by the MiHIN Dewpoint/S2A consulting team. The selection process will encourage broad vendor participation to meet the goals described above. Each of the 30 RFI respondent organizations will be contacted and encouraged to nominate a member of their organization to participate. Other organizations that we know of who can add to the process will also be invited. We will also post this on the MiHIN and Dewpoint web sites and ask for open nominations.

Nominations will be done online via Survey Monkey. Vendors will have 10 working days to respond before we begin meetings but others members can be added later. Please see the Criteria for Selecting Vendors and Guidelines for Membership below.

Criteria for Selecting Vendors

1. Vendors are defined as those organizations that currently have HIT or HIE products, implement open source HIE products, or develop software for interoperable healthcare services and market and sell these products or services.
2. Vendors may have full service HIE products or individual products such as security services, master patient indices, messaging gateways or other products.
3. Vendors who re-sell other vendors products generally will not be allowed unless they provide significant value-added services such as software enhancements that promote interoperability.

4. Vendors must be CCHIT certified or for those products not yet covered by CCHIT certification they must demonstrate commitment to national standards for Health Information Technology interoperability.

5. Vendors who have been actively involved in national and regional HIE standards efforts are encouraged to participate.

6. Vendors with operating HIE systems being used by Regional Health Information Organizations (RHIOs) or backbone products used by national, state or regional consortiums are encouraged to participate.

7. Consultant organizations (other than the PCO consultant team) will not be allowed unless they meet one of the other vendor criteria above.

8. Vendors will not be able to develop system requirements and will not be voting members of any MiHIN Workgroup.

9. Michigan stakeholder organizations that have existing technology which may be leveraged for the MiHIN are not considered Vendors for the purposes of this process, thus they may be voting members of the MiHIN workgroups.

10. In some cases more than one representative from an organization may be allowed to participate if they bring additional skills to the team.

Guidelines for Membership

1. This is not a sales activity and no vendor sales staff will be allowed.
2. While broad participation from Technical Workgroup and vendors is highly desirable membership will be limited to individuals who bring strong technical skills and specific knowledge to the team.
3. Each member must be impartial in their work on this Collaboration Team in much the same manner as working on development of national standards.
4. Members will be asked to complete a Conflict of Interest and Intellectual Property form with Dewpoint/S2a which will describe their affiliations and protect any intellectual property that they may expose during the course of these sessions.
5. Members will be expected to contribute to the work by performing some limited work assignments such as reviewing and commenting on documents, collecting data to be shared with the team and other tasks. In general the requirement for participation will be limited to about 8 hours per month. Some members may be asked to volunteer to complete more extensive work assignments but this will be voluntary.
6. Vendor organizations may nominate one or more individuals for participation on the Collaboration Team however the Collaboration Team leadership will decide on individual participation.
7. Participation is limited to individuals not organizations. Organizations may not substitute at will for individual members but rather can nominate others for membership.
8. Participation by individuals from vendor organizations will not enhance nor hinder a vendor's opportunity to be selected for any State of Michigan or other MiHIN contracts.
9. Any member, as determined by the Collaboration Team leadership, who is not following these guidelines, may be asked to leave the team.
15 Appendix L: 2009 Surescripts Data
16 Appendix M: Michigan Health Department Analysis

% health departments electronically receiving immunizations
100% - The Michigan Care Improvement Registry (MCIR) is an immunization information management system (IIS) developed by the State Of Michigan to assist immunization providers with increasing immunization levels in Michigan. MCIR is maintained by the Michigan Department of Community Health Division of Immunizations. The IIS presently contains in excess of 74 million shot records addressing over 6.5 million patient records. Currently, there are more than 5,415 healthcare facilities (hospitals, pediatric clinics, family practice clinics, OB/GYN, H1N1 provider clinics, and migrant and tribal clinics) 400 public health clinics as well as schools and daycares accessing and submitting immunization information to the MCIR. Currently, the secure web-based system is receiving data via an upload of electronic files, electronic optical scan transfer and manual data entry. The MiHIN Shared Services plans will enable MCIR to support meaningful use by implementing the functionality to receive immunization data utilizing the standards and protocols set forth by the ONC.

% health departments electronically receiving syndromic surveillance
100% - The Michigan Syndromic Surveillance System (MSSS or Syndromic) is a real-time surveillance system that tracks and monitors chief presenting complaints from emergent care settings. State and local public health officials access the secure web-based system to rapidly detect and track unusual outbreaks of illness. There are currently over 80 facilities (hospital EDs and poison control centers) electronically submitting data to MSSS. Syndromic is maintained by the Michigan Department of Community Health. MSSS receives syndromic data via HL7 format.

% health departments electronically receiving notifiable laboratory results
100% - The Michigan Disease Surveillance System (MDSS) is the State Of Michigan’s system used to identify and track emerging infectious diseases and potential bioterrorism attacks. It allows state and local public health officials to investigate outbreaks and the monitoring of public health trends at a local, regional and state level. MDSS also enables physicians and clinical laboratories to electronically report the occurrence or suspected occurrence of disease, conditions or infection required by the Michigan Communicable Disease Reporting Rule. The system was developed in 2004 and is maintained by the Michigan Department of Community Health (MDCH) Bureau of Epidemiology.

MDSS is a secure web-based system available 24/7/365 to support quick and appropriate responses to public health threats. It is a CDC National Electronic Disease Surveillance System (NEDSS) based system and is compliant with the CDC’s Public Health Information Network (PHIN) standards. It is able to receive disease reports through manual upload of transferred files, online web submission and the importation of HL7 laboratory reports. Currently, MDSS is receiving HL7 electronic laboratory reports from the State Of Michigan Bureau of Laboratories as well as other laboratory partners, such as, the MAYO laboratory, Quest and Labcorp. Electronic laboratory reporting has improved the timeliness of reporting and data completeness accelerating the response time to public health threats and outbreaks including the 2010 H1N1 pandemic.
17 Appendix N: Web-Denis Information
The OneSource Credentialing Project - Overview
2006-7 CMS Medicaid Transformation Grant Award: 5,208,759

The OneSource Credentialing Project Overview
The focus of this project is to utilize available technology to optimize capture, processing, and management of healthcare provider data (credentials, licenses, sanctions, disciplinary actions). This will provide administrative simplifications by reducing processing time and costs associated with redundancies, provide the ability to electronically share healthcare provider information, and increase the overall quality of the state healthcare provider pool through more accurate assessment of healthcare provider eligibility using continuously monitored information.

The project targets manual, repetitive, redundancies currently in place for the capture, processing, management and sharing of Michigan healthcare provider data. The concept began with the understanding that healthcare providers are credentialed by, on average, 12 different entities, all of which use unique and often paper application forms, request similar or the same information, follow manual, paper-based processes and provide limited to no ability to quickly and efficiently share information.

The OneSource Credentialing Project and Sub-Components
The Credentialing Service: Michigan Provider Credentials Center (MiPCC)
This is a vendor-based solution (Medversant Technologies LLC) offers an off-the-shelf service that utilizes technology and standard practices to manage healthcare provider data. The service is NCQA certified as a CVO, URAC certified, and adheres to The Joint Commission guidelines. The service will utilize existing licensing data captured by the Bureau of Health Professions License 2000 database. The initial pilot included Fee-for-Service Medicaid healthcare providers. Medicaid eligible healthcare provider data has been shared with MiPCC and continuous monitoring piloted. Outreach is currently underway or planned for the following state agencies:

- Bureau of Health Professions (primary source verification and related support kicked off July 7, 2010)
- DCH Mental Health (primary source verification) (Outreach is underway)
- Health Professional Recovery Program (Outreach is planned)
- Department of Corrections (Outreach is underway)

Subcomponent: Disciplinary Documents File Conversion
This subcomponent was designed to establish and implement processes and procedures to share public healthcare provider disciplinary documentation electronically to state agencies (through IRMA) as well to the public (via the web). The scope includes:
Phase 1: Conversion of historical documents (FY2000 to present) from paper to electronic form; and development and implementation of ongoing process and procedures for conversion (Completed and Closed)

Phase 2: Posting public disciplinary documents to the website: Verify a License
This will reduce costs associated with manual, labor intensive processing of Freedom of Information Act (FOIA) requests as well as reduce the time to surface (find and/or share) this information both internally and to the public.
(Currently in the testing phase in preparation for cut over anticipated Q4FY2010)

Subcomponent: Michigan Healthcare Provider Records Enhancement
This subcomponent was designed to ensure that existing healthcare provider records in the licensing database contain the all the required data, this component included: 1) identification of essential data elements; 2) analysis of existing records/data for accuracy and completeness; and 3) update of healthcare provider records as necessary. (Completed and Closed)
Appendix P: Sub-State HIE Nominations Forms
Established in 1992, the Joint Venture Hospital Laboratories (JVHL) network is comprised of 126 hospital-affiliated laboratories committed to providing managed care plan members and participating physicians with the highest quality, convenient and efficient laboratory services. Lab testing is one of the most vital diagnostic tools for all segments of health care and it is our mission to provide the best in laboratory medicine in support of our communities and health care programs.

The core of the JVHL services are intended to allow the over 125 independent Michigan hospitals and laboratories that make up the JVHL to work together in the billing of claims and HEDIS result reporting for over 15 different health plans. This includes working with over 35 distinct electronic data interchange (EDI) partners and the utilization of ANSI-HIPAA EDI file formats for the transmission of billable claim data and remittance information. The end result in the workflows and data interchanges that the JVHL contracted health plans are able to receive claim and result information from over 125 independent hospitals and laboratories as being from a single provider.

JVHL also fulfills an important role in facilitating the reporting of lab results from the hospitals and laboratories it works with to numerous health plans. A number of contracted health plans require lab result information to fulfill HEDIS reporting requirements, run disease management systems, and carry out physician pay-for-performance programs. PLM plays a key role in the result reporting process by utilizing HIT systems to coordinate collection and consolidate information from over 125 independent providers so that it can be provided to health plans in a uniform electronic format.

In 2009 JVHL processed over 11.9 million services lines, with the highest volume partner submitting over 1.9 million services lines and the lowest volume partner submitting 2 service lines. For calendar year 2009, JVHL also collected and reported to health insurance plans over 9.5 million lab results.

An exciting project for JVHL is the creation of a result repository that is being used to make the reporting of laboratory result information more timely and accurate. This project includes a process that leverages the HL7 EDI standard to collect all outpatient results that are performed by partner laboratories. These results are fed into a result data repository, which is then used to handle the reporting of results to the health plans.

A challenging aspect to working with independent hospitals/laboratories on the Result Repository (PRR) project is that each partner uses different mnemonics to describe the resulted test. To normalize information and be able to report consistent results to health plans, an alias mapping has to be constructed between internal provider mnemonics and CPT/LOINC test codes. Currently, over 10,000 aliases have been setup in order to allow for proper reporting of result information. Another important internal alias mapping project that is in its infancy is to
normalize ordering providers so that all results that are stored in the PRR can be linked to the NPI of the ordering provider.

With 2009 being a year of major growth for the PRR, JVHL processed and stored over 88 million result values that were sent by 34 facilities. The result repository was utilized to report about 30% of the calendar year 2009 JVHL HEDIS results to health plans, which was a major increase over the utilization number for calendar year 2008 which was only 17%. While still early, the 1st Quarter of 2010 is seeing usage of the PRR to fulfill 73% of JVHL HEDIS results that have been reported to health plans in 2010.

More information is available at www.jvhl.org
Appendix R – Results from Sub-state HIE Capabilities, Plans and Proportion Survey
Appendix I: State of Michigan ONC-HIE-PIN-002, June 8, 2012
ONC-HIE-PIN-002

The State Of Michigan’s Response to the ONC’s PIN for direction on timing, content and review process for annual updates to Grantee Strategic and Operational Plans (SOPs)
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## Changes In HIE Strategy

<table>
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<tr>
<th>Domain/Sections</th>
<th>Short Description of Approved Portion of SOP that Grantee is Proposing to Change (Include Page numbers)</th>
<th>Proposed Changes</th>
<th>Reason for Proposed Changes</th>
<th>Budget Implications of Proposed Changes</th>
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<tr>
<td>Overall HIE Strategy Including Phasing</td>
<td><strong>Governance</strong> Michigan Strategic Plan Pages 28-32: Michigan will develop state-level shared services that connect sub-state HIEs and build on their existing public health investments to (1) enable bidirectional exchange between providers and Michigan’s public health systems, and (2) facilitate the exchange of complete patient care summaries between unaffiliated providers. The technical infrastructure for the MiHIN Shared Services will employ a service bus that exposes the services necessary for: developing a security framework; messaging; subject discovery and query for documents.</td>
<td>Shared services will first focus on a master provider index and a messaging gateway, overtime Michigan will add functionality for an enterprise master patient index, record locator service, and data repository (for centralized storage of data for public health reporting, quality reporting, medical research and chronic disease registries) as the value propositions support expanded functionality. Michigan is committed to first leveraging services and technologies and will continue to work with statewide partners to ensure collaboration and cooperation. MiHIN will work toward the goal of incrementally enabling use cases starting with “push” of data and working toward “pull”.</td>
<td>This change is a result of the governance board being assembled and assessing the value propositions for an entire service bus that includes push and pull technology. The governance board decided to demonstrate value in the more directed statewide communications through a modular approach that will allow the state to add functionality as the value becomes clear.</td>
<td>No federal budget implications.</td>
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<td><strong>Financial</strong></td>
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<td><strong>Business Operations</strong></td>
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<td><strong>Legal/Policy</strong></td>
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<td><strong>Strategies for e-prescribing</strong></td>
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<td><strong>Strategies for structured lab results exchange</strong></td>
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<td><strong>Strategies for Care Summary Exchange</strong></td>
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Sustainability Plan

I. Plan to Create Conditions for HIE Sustainability: A strategy/coordination plan to create the business drivers for HIE that will support care transformation and facilitate provider achievement of Meaningful Use in the State of Michigan

a. Policy Levers to create demand for MiHIN’s services. Under the direction of the Michigan HIT Commission, MiHIN is considering imposing a number of policies on organizations operating under its “umbrella.” These policies would offer both operational and financial advantages to participating organizations.
   1) Offering a “safe harbor” that limits the liability if an organization is sued for the breach of PHI
   2) Reduction of exposure to antitrust violations because MiHIN activities are open, transparent, and monitored by the HIT Commission, as opposed to private infrastructure that might be vulnerable to charges of collusion, barriers to access, data hoarding, unfair business practices, and/or restraint of trade
   3) Requiring strong identity management
   4) For access to aggregated PHI data, requiring biometric and dual authentication methodologies that satisfy or exceed the requirements for National Institute of Standards and Technology (NIST) assurance Levels 3 and/or 4.

b. Purchasing Levers to create demand for MiHIN’s services. Under the direction of the Michigan HIT Commission, MiHIN is considering offering financial incentives to organizations that operate under its “umbrella” and employ security best practices.
   1) Offering a “safe harbor” that limits the liability if an organization is sued for the breach of PHI
   2) Through volume purchasing, offering discounts on the purchase of cyber liability insurance, biometric and/or dual authentication security devices and systems, etc.
   3) Possibly requiring the use of CCDs as the transport mechanism for integrated care initiatives and ACOs
   4) Aligning with existing health care transformation initiatives to foster a greater appreciation of the value of HIE and to ensure that HIE is considered as a key element in the transformation process. Examples of such initiatives include Blue Cross Blue Shield of Michigan’s Physician Group Incentive Program (PGIP), the Michigan Primary Care Transformation Project (MiPCT), the Michigan Health and Hospital Association (MHA)’s Michigan State Action on Avoidable Re-hospitalizations (MI STAAR) initiative, and the Society of Hospital Medicine’s BOOST project. These existing purchasing levers enable health care organizations to capture additional incentives by better managing transitions in care.

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1 In 2010 the Dept. of Justice filed a civil antitrust lawsuit against Blue Cross Blue Shield of Michigan alleging that provisions of its agreements with hospitals raise hospital prices, prevent other insurers from entering the marketplace, and discourage discounts, with the likely result that Michigan consumers pay higher prices for their health care services and health insurance.
3 Blue Cross Blue Shield of Michigan’s Physician Group Incentive Program (PGIP) is explained at http://www.bcbsm.com/provider/value_partnerships/pgip/.
4 The Michigan Primary Care Transformation Demonstration Project (MiPCT) is explained at http://www.mipcc.org/what-were-doing/michigan-primary-care-transformation-demo-cms/.
6 The Society of Hospital Medicine’s Project BOOST is described at http://www.hospitalmedicine.org/ResourceRoomRedesign/RR_CareTransitions/html_CC/project_boost_background.cfm.
c. **Advance Care Transformation Models or Payment Reform Initiatives that increase demand for HIE.** As mentioned above, MiHIN is promoting community learning about HIE by the organizations operating under its “umbrella.” It has prioritized a number of use cases and is piloting a series of projects that demonstrate best HIE enablement practices and the value of the use cases. Some of these models/initiatives will explicitly incorporate HIT adoption and HIE requirements.

1) Creating of a statewide Health Provider Directory (HPD)
2) Promoting MiHIN’s HIE-enabling admit/transfer/discharge (ADT) notification pilot
3) Coordinating Medication Therapy Management (MTM) HIE pilots that:
   - Aid in the communication of medication histories
   - Encourage creation of active medication lists
   - Promote adherence to relevant standards such as Continuity of Care Documents (CCDs) and HL7 Version 2.x
4) Requiring the use of the Continuity of Care Document (CCD) as the transport mechanism for integrated care initiatives and ACOs that deal with Medicaid
5) Using HIE to enable participants in existing programs—PGIP, MiPCT, MI STAAR, BOOST, et al.—to capture additional incentives by better managing transitions in care

d. **MiHIN- and State of Michigan-supported Systemic Changes that support HIE**

1) The MiHIN Board of Directors has decided to not pursue consumer engagement activities until FY 2013.
2) Consumer engagement efforts will likely be focused on three areas:
   a) Personal health record (PHR) and patient portal gateway activities, e.g., moving CCDs among portals and PHRs
   b) Standing up a patient directory services infrastructure in conjunction with the State of Michigan as it moves forward with its Master Person Index initiative
   c) Propagation of consent management preferences among the various sub-state HIE organizations
3) Regarding health care provider engagement and adoption, MiHIN will:
   a) Continue to work with sub-state HIEs on reporting of public health reporting and other MU measures
   b) Continue to coordinate with Michigan’s Regional Extension Center (REC)
   c) Continue to implement a robust statewide Health Provider Directory (HPD), which will probably be the key function that will help drive adoption of EHRs
   d) Work to implement DIRECT to close gaps in, and enable, the interstate exchange of information

II. **Plan to Sustain MiHIN Shared Services:** A business plan that describes MiHIN shared services that address market demand and are affordable, i.e., are likely to be widely adopted and used

MiHIN offers or will eventually offer the following types of Services (HIE options):

1) Alerts and notifications
2) Audit trail
3) Data enrichment
4) Directory services
5) Error checking and data integrity/data quality assurance
6) Identity
7) Interface monitoring help desk
8) Routing
9) Security
10) Standards gateway
11) Other services to be determined
Development of a number income-producing services will depend on progress in other HIE components, e.g., the State’s Master Person Index and overall maturation of the statewide HIE infrastructure.

a. Security Services
1) MiHIN fee structure. Not yet specified. It is anticipated that when individuals or entities apply for their health care licenses or obtain their digital certificates or credentials, MiHIN will receive some portion of the payments to support security and identity services.
2) Rationale for, and assumptions underlying, the fee structure. Given the response to (1) immediately above, N/A.
3) Data that describes current adoption and use of the service. See (4) below.
4) Evidence of demand for the service. Ample local and national data indicate there will be a growing market for security services related to protecting PHI. The number of breaches and unauthorized disclosures grow each year (2.9 million in 2009, 10.8 million in 2011). Security breaches are expensive in terms of money and careers and are receiving increasing national publicity. For example, in 2012 Blue Cross Blue Shield of Tennessee paid HHS $1.5 million to settle potential violations. In 2011, the General Hospital Corp. and Massachusetts General Physicians Organization paid the U.S. Government $1 million for breach. UCLA is being sued for $16 million in damages in a class action suit concerning a data security breach. The Michigan HIT Commission and MiHIN believe that HIT security services can help support MiHIN, and feedback elicited at local security workshops supports that belief.
5) Customer/service users and the HIE task(s) that will be performed. MiHIN’s primary customers will continue to be sub-state HIEs and the State of Michigan. Individuals and organizations may pay MiHIN for security and vulnerability audits and/or for aggregated security and liability services (e.g., liability insurance). A MiHIN-sponsored workshop to be held on June 19-20 in Ann Arbor, Michigan, will make specific recommendations regarding the kinds of security and privacy services that should be offered, if not required.
6) How the service will provide value in a competitive market, i.e., its compelling competitive advantage. Currently, there are few or no security services that target the clinical community in a coordinated fashion and are backed by the potential of safe harbor from excessive liability (assuming implementation of the latter).

b. Standards Gateway
1) Customer/service users and the HIE task(s) that will be performed: Sub-state HIEs and public and private healthcare payers may be willing to pay to convert records that are not in standardized form to CCD or other formats. For example, many other state-designated HIEs use DIRECT. The MiHIN gateway service will allow a DIRECT message to be converted to an HL7 message, which is the format routinely used by Michigan’s sub-state HIEs.

c. Data Enrichment
1) MiHIN fee structure. It is anticipated that some type of revenue sharing will be developed with sub-state HIEs, e.g., a charge for each CCD that flows through MiHIN to an entity that performs some type of value-added service and then returns the CCD for routing to its ultimate destination.
2) Customer/service users and the HIE task(s) that will be performed. Sub-state HIEs can be paid for aggregating data into a CCD and then transmitting the CCDs to, for example, the Social Security Administration. MiHIN can offer this service to other sub-state HIEs and share in the revenue generated by aggregation and transmission.

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d. **Alerts and Notifications**

1) **Customer/service users and the HIE task(s) that will be performed.** The ability to publish and subscribe to data services is a key, high-value service. Payers (insurance companies), pharmacy benefit managers, pharmacies, and entities that engage in forms of risk sharing may be willing to pay for services that improve care management during transitions of care. Examples of such services include admit/discharge/transfers (ADTs), medication therapy management (MTM), advance directives, chronic disease registry utilization thresholds, and update. Ultimately, even patients may be interested in such services, especially concerning loved ones for whom they coordinate care.

e. **Health Provider Directory Services**

1) **MiHIN fee structure.** Perhaps $1,000 to $3,000 per year (pending Board Of Directors approval) for level four profile editors (users of the Health Provider Directory, discussed next), with reduced fees or no cost for self-maintenance.

2) **Evidence of demand for the service.** The Health Provider Directory (HPD) will be a unique health care asset that will offer compelling services to the federal and State governments, private payers, health care providers, et al. It is essential for shared services to have the ability to “push” data to individuals and organizations. If Michigan sets up a health insurance exchange (HIX), it will require HPD services. If a state HIX is not established, Michigan HPD services will have to be integrated with a national HIX. It is possible that demand for the HPD will approach several thousand profile editors.

3) **Customer/service users and the HIE task(s) that will be performed.** The State of Michigan, major payers such as Blue Cross Blue Shield of Michigan, physician organizations, and major health systems may be willing to edit their own profiles in the HPD. Profile editors will be vetted and registered with a high level of assurance and will be required to authenticate to access the system by using biometrics or another high-level security system, e.g., mutual authentication.

4) **How the service will provide value in a competitive market, i.e., its compelling competitive advantage.** There are 250,000 licensed professionals in the State of Michigan. MiHIN intends to add all of them to the HPD, which will be a database/set of data services consisting of unique provider IDs and possibly hundreds of associated attributes sourced from existing data silos. The HPD will be linked to the State of Michigan’s Medicaid Data Warehouse Index. Entities like insurance companies may “share” attributes (e.g., membership in an insurance plan) from their own databases and link them to the HPD. The HPD will identify how each licensed professional receives electronic data and will be used to direct data traffic. MiHIN will be able to stand up a subset provider directory—a “platform as a service,” with rich functionality—very quickly.

f. **Ongoing Public or Private Contributions to support MiHIN’s services.**

Long-term, MiHIN believes that it can support itself as a transaction-oriented entity. MiHIN’s sustainability strategy, outlined at the organization’s inception and still the fallback approach, is to allocate the total cost of MiHIN to all of its participating, qualified data-sharing organizations. Worst case, these organizations (currently nine) would split a maximum annual operating cost of $2.5 to $4 million based on a yet-to-be-determined, pro rata share. (In theory, each organization has committed to that by virtue of its participation on MiHIN’s Board of Directors.) MiHIN has established a flex-staffing model and uses commercial grade, open source software and tools in order to minimize expenses and retain the flexibility to expand or contract as resources and needs dictate. The data-sharing organizations have financially benefited from MiHIN’s existence and would probably continue to profit from it, even without a transaction-oriented income stream.
Program Evaluation

I. Evaluation Framework

MiHIN’s program evaluation is designed to provide useful data to program planners, provide objective measures of progress towards milestones, collect information from multiple perspectives that will enhance and expand stakeholder engagement and participation, and coordinate with Michigan Medicaid to develop baseline utilization, quality, and cost metrics. Therefore the evaluation combines formative, process, and outcomes approaches. Formative evaluation will focus on collection, rapid analysis and use of data to enhance program planning. Process evaluation is key to understanding how the governance and structure of HIE in Michigan promotes trust, timely program execution, and flexibility to adapt plans to meet changing needs. Performance metrics will measure reach and output. Finally, the evaluation plan will evolve through collaboration to develop intermediate and long-term outcome metrics to be tracked as use of HIE becomes more widespread in Michigan.

The evaluation plan is based on the framework developed by the Centers for Disease Control and Prevention (CDC), which begins with engaged stakeholders and a logic model or description of how program components and context are expected to affect desired outcomes. From there, evaluation questions are articulated and data collection and analysis plans proposed to provide useful information based on what is feasible within resources of both the program and potential data providers. An initial logic model is included as Attachment A. The evaluation will be managed by an independent evaluator, which will produce required reports and evaluation plan updates for the SOP updates in May 2013 and January 2014.

II. Evaluation Aims

The evaluation plan has the following Specific Aims:

1) To describe the strategies and approaches adopted in Michigan to facilitate and expand HIE
2) To identify and understand the role of the governance structure of MiHIN, the shared services organizational model, and contextual factors in Michigan that facilitate or hinder chosen strategies
3) To track progression of adoption and use of HIE in key areas, including:
   a. Electronic prescribing
   b. Delivery of structured laboratory results
   c. Providers and hospitals sharing electronic patient care summaries
   d. State health departments receiving immunizations, syndromic surveillance, and notifiable laboratory results
   e. Additional prioritized MiHIN use cases
4) To understand key factors contributing to progress, and also key lessons learned, in promoting adoption and use of HIE
5) To identify and track intermediate and long-term outcomes from HIE adoption
Table 1 below summarizes evaluation questions and measurement strategies for each Specific Aim.

<table>
<thead>
<tr>
<th>Evaluation Question</th>
<th>Measurement Strategy</th>
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<tbody>
<tr>
<td><strong>Aim 1: To describe the strategies and approaches adopted in Michigan to facilitate and expand health information exchange</strong></td>
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</tr>
<tr>
<td>A. What strategies has Michigan chosen and not chosen to promote HIE in priority areas?</td>
<td>Utilize data from other states and the national evaluator to construct a list of possible strategies for promoting HIE. Identify strategies that Michigan has pursued from program documents, meeting minutes, and interviews with MiHIN leadership.</td>
</tr>
<tr>
<td>B. How are MiHIN’s general strategies in the areas of trust, vision, coordination, standards, technical infrastructure, and legal underpinnings applied to promote adoption in priority areas?</td>
<td>Analysis of MiHIN and sub-state HIE program documents and outreach activities; Stakeholder interviews</td>
</tr>
<tr>
<td><strong>Aim 2: To identify and understand the role of the governance structure of MiHIN, shared services organizational model, and contextual factors in Michigan, that facilitate or hinder chosen strategies</strong></td>
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<tr>
<td>C. How has the governance and organizational structure of MiHIN promoted trust and common vision among stakeholders?</td>
<td>Key informant interviews</td>
</tr>
<tr>
<td>D. Have stakeholders developed coordinated strategies to promote HIE adoption in priority areas?</td>
<td>Key informant interviews; review of public documents; Physician Organization (PO) survey; focus groups</td>
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<tr>
<td><strong>Aim 3: To track progression of adoption and use of HIE in key areas</strong></td>
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<tr>
<td>E. Does MiHIN meet milestones for core infrastructure build-out and security services</td>
<td>Documentation of completion and successful testing</td>
</tr>
<tr>
<td>F. How much progress does Michigan make from year to year in structured, electronic data exchange in priority areas?</td>
<td>In addition to required performance tracking, MiHIN will document date of meeting key use case milestones, and volume of transactions by type</td>
</tr>
<tr>
<td>G. How many providers, hospitals, laboratories, patients, pharmacies, other entities participate in sub-state HIEs?</td>
<td>Sub-state HIE data reporting</td>
</tr>
<tr>
<td>H. How many eligible hospitals, CAHs, and eligible providers are meeting meaningful use criteria through a sub-state HIE?</td>
<td>Sub-state HIE data reporting</td>
</tr>
<tr>
<td>I. As MIHIN develops additional use cases, what is the level of participation?</td>
<td>Project documents showing number and type of participants in planning and testing; transaction volume and number of exchange partners for additional use cases</td>
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Aim 4: To understand key factors contributing to progress, and also key lessons learned, in promoting adoption and use of HIE

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<tr>
<td>J.</td>
<td>What are top priorities for HIE among key constituencies, what drives these priorities, and how are these priorities addressed by MiHIN and the sub-state HIEs?</td>
</tr>
<tr>
<td>K.</td>
<td>What is the knowledge level, and what are the key concerns of targeted HIE user groups in decision-making around HIE? How are these being addressed?</td>
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<tr>
<td>L.</td>
<td>For those who have adopted (participate in a sub-state HIE or MiHIN), what is their experience in utilizing HIE?</td>
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<tr>
<td>M.</td>
<td>How does the Michigan model adapt in response to changing technology, stakeholder priorities, and the developments in HIE options?</td>
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**Aim 5: To identify and track medium and long-term outcomes from HIE adoption**

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<tr>
<td>N.</td>
<td>How important do providers and hospitals rank HIE participation for providing high quality and cost-effective care?</td>
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<tr>
<td>O.</td>
<td>To what extent do new private and public service delivery and payment model programs leverage the Michigan Model of HIE?</td>
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<td>P.</td>
<td>How is Michigan progressing overall in quality, cost, efficiency, and experience metrics that have a demonstrated relationship to HIE?</td>
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**III. Methods**

**Design**

The evaluation is longitudinal incorporating comparison to external benchmarks and triangulation of multiple methods. The quantitative aspects of the evaluation involve defining HIE performance as well as outcome metrics that will be tracked and reported on an annual basis. Michigan will compare its progress with performance metrics to other states that have similar approaches and starting points. In terms of outcome metrics, MiHIN will collaborate with other entities to establish a set of metrics utilizing claims and meaningful use data that will chart Michigan's progress as a state in achieving the triple aim outcomes of cost reduction, improved quality and healthcare experience, and improved health. During this initial period, outcomes data are not expected to be able to demonstrate a causal link between HIE participation and outcomes, but will rather inform the setting of targets to focus policy and activity across stakeholders over time.

Surveys and qualitative data collection are critical to inform the effectiveness of MiHIN's strategies for achieving its performance targets, as well as to distill lessons learned. Stakeholder feedback through interviews and surveys will document the role of MiHIN and the sub-state HIEs in transforming healthcare.
Study Population
The study population includes the following key stakeholder groups:

- **Laboratories:** There are 237 hospital-based and 105 independent laboratories in Michigan as found in the CLIA OSCAR database. These laboratories are targeted as part of MiHIN’s annual laboratory census for ONC’s tracking program progress requirement. Additionally, sub-state HIEs are required to report laboratory participation as part of their regular reporting.

- **Pharmacies/Pharmacists:** Pharmacists are represented on the Michigan HIT Commission and will be a stakeholder group targeted for key informant interviews. The ONC will be providing Michigan with data on the number of licensed pharmacies operating in Michigan, and the number of pharmacies receiving or sending electronic prescriptions using the SureScripts network.

- **Sub-State HIEs:** There are currently six sub-state HIEs with recognized status as a Qualified Data Sharing Organization within MiHIN. Sub-state HIEs have representation on the MiHIN Board of Directors. They provide regular reporting on provider participation numbers and numbers of providers who utilize the HIE to meet meaningful use requirements. As part of the evaluation, sub-state HIEs will be asked to provide additional information on the volume of key types of transactions: transmission of CCDs, ADT notifications, e-prescribing, and lab results delivery. These data will be provided only as Sub-state HIEs become operational and are able to provide this level of detail. Sub-state HIEs will also be a key target of qualitative data collection via key informant interviews.

- **Payers:** Michigan’s payers are represented on the MiHIN BOD and are Qualified Data Sharing Organizations. Payers have a substantial role in promoting provider participation in HIE through incentive programs, and are a key component to the sustainability of MiHIN and the sub-state HIEs. The evaluation will target representatives from dominant commercial payers as well as Medicaid Health Plans in Michigan for key informant interviews. Payer support for MiHIN will also be measured by their contributions, and synergies between MiHIN goals and payer incentive programs.

- **State of Michigan:** In addition to direct support and its role in governance of MiHIN, the State of Michigan is a Data Sharing Organization, and is able to support the development through coordination with numerous state programs.

- **Health Systems:** Michigan’s health systems have a complex role to play in promoting HIE as supporters of sub-state HIEs, and as entities that support hosted EHR adoption and therefore data exchange of both affiliated and independent ambulatory providers. Sub-state HIEs report on hospital participation. Additionally, the evaluation will work with the Michigan Health and Hospital Association to recruit hospital CIOs for key informant interviews. The evaluation will conduct approximately five interviews with hospitals that participate in a sub-state HIE and five interviews with hospitals that do not participate in a sub-state HIE. Representation for interviews will be sought from throughout the state, from large systems and rural and Critical Access Hospitals, and both locally owned and those that are part of a regional or national network.

- **Primary and Specialty Care Providers and their Physician Organizations:** MiHIN’s current use case priorities involve participation by ambulatory care providers. The sub-state HIEs report regularly on the number of providers participating. The evaluation of Michigan’s Model for HIE will seek to understand barriers and facilitators to participation in HIE by this constituency by conducting: 1) a survey of physician organizations (POs); 2) a focus group with front-line M-CEITA (Michigan’s REC) field staff; and 3) collaboration with sub-state HIEs to conduct focus groups with those who have signed up with an HIE.

- **Patients/the Public:** The MiHIN Board of Directors has decided not to pursue consumer engagement activities until 2013. The evaluation plan will be updated at that time to assess the effectiveness of the strategy. In the meantime, the consumer representative on the HIT Commission will be included in key informant interviews.
• Other Provider Groups: Several provider groups have limited ability to participate in the EHR incentive programs, and are thought to lag in EHR adoption—limiting their ability to participate in HIE. These include Michigan’s 45 local health departments, 46 Community Mental Health Services providers, and long-term care providers. The sub-state HIEs will be asked to report on participation by these entities. Efforts to reach out and promote participation in Michigan’s model for HIE among these provider types will be documented.

Data Sources and Analysis Plans
Specific analysis plans vary by data type and evaluation question.

MiHIN Documents of interest to the evaluation include: mission and vision statements, strategic and operational plans and updates, high level timelines and workplans, use case descriptions, outreach materials, and other materials identified to be relevant to implementing MiHIN’s vision. Document review will be a key data source to address evaluation questions A and B, relating to HIE promotion strategies. Vision and planning documents will be compared to outreach materials and communications to evaluate the extent to which elements of the vision are operationalized and subsequently how and to whom they are communicated to a broader audience. Information from document review will be triangulated with stakeholder feedback, as it will be important not only to describe the approaches taken by the Michigan Model with respect to promoting HIE, but also the effectiveness with which they were implemented. Documents will also establish key milestone attainment dates. Finally, sources such as meeting notes and attendance provide information on the engagement and level of interest of key stakeholders.

Not all documents of interest relate specifically to MiHIN. For instance, key stakeholders have an opportunity to leverage the Michigan Model for HIE. Relevant in particular to addressing evaluation question D (coordinated strategies across stakeholders) are the Michigan Medicaid HIT Plan, State of Michigan HIE efforts to enable meaningful use through public health data reporting, and public and private efforts to coordinate care. The extent to which the Michigan Model for HIE is a key strategy promoted by stakeholders to achieve their outcomes, can in part be assessed through a review of program descriptions, participation requirements, tools, and resources.

Key informant interviews will be conducted with the following groups: MiHIN leadership (n=2), MiHIN Board of Directors members (n=13, representing payers, sub-state HIEs, and the State of Michigan), HIT Commission members (n=11, representing physicians, the public, pharmacists, health systems, purchasers, Schools of Medicine, and the IT industry), and hospital CIOs (n=12).

Key informant interviews will be semi-structured using an interview guide composed of open ended questions, but carried out by a trained qualitative evaluator familiar with issues facing HIE organizations, and therefore able to probe specific issues. Interviews are planned to address evaluation questions under Aims 1, 2, 4, and 5.

The first interviews to be conducted will be with MiHIN Leadership, MDCH, and the sub-state HIEs. These leaders will be asked to characterize their organization’s specific role in the Michigan model for HIE, how they operationalize key elements of their vision, their assessment of stakeholder priorities and requirements, strategic decision-making processes, success factors, barriers they have encountered, and lessons learned.

Interviews will then turn to stakeholders who are actual or potential users of HIE. Questions will seek to identify their priorities for HIE and the extent to which these are addressed effectively within the Michigan Model for HIE. Stakeholder perception and satisfaction with MiHIN’s role in promoting trust, shared vision, coordination, a sound technical infrastructure, standards and a legal framework for change will be addressed. Hospital leaders, including both IT and clinical leadership will be asked about their decision making around choosing HIE options, experiences and satisfaction with implementing and using HIE within different clinical areas/units, and whether and which aspects of MiHIN and the sub-state HIEs are central to their own efforts to transform care, improve quality, and reduce costs.
Evaluation Aims 4 and 5 will be further investigated through focus groups with ambulatory care users of HIE. Approximately three focus groups will be conducted with ambulatory providers who are participating in data sharing in sub-state HIEs. Evaluation questions to be addressed include: J) the extent to which available HIE options are meeting their information exchange priorities, L) their experience using sub-state HIE services (measured both in terms of how often they utilize an HIE, and the workflows created within practices to take advantage of HIE), O) the perceived centrality of HIE to meeting their quality and financial goals, and P) the extent to which use of HIE is driven in part by requirements of various coordinated care and incentive programs.

The evaluation will collaborate with Michigan’s REC (M-CEITA) – currently providing on-site consulting to over 4,000 primary care providers (PCPs). Focus groups with M-CEITA field staff will address evaluation questions K and L in particular: to what extent are PCPs considering HIE options, what are their priorities and questions regarding HIE, and what issues with implementing and using HIE services do M-CEITA consultants notice and document?

Both interviews and focus groups will be analyzed using qualitative analysis techniques that include transcription, then coding and summarizing key themes.

A final form of stakeholder feedback will be gathered through surveys. A new survey will be developed and administered to Physician Organizations (POs). There are over 40 POs in Michigan – which occupy a unique role in Michigan in facilitating provider participation in a number of incentive programs for Michigan’s largest private payer (BCBSM). POs are a key entity in shaping “Organized Systems of Care” (BCBSM’s version of ACOs). Michigan’s multi-payer PCMH demonstration is implemented through POs. Because of this, POs have played a dominant role in developing and disseminating HIT and HIE strategies of physician offices. A survey will be developed and distributed to PO leaders that will address evaluation questions J-O.

Analysis of the PO survey will employ simple frequencies and summary statistics, as well as limited comparisons of responses based on PO type (whether closely affiliated with a hospital, or a looser association of independent practices) and geography.

Performance Incentive Metrics will be derived from the following data sources: ONC provided data derived from the AHA survey and SureScripts, the laboratory census, sub-state HIE participation, and HIE transaction volume. Based on these data sources, metrics will be defined and presented over time. Percent change from year to year will be calculated. Additional analysis of lab census data will include comparisons by size, type, and geographical location of labs.

Long-term Outcomes are not expected to demonstrate change attributable to HIE during the course of the current funding and will not be reported as part of the current program evaluation report. However, efforts are underway within MDCH to establish metrics utilizing meaningful use and Medicaid encounter data that will be tracked over time. Metrics will be chosen that are expected to be impacted by EHR and HIE adoption.

IV. Dissemination

To ensure rapid processing and use of evaluation data, all data will be summarized and reported to leaders after collection. Summary briefings will be created for other key stakeholders. Required reports will summarize all data by evaluation question and will be submitted on schedule to ONC.

Privacy & Security Framework

For a detailed gap analysis based on ONC-HIE-PIN-003, please see Appendix B.
<table>
<thead>
<tr>
<th>Domain</th>
<th>Description of approach and where domain is addressed in policies and practices</th>
<th>Description of how stakeholders and the public are made aware of the approach, policies and practices</th>
<th>Description of gap area and process and timeline for addressing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Access</td>
<td><strong>Approach:</strong> MiHIN will work to provide centralized guidance to utilize economics of scale, promote technical integration, and work towards a consistent approach wherever possible while facilitating regional development of the Sub-state HIEs – MiHIN will work with stakeholders to build consensus and provide guidance for addressing individual approach. <strong>Policies and Practices:</strong> - QDSOA (MH) - MiHIN Operational Plan - sub-state HIE policies</td>
<td>General information can be found on both the MiHIN Shared Services website and the State’s MiHIN website Additional information is usually available at the HIT Commission meetings, which are open to the public and time for public comments More detailed information per each Sub-state HIE’s policies can be found on most of the Sub-state HIE websites</td>
<td>Currently, most Michigan sub-state HIEs do not offer web access to individuals The MiHIN Use Case Working Group will develop use cases for the sub-state HIEs, incorporating all of the domains. MiHIN will convene stakeholders to build a consensus approach including processes for consumer access</td>
</tr>
<tr>
<td>Correction</td>
<td><strong>Approach:</strong> Please see above <strong>Policies and Practices:</strong> - QDSOA (MH) - sub-state HIE policies</td>
<td>Please see above</td>
<td>Correction processes vary and may be inconsistent. Michigan sub-state HIEs must comply with the MiHIN QDSOA; however the correction process is not specified. The MiHIN Use Case Working Group will develop use cases for the sub-state HIEs, incorporating Correction.</td>
</tr>
<tr>
<td>Openness and Transparency</td>
<td><strong>Approach:</strong> MiHIN Shared Services is committed to transparency, accountability and trust through collaboration. MiHIN Shared Services will encourage all sub-state HIEs to implement principles of accountability and transparency and will encourage that information about operations are readily available to the public. <strong>Policies and Practices:</strong> MiHIN Strategic Plan</td>
<td>Consumers can attend the monthly HIT Commission meetings held in Lansing More information is available on the MiHIN Shared Services website sub-state HIE’s have information available on their websites</td>
<td>Most policies and other operational information is not currently posted online for consumers The MiHIN Security and Privacy Working Group, along with MOAC will work to ensure that relevant operational information is available to consumers in a way that is easy to access and to understand</td>
</tr>
<tr>
<td>Individual Choice</td>
<td><strong>Approach:</strong> MiHIN will build on the past “informed Opt Out” recommendation, approved by the HIT Commission <strong>Policies and Practices:</strong> - Preliminary Informed Opt Out Policy Recommendation (MH) - Individual sub-state Opt Out Policies</td>
<td>sub-state HIEs and participating providers will be the primary source of information for consumers regarding Individual Choice There will likely be presentations and discussions during the HIT Commission meetings, which are open to the public and on the State’s MiHIN website and the MiHIN Shared Services website</td>
<td>No official state-wide “opt out” policy The Security and Privacy Working Group will review and build on the previous policy and in conjunction with the Operations/Production Support Working Group to address how to achieve meaningful granularity amongst all the sub-state HIEs and will work with the Use Case Working Group, to develop a use case based on their findings</td>
</tr>
</tbody>
</table>
| **Collection, Use and Disclosure Limitation** | **Approach:** MiHIN will work to promote the Minimum Necessary principle of the HIPAA Privacy Rule.  
**Policies and Practices:** -Unique User Identification (MH) -Access Authorization (MH) -Access Control and Validation(MH) -Audit Controls(MH) -Data Use Agreement (MH) -QDSOA (MH) | sub-state HIEs and participating providers will likely be the primary source of information for consumers regarding Data Quality and Integrity  
Additional information will be available on the State’s MiHIN website and on the MiHIN Shared Services website | The Security and Privacy Working Group will review current sub-state policies.  
Plan to draft additional policy language and guidance for sub-state HIEs recommending attestation such as patient registration, prescriptions, consults, and referrals to verify that provider’s accessing IIHI have a treatment relationship with the consumer. |
| **Data Quality and Integrity** | **Approach:** MiHIN will work to ensure that reasonable steps are taken to ensure that IIHI is complete, accurate and timely.  
**Policies and Practices:** -Audit Controls(MH) -Data Use Agreement (MH) -QDSOA (MH) | Sub-state HIE will be the primary source of information for consumers regarding Data Quality and Integrity  
Additional information will be available on the State’s MiHIN website and on the MiHIN Shared Services website | Uncertain of all data quality and integrity policies in place for sub-state HIEs.  
Need process for communicating corrections in a timely manner.  
The Use Case Working Group will develop a use case to address data quality and integrity in conjunction with the Security and Privacy Working Group |
| **Safeguards** | **Approach:** MiHIN Shared Services will work through the MOAC’s Security and Privacy Working Group to enact and enforce policies and procedures to prevent unauthorized and inappropriate access, use or disclosure.  
**Policies and Practices:** Sanction Policy(MH) Risk Management(MH) Risk Analysis (MH) Password Management(MH) Disaster Recovery(MH) Encryption and Decryption(MH) IS Activity Review(MH) Data Sharing Agreement (MH) QDSOA (MH) | Sub-state HIE will be the primary source of information for consumers regarding the Safeguards that they have in place  
Additional information will be available on the State’s MiHIN website and on the MiHIN Shared Services website  
Sub-state HIE’s should have information available on their websites | Sub-state HIE policies may be inconsistent and may not meet MiHIN standards  
The Use Case Working Group will develop use cases for the sub-state HIEs, incorporating all of the domains.  
MiHIN will convene stakeholders to build a consensus approach |
| **Accountability** | **Approach:** MiHIN Shared Services will work to ensure that appropriate monitoring methods are in place for timely reporting of non-adherence and breaches  
**Policies and Practices:** QDSOA (MH) MiHIN Strategic Plan | Sub-state HIEs will be the primary source of information for consumers regarding the Accountability policies that they have in place  
Additional information will be available on the State’s MiHIN website and on the MiHIN Shared Services website  
Sub-state HIE’s should have information available on their websites | The Use Case Working Group will develop use cases for the sub-state HIEs, incorporating all of the domains.  
MiHIN will convene stakeholders to build a consensus approach |
Project Management Plan Updates

Thanks to the cooperative agreement with ONC, Michigan’s Model for Health Information Exchange has progressed as planned, with the establishment of the Michigan Health Information Network Shared Services as an independent, stakeholder-owned entity. The project plan was, and continues to be, extremely flexible in order to respond to changes in technology and the marketplace for HIE, as well as regulatory compliance challenges. Requested updates are highlighted here.

I. Staffing Plan

The changing landscape of statewide health information exchange requires a nimble organization that can adjust to new requirements or market changes quickly. Therefore, instead of relying on the original staffing plan that was created before the development of MiHIN, the MiHIN Board of Directors decided to take a somewhat different approach. Some of the full-time positions have changed in scope, others are staffed as needed with help from the steering committee sub-state HIEs, and flex staffing vendors accomplish tasks of limited or unknown duration. The core staff for 2012-2013 is comprised of:

- Executive Director
- Associate Director
- Business Office Manager
- HIE Implementation and Support Analyst
- Interface and Technical Architect

These positions are supported by contracted teams providing Project Management Office support, Privacy and Security technical and compliance personnel, and other technical and policy resources as needed.

II. Risk analysis

Changes are made in red. Because all risks were re-evaluated, even those with no change are included.

<table>
<thead>
<tr>
<th>Risk Category/Event</th>
<th>Likelihood</th>
<th>Mitigation</th>
<th>Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder involvement</td>
<td>Medium</td>
<td>– Communicate regularly with stakeholders&lt;br&gt;– Delegate tasks/activities to stakeholders&lt;br&gt;– Utilize Workzone tools to monitor progress and stakeholder compliance&lt;br&gt;– Communicate with leadership of stakeholder organization if necessary to improve workgroup participation</td>
<td>Mitigation successful. Risk obsolete.</td>
</tr>
<tr>
<td>Timing to get MiHIN Shared Services Established</td>
<td>Medium</td>
<td>– Begin the creation process using experienced personnel and stakeholders immediately after the submission of the Strategic and Operational Plan&lt;br&gt;– Enlist stakeholders support throughout the process to ensure timely acceptance of bylaws</td>
<td>MiHIN established. Risk obsolete.</td>
</tr>
<tr>
<td>Ability to get contract executed with vendor by 1 October 2010</td>
<td>Medium</td>
<td>– The creation of the System Requirements Document and Pilot Specifications documents in the planning phase will greatly shorten the time required to create an RFP</td>
<td>MiHIN established. Risk obsolete.</td>
</tr>
<tr>
<td>Risk Description</td>
<td>Risk Level</td>
<td>Mitigation Plan</td>
<td>Severity Level</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>------------</td>
<td>----------------------------------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
</tbody>
</table>
| **Acquisition and implementation costs too high**                                | Low        | - Develop a RFP that will appeal to the largest possible number of software and hardware vendors by encouraging vendors to submit joint responses that package all hardware, software, and implementation support into a single proposal.  
- Seek component pricing analysis and comparison  
- More informed selection of components and services | This risk did not occur and is obsolete. |
| **Stakeholder support Additional stakeholders, multiple types**                  | Medium     | - Ensure strong participation in governance by sub-state HIEs and ensure they are active participants in implementation decisions and the attainment of milestones  
- Communicate regularly with stakeholders  
- Delegate tasks/activities to stakeholders  
- Utilize Workzone tools to monitor progress and stakeholder compliance  
- Communicate with leadership of stakeholder organization if necessary to improve workgroup participation | Mitigation successful for initial set of stakeholders, plan is sound for new stakeholders. |
| **Project completion due to conflicting priorities of involved stakeholders**    | Low        | - Communicate regularly with stakeholders  
- Address need for HIE priority with leadership of stakeholder organizations | No change. This risk remains very low and the mitigation strategy is sound. |
| **Political influence delays project timeline or direction**                     | Low        | - Communicate regularly with leaders of key stakeholder organizations  
- Immediate communication of politically motivated forces to SOM leadership for early intervention | No change. This risk remains very low and the mitigation strategy is sound. |
| **Conflict with ARRA grant timelines**                                          | Medium     | - Manage non-grant tasks given to contractor  
- Ensure grant data gathering and writing tasks are a priority | No update. This risk remains medium and the mitigation strategy is sound. |
| **Conflict with ONC priorities and timelines detracts from state-level efforts**| Medium-high| - Utilize contract staff to monitor and comply with federal policy changes  
- Implement sustainability plan  
- Ensure that actions are meaningful and helpful to the development of statewide HIE | Risk added. |
| **Failure to accomplish implementations**                                        | Low        | - Thoroughly review the technologies to be implemented  
- Thoroughly vet the organizations that will participate in deployment phases assessing for capability to implement  
- Provide methods-based project management along with technical and process support to implementing organizations | No change. |
<table>
<thead>
<tr>
<th>Issue</th>
<th>Category</th>
<th>Risk Rating</th>
<th>Mitigation Strategy</th>
<th>Recommendation</th>
</tr>
</thead>
</table>
| Insufficient matching funds from stakeholders                         | Medium   |             | – Communicate need for and expectation of key stakeholders leadership  
– Engage stakeholders in developing and implementing matching fund strategy                                                                                                                                                                                                                                                                                                | Participating sub-state HIEs have agreed to sufficient matching funds, and the State participation remains strong. |
| Cost over-run                                                         | Low      |             | – Routine management of contract expenses  
– Routine management of budget and changes in scope of work that would impact budget                                                                                                                                                                                                                                                                                    | No change. This risk remains very low and the mitigation strategy is sound.                                 |
| Sub-state HIEs don’t evolve in a timely manner, impacting MiHIN’s customer base and ability to generate revenue | Medium - High |             | – Coordinate the outreach, marketing and educational activities with the State’s (REC) and the Medicaid EHR Incentive program to promote sub-state HIEs and provide relevant information to target audiences that may utilize the services of a sub-state HIE  
– Utilize multiple policy levers to promote transactions and reporting to come from providers through the sub-state HIEs to the State  
- Prioritize the core technologies and use cases that are most valuable to sub-state HIEs  
– Fund the initial sub-state HIEs to develop the necessary organizational and technical infrastructure to connect to the MiHIN Shared Services | No change. This risk remains medium-high and the mitigation strategy is sound.                                |
| Architecture Model                                                   | Lowered  |             | – Build the MiHIN Shared Services incrementally ensuring that each part works and is valuable before adding new capabilities  
– Vendor selection: strong multi-vendor management and coordination  
- Strong adherence to national standards, formal adoption of NwHIN, CONNECT, and DIRECT, seeking vendor neutrality  
– Offset risks by contract terms                                                                                                                                                                                                                                                                      | Added new elements to mitigation strategy to lower risk and increase probability of success.                |
| Leveraging Existing Technology                                        | Low - Medium |             | – Initially, attempt only to leverage value-added networks that are already in place as opposed to trying to leverage core components of the technology  
– In the future, attempt to leverage core components to function as redundant services once the core components are working  
- Contracting for targeted innovations for required missing components not commercially available | Added new elements to mitigation strategy to lower risk and increase probability of success.                |
| Consumer Perception                                                  | Change to high |             | – Present refined and easily understandable educational and outreach materials for both providers and consumers  
– Appoint privacy and security officers for the MiHIN Shared Services Governance Board  
– Assure consistent guidance materials for Sub-state HIEs                                                                                                                                                                                                                                                | The mitigation strategy is sound (need to implement some provisions).                                      |
III. Project Plan 2012-2013

Please see Appendix B.

---

<table>
<thead>
<tr>
<th>Confusion among sub-state HIEs regarding compliance with state and federal law</th>
<th>Change to high</th>
</tr>
</thead>
<tbody>
<tr>
<td>✖ Willingness and flexibility to adjust consent options as technology evolves</td>
<td>✖ Involve sub-state HIEs in the future development of HIE policies to ensure that concerns are addressed</td>
</tr>
<tr>
<td>✖ Appoint a Privacy Officer and a Security Officer to lead efforts</td>
<td>✖ Review and update the Comparative Analysis Matrix</td>
</tr>
<tr>
<td>✖ Engage a health law attorney to issue opinions that can be trusted by all sub-state HIEs</td>
<td>✖ Require all sub-state HIEs to have a contractual agreement with the MiHIN Core Services Network</td>
</tr>
</tbody>
</table>

The mitigation strategy is sound (need to implement some provisions).
# Tracking Program Process

<table>
<thead>
<tr>
<th>Program Priority</th>
<th>Status as of December, 2011</th>
<th>Target for December 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. % of pharmacies participating in ePrescribing</td>
<td>94.10%</td>
<td>97%</td>
</tr>
<tr>
<td>2. % of labs sending electronic lab results to providers in a structured format</td>
<td>53.7%</td>
<td></td>
</tr>
<tr>
<td>3. % of labs sending electronic lab results to providers using LOINC</td>
<td>19%</td>
<td></td>
</tr>
<tr>
<td>4. % of hospitals sharing electronic care summaries with unaffiliated hospitals and providers</td>
<td>31.86%</td>
<td>38%</td>
</tr>
<tr>
<td>5. % of ambulatory providers electronically sharing care summaries with other providers</td>
<td>28.43%</td>
<td>35%</td>
</tr>
<tr>
<td>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 %</td>
<td>No (State level)</td>
<td>Yes (State Level)</td>
</tr>
<tr>
<td>7. Immunization registries receiving electronic data produced by EHRs. Data are received in HL7 2.3.1 or 2.5.1 formats using CVX codes - Yes/No or %</td>
<td>Yes (State Level)</td>
<td>Yes (State Level)</td>
</tr>
<tr>
<td>8. Public Health agencies receiving electronic surveillance hospital data produced by EHRs in HL7 2.3.1 or 2.5.1 formats (using CDC reference guide) - Yes/No or %</td>
<td>Yes (State Level)</td>
<td>Yes (State Level)</td>
</tr>
<tr>
<td>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 %</td>
<td>No (State Level)</td>
<td>Yes (State Level)</td>
</tr>
</tbody>
</table>
### Michigan HIE Program Components

- Support for Sub-state HIEs
- MiHIN organizational status and governance structure
- Relationship to State of Michigan and other ONC grantees
- MiHIN shared services

### Outputs

#### Activities
- Promote trust
- Promote shared vision
- Coordination
- Build technical infrastructure
- Develop and promote use of standards
- Provide legal framework

#### Participation
- Payers
- Primary Care and Specialty Providers
- Pharmacies
- Laboratory and Radiology Centers
- Hospitals
- State of Michigan
- Patients/public
- Other providers (e.g., Public Health Departments, Long-term Care, Community Mental Health)

### Outcomes -- Impact

#### Short-Medium-Term
- Care providers utilize enhanced access to electronic data, and bring the power of computability and communications to transform care processes in the following ways:
  1. Medication reconciliation
  2. Plan appropriate treatment
  3. Coordinate care across settings, including shared care plans
  4. Follow-up on testing and referrals
  5. Communicate with patients and members of the healthcare team
  6. Use clinical decision support to identify needed care and avoid errors
  7. Use population health management tools
  8. Monitor quality

#### Long-Term
- Efficiency - healthcare services utilization and cost
- Quality – provision of gold standard care in chronic disease management and prevention and screening
- Health – reduction in events such as: readmissions, preventable hospitalization, adverse medication effects
- Experience – provider and patient experience of communications and access to information in the process of healthcare decision-making
Appendix B: Detailed Privacy and Security Gap Analysis
MiHIN has included privacy and security domains in strategic and operational planning from inception, so this gap analysis has the following objectives:

- Describe the current adoption of the Privacy and Security domains by MiHIN and the sub-state HIEs;
- Identify where challenges are faced in particular areas; and
- Suggest remediation. MiHIN will convene a stakeholder conference June 19, 2012 to further explore these areas and suggest an action plan.

MiHIN Shared Services currently supports and manages a number of Working Groups to address five critical areas:

1. Operations / Production Support Working Group: Immediate/near-term matters affecting current/short-term production and operations (e.g. on-boarding, problem resolution/escalation, scheduling defined Use Cases for development/testing/production)
4. Governance, Rules & Dispute Resolution Working Group: Resolves impasses, conflicts, and issues, or takes them to the MiHIN Board if necessary/appropriate; reviews anything that would go to the Board
5. Use Case Working Group – This group includes “definitional” activities such as use case requirements determination and pilots. Once a Use Case is defined and ready for scheduling, it is handed off to the Operations/Production Support WG

In addition, the MiHIN Operations Advisory Committee (MOAC) is meeting regularly to provide support and guidance to MiHIN operations.

DOMAINS

I. Optional Domain: Individual Access  Individuals should be provided with a simple and timely means to access and obtain their individually identifiable health information (IIHI) in a readable form and format.  
Correction Individuals should be provided with a timely means to dispute the accuracy or integrity of their IIHI, and to have erroneous information corrected or to have a dispute documented if their requests are denied.

A. FINDING/CURRENT STATE

- Michigan currently has multiple operating sub-state HIEs with capability to share health information electronically. However, electronic access to health records for individuals is not generally a priority for Michigan’s HIEs and their participants, resulting in limited electronic access for consumers.
- The MiHIN Qualified Data Sharing Organization Agreement includes language requiring the Qualified Organization to comply with the following:
  o providing consumers with the ability to access to their health records
  o providing consumers with the opportunity to make amendments to their own health record
- Most healthcare consumers in Michigan do not currently have a convenient and meaningful way to electronically access any of their health information.
• Most Michigan consumers are not positioned to view their health information, so will not likely make corrections or add information that may be missing.

B. CONCLUSION GAP/NO GAP
• Sub-state HIEs generally do not offer consumers electronic access to their IIHI
• MiHIN does not offer consumers electronic access to their IIHI
• Uncertain on where and how consumers will access their health records

C. REMEDIATION
• Develop a use case for the sub-state HIEs to address individual access and correction
• Convene sub-state HIEs to build a consensus driven approach to addressing individual access and correction issues, including:
  o Developing a plan to allow patients to conveniently, and securely access their IIHI electronically
  o Developing a plan for creating clearly defined processes for:
    ▪ Consumers to request corrections
    ▪ Consumers to resolve disputes about information accuracy
    ▪ Document when requests are denied
• Identifying a plan for how the sub-state HIEs and MiHIN Shared Services can address individual access and correction.
• Determining what access consumers currently have as a baseline

II. Optional Domain: Openness and Transparency There should be openness and transparency about policies, procedures, and technologies that directly affect individuals and/or their individually identifiable health information.

A. FINDING
Michigan recognizes that openness and transparency are key ingredients to building accountability and trust. As HIE continues to develop, MiHIN will plan to empower consumers, maximize technology and strengthen accountability.
• Throughout the MiHIN process, stakeholder workgroups have provided input and guidance in shaping how HIE would be implemented across the state. Meetings were open to the public and stakeholder workgroups were able to constructively contribute to Michigan’s HIE roadmap.
• Policies for the MiHIN Shared Services are not yet finalized
• Variances in quantity and kind of information available online from sub-state HIEs
• Multiple informative websites exist with information about MiHIN:
  o www.mihanss.net provides information and links for consumers and providers
  o www.michigan.gov/mihan provides information from the State of Michigan on the MiHIN Shared Services Operational and Strategic Plans
  o www.michigan.gov/mdch/0,1607,7-132-2946_44257--,00.html provides information about the Michigan Health Information Technology Commission
  o Michigan Health Connect http://michiganhealthconnect.org/
  o Great Lakes Information Exchange (GLHIE) http://glhie.org/
  o Jackson Community Medical Records http://www.jcmr.org/
  o My Health Information Network (my1HIE) http://www.my1hie.com/
  o Southeast Michigan HIE (SEMHIE) http://semhie.org/
  o Upper Peninsula Health Care Network (UPHCN) http://www.uphc.org/
B. CONCLUSION GAP/NO GAP

- MiHIN Shared Services policies are not currently posted online for consumers to view
- Not all sub-state HIEs have policies readily available to consumers
- General lack of outreach and educational materials specifically addressing how consumer health information will be collected, accessed and used.
- No current coordinated efforts offering provider education on how to discuss HIE with consumers

C. REMEDIATION

- Plan for the development of capabilities that will allow consumers to determine:
  - what information exists about them
  - how it is collected, used or disclosed and
  - whether they can exercise choice over any of these elements
- Plan for process to ensure that all MiHIN and sub-state policies and procedures consistent with the Privacy and Security Framework
- Plan to ensure that policies are clearly communicated to consumers
- Plan for development of educational and outreach materials that are ADA compliant
- Plan for development of educational materials for Michigan’s non-English speaking consumers
- Plan for a methodology to provide consistent and on point consumer messaging and outreach that highlight the most relevant forms of use and disclosure, to encourage clearer consumer understanding

III. Optional Domain: Individual Choice

Individuals should be provided a reasonable opportunity and capability to make informed decisions about the collection, use and disclosure of their individually identifiable health information. Individuals should be able to designate someone (family member, caregiver, domestic partner or legal guardian) to make decisions on their behalf. This process should be fair and not burdensome.

A. FINDING

- Michigan has invested time and resources into identifying stakeholder concerns with the sharing of information and specifically with consent.
- Michigan recognizes the significance of allowing consumers to have the opportunity to decide how their health information will be shared in meaningful ways.
- Michigan chose an Informed Opt Out Policy
- Informed Opt Out was presented and approved by the HIT Commission but not formally codified

B. CONCLUSION GAP/NO GAP

- There is no “Opt Out” legislation in Michigan. The MiHIN Resource Center developed Michigan’s Informed Opt Out policy; however, the policy does not have the force of law, unlike the “opt out’ provision for the Michigan Care Improvement Registry.
- Different sub-state HIEs may have different requirements for consent.
- Different provider types may have different legal requirements for consent for certain types of IIHI (for Mental Health, Substance Abuse and HIV AIDS)
- Meaningful granularity will require addressing Michigan’s consent requirements for health information.
C. REMEDIATION

- The Security and Privacy Working Group will work with the Operations/Production Support Working Group and the Use Case Working Group to plan and discuss how to reach consensus / create a plan on how to address the following:
  - Plan to leverage the existing recommendation for Informed Opt Out
  - Plan to develop policies and technical approaches that offer individuals more granular choice than having all or none of their information exchanged
  - Plan to offer guidance materials for sub-state HIEs and will promote meaningful choice as the standard and will include the following principles:
    - Consumers will have advance knowledge/time to make the choice to participate
    - Non-participation will not be used for discriminatory purposes or as condition for receiving medical treatment
    - Full transparency and education will be provided in a meaningful way
    - Consumer choice will be made commensurate with circumstances for why IIHI is exchanged
    - Consumer choice will be consistent with patient expectations
    - Consumers may revoke consent at any time
    - Consumer choice should be offered to each patient on a prospective basis and periodically renewed.
    - Consumers who consent to participate should have choice about which providers can access their information.
    - Provider burden should be minimized to the extent practicable.

IV. Domain: Collection, Use and Disclosure Limitation Individually identifiable health information should be collected, used and/or disclosed only to the extent necessary to accomplish a specified purpose and never to discriminate inappropriately. This information should only be collected, used or disclosed to accomplish a specific purpose, and purposes of information exchange should be specified.

A. FINDING:

- Covered entities in Michigan are required to have HIPAA Privacy and Security Policies in place. These policies govern minimum necessary access as it applies to providers.
- MiHIN has an extensive baseline Privacy and Security policy framework in place.
- The MiHIN Privacy and Security policies will be reviewed quarterly and updated as needed to meet changing industry best practices, trends, threats, and technology
- MiHIN has in place a strong governance architecture built on agreements with the sub-state HIEs that consists of the following agreements:
  - Qualified Data Sharing Organization Agreements
  - Data Use Agreements
  - Business Associate Agreements
- GLHIE has incorporated the principles from Nationwide Privacy and Security Framework For Electronic Exchange of Individually Identifiable Health Information into its privacy policies, which can be found on their website
B. CONCLUSION GAP/NO GAP
- Policy specifying a requirement for a provider “treatment” relationship in order to grant provider access to IIHI has not yet been developed
- Uncertain of current use and access policies in place for sub-state HIEs

C. REMEDIATION
- MiHIN Shared Services will convene stakeholders to build a consensus approach in conjunction with the Security and Privacy Working Group
- The Security and Privacy Working Group will review current sub-state policies and will:
  - Plan to define MiHIN’s role in guiding the sub-state HIES on areas such as use and access.
  - Finalize MiHIN Privacy and Security Policies
  - Plan to draft additional policy language and guidance for sub-state HIEs recommending attestation such as patient registration, prescriptions, consults, and referrals to verify that provider’s accessing IIHI have a treatment relationship with the consumer.

V. Optional Domain: Data Quality and Integrity  Persons and entities should take reasonable steps to ensure that individually identifiable health information is complete, accurate and up to date to the extent necessary for the person’s or entity’s intended purposes and has not been altered or destroyed in an unauthorized manner.

A. FINDING
- MiHIN has a baseline policy framework in place helping to ensure that data being exchanged via the MiHIN is complete and accurate
- Sub-state HIEs have policies and procedures in place
- The MiHIN Qualified Data Sharing Organization Agreement includes language requiring the QO to comply with Data Quality and Integrity Standards

B. CONCLUSION GAP/NO GAP
- Undetermined how MiHIN policies will flow to sub-state HIEs
- Processes for communicating corrections in a timely manner has not been developed
- Uncertain of current use and access policies in place for sub-state HIEs

C. REMEDIATION
- The Use Case Working Group will develop a use case to address Data Quality and Integrity in conjunction with the Security and Privacy Working Group
- MiHIN Shared Services will convene stakeholders to discuss data quality and integrity issues to address the following:
  - Plan to implement strategies and approaches to ensure the data exchanged are complete and accurate and that patients are correctly matched with their data.
  - Plan to develop processes to detect, prevent, and mitigate any unauthorized changes to, or deletions of, individually identifiable health information.
  - Develop processes to communicate corrections in a timely manner
  - Plan to document how each sub-state HIE will report patient matching approach and accuracy threshold achieved
VI. **Domain: Safeguards** Individually identifiable health information should be protected with reasonable administrative, technical and physical safeguards to ensure its confidentiality, integrity and availability and to prevent unauthorized or inappropriate access, use or disclosure.

A. **FINDING**
   - MIHIN has a baseline policy framework in place helping to ensure that data being exchanged via the MiHIN is authenticated and authorized, including an Authentication Policy requiring verification
   - The MiHIN Qualified Data Sharing Organization Agreement includes language requiring the QO to comply with reasonable administrative, technical and physical safeguards

B. **CONCLUSION GAP/NO GAP**
   - Policies of sub-state HIEs vary
   - Minimum standards of agreements and HIPAA may not be adequate
   - State laws requiring additional consent for specially protected health information may impact disclosure

C. **REMEDIATION**
   - Convene stakeholders to discuss privacy and security issues and reach consensus /create a plan on how to address/the following:
     o Plan to develop processes to detect, prevent, and mitigate any unauthorized changes to, or deletions of, individually identifiable health information.
     o Plan to offer guidance to sub-state HIEs regarding thorough awareness training and assessments of risks and vulnerabilities using the ONC’s State HIE Checklist
     o Plan to promote encryption
     o Plan to support sub-state HIES exchanging only encrypted data
     o Plan to establish guidance to promote strong identity proofing and authentication policies for user access for sub-state HIES using NIST 800-63 version 1.0.23 as a guide and resource.

VII. **Domain: Accountability** These principles should be implemented and adherence assured through appropriate monitoring and other means and methods should be in place to report and mitigate non-adherence and breaches.

A. **FINDING**
   - MIHIN Security and Privacy Work Group meets bi-weekly to identify and resolve issues
   - MIHIN has a baseline policy for Response and Reporting
   - MIHIN has a Privacy and Security Coordinator to manage reporting of breaches
   - The MiHIN Qualified Data Sharing Organization Agreement includes language requiring the QO to comply with data accountability

B. **CONCLUSION GAP/NO GAP**
   - Undefined how MiHIN policies will flow to sub-state HIEs
   - Processes for communicating corrections in a timely manner has not been developed

C. **REMEDIATION**
   - Convene stakeholders to discuss privacy and security issues and reach consensus /create a plan on how to address/the following:
o Determine how to get the appropriate monitoring mechanisms in place to report and mitigate non-adherence to policies and breaches
o Provide guidance to sub-state HIEs to make sure that reasonable mitigation strategies are established and implemented as appropriate, including notice to individuals of privacy violations and security breaches.
o Establish guidance for sub-state HIEs for reasonable mitigation strategies
o Encourage implementation of reasonable mitigation strategies
Appendix C: Project Plan
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Appendix J: M-CEITA Definition of Other Underserved Settings
Michigan Center for Effective IT Adoption (M-CEITA)

Michigan has been in a recession for six years running due to permanent changes in the auto industry and recently held the highest unemployment rate in the nation for four years in a row. These conditions have put incredible demand on all levels and settings of the health care system and most settings have dramatically increased the numbers of uninsured, underinsured and other medically underserved populations while their incomes have held steady or decreased. To adequately address the need for primary care HIT services in Michigan, M-CEITA proposes the following definition of "other settings that predominantly serve uninsured, underinsured, and medically underserved populations" and of "collaborative practices" with the understanding that M-CEITA is limited to no more than 20% of the REC’s total providers falling into these categories.

Definition of Other Underserved Settings

1. State and County correctional settings, where the REC can claim up to 10 PPCPs per practice (i.e. physical location/geographic) site.

2. School-Based and School-Linked Health Centers as identified by the School-Community Health Alliance of Michigan, where the REC can claim up to 10 PPCPs per practice (i.e. physical location/geographic) site.

3. Public health clinics defined as any health care clinic environment operated by a local public health agency (Michigan Public Health Code, MCL 368-1978-2-24) that provides primary patient care, or a sub-section of primary patient care, in the State of Michigan, where the REC can claim up to 10 PPCPs per practice (i.e. physical location/geographic) site.

4. Pediatrician offices seeing at least 10% combined Medicaid, MIChild, and uncompensated care where the REC can claim up to 10 PPCPs per practice (i.e. physical location/geographic) site.

5. Visiting and home help providers providing primary care services in alternative settings. Such provider’s home office would be considered the site location; additional office locations would be considered additional geographic sites. The REC can claim up to 10 PPCPs per practice (i.e. physical location/geographic) site.

6. Primary care settings in which at least 15% of care consists of any combination of Medicaid and uninsured (i.e. 10% Medicaid plus 5% uninsured would equal a total of 20% underserved and qualify the clinic for M-CEITA services), where the REC can claim up to 10 PPCPs per practice (i.e. physical location/geographic) site. These settings include but are not limited to:
   a. Hospital-owned outpatient clinics which share the same tax ID number as the affiliated hospital (i.e. each clinic is a site for which the REC can claim up to 10 PPCPs)
   b. Private practices with more than 10 primary care providers

7. Rural practices if the practice(s) is located or primarily serves patients residing in a zip code with a U.S. Census Rural-Urban Commuting Area (RUCA) Code of 4 or higher, the REC can claim up to 10 PPCPs per practice (i.e. physical location/geographic) site.
8. Practices located in and serving an area that has been identified as a Health Professional Shortage Area (HPSA) as defined at 42 USC 254e and 42 CFR § 5.2, then the REC can claim up to 10 PPCPs per practice (i.e. physical location/geographic) site.

9. Practices located in and serving in an “economically depressed” county, defined as where the county poverty level is higher than the national average poverty level based on data from the most recently available from the US Census Bureau, where the REC can claim up to 10 PPCPs per practice (i.e. physical location/geographic) site.

10. Practices that predominantly serve an ethnic, religious, cultural or refugee population(s) that face barriers to and disparities in health care (e.g. metropolitan Detroit has more than 300,000 Arab Americans including sizable numbers of recently arrived Iraqi refugees who have settled near the Middle Eastern communities in Southeast Michigan), where the REC can claim up to 10 PPCPs per practice (i.e. physical location/geographic) site. disparity

11. M-CEITA believes there may be other practices that predominantly serve uninsured, underinsured and medically underserved populations that fall outside of the existing underserved definitions. M-CEITA's policy is to consider those practices on a case-by-case basis and, if required, to present such cases to ONC for approval.

Practice Consortium Definition

1. The REC can claim up to 10 PPCPs per practice (i.e. physical location/geographic) site in collaborative practices where either:
   a. Individual practice sites were historically independent
   b. Individual practice sites bill commonly but function independently
Appendix K: Comprehensive Audit Plan
Michigan will conduct oversight of its EHR Incentive Program payments to providers in the following manner:

Selection of Professionals for Audit
• MDCH will audit a subset (sample) of all incentive payment recipients. MDCH will audit at least one out of every 100 Eligible Professional (EP) practices and one out of 25 Eligible Hospitals (EH). When an EP practice is selected, all EPs within each practice will be audited. Selection will be risk-based as opposed to random. Incentive Program validation processes will identify providers whose responses raise concerns, e.g., eligibility data that consists of rounded numbers, encounter percentages that are close to the cut-offs, etc.

Commencement of Audits
• MDCH began making payments in late July 2011 and will begin audits in December 2011 for providers.

Staffing for Audit Work
• As much audit work as feasible will be conducted in-house using information and documentation supplied by the providers themselves and third party sources. Work that cannot be conducted in-house—e.g., examining documentation on-site and then requesting to review a random subset of substantiating documentation—will be completed through in-person visits to provider offices. During audit field work, verification work performed in-house may also be subject to secondary, in-person checks.
• In-house audit work will be performed by MDCH’s EHR Incentive Program staff (EHR) or MDCH’s Hospital Division (Hospital) depending on the type of provider that is being audited.
• Field work will be conducted by professional auditors employed by MDCH’s Program Integrity (PI) unit, with input from MDCH’s Medicaid EHR Incentive Program staff.

Responsibility
Below details who will be responsible for determining provider compliance with each program requirement, whether the requirement will be verified pre payment or post payment and whether the verification will be done via an automated process or by a manual process. Additionally, see the below check list that will be used to document the audit steps that have been completed.
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## Medicaid EHR Incentive Program
### Eligibility Verification Checklist

**State Medicaid Agency:**

**Person Completing Form:**

**E-Mail Address:**

---

### Explanation of Numbered Notes

1. EP - Eligible Professional
2. EH - Eligible Hospital
3. American Recovery & Reinvestment Act of 2009 (Public Law 111-5); Health Information Technology for Economic & Clinical Health Act (HITECH)
4. 42 CFR Parts 412, 413, 422 and 495; Medicare and Medicaid Programs; EHR Incentive Program Final Rule.

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### Practitioner Type

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#### 1. EP or EH must be one of the permissible professional or hospital types
- 42 USC § 1396b(h)(2)(A-B)
- § 495.368 (3)(1)(i)(ii) Combating fraud and abuse

---

### Qualifications

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#### 2. EP or EH must be licensed to practice in the State
- § 495.368 (3)(1)(i)(ii) Combating fraud and abuse

#### 3. EP or EH must be a Medicaid provider in that state
- § 495.304 (a) Medicaid provider scope and eligibility

#### 4. EP or EH cannot be excluded, sanctioned, or otherwise deemed ineligible to receive payments from the State (e.g., already received incentive payment)
- § 495.368 (3)(1)(i)(ii) Combating fraud and abuse

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### Medicaid EHR Incentive Program

#### Eligibility Verification Checklist (Continued)

#### Patient Volume

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<th>Applicability</th>
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<td></td>
<td>42 USC § 1396b(t)(2)(A)</td>
<td>§495.366 (b)(4) Financial oversight and monitoring of expenditures</td>
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<tr>
<td>7. EPs must have more than 50% of their patient encounters occur at an FQHC or RHC in a six month period during the prior calendar year to practice predominantly in an FQHC or RHC</td>
<td>✔</td>
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<tr>
<td></td>
<td></td>
<td>42 USC § 1396b(t)(2)(B)</td>
<td>§ 495.304(c)(1) Medicaid provider scope and eligibility</td>
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<tr>
<td>8. EH must have at least 10% Medicaid patient volume (acute care hospital only)</td>
<td>✔</td>
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</tbody>
</table>

#### Practice Location

<table>
<thead>
<tr>
<th>Eligibility Requirements</th>
<th>Applicability</th>
<th>Statute(s)</th>
<th>Final Rule(s)</th>
<th>Pre-payment Verification Process and Data Elements</th>
<th>Post-payment Review Process Risk Profile Process and Data Elements</th>
<th>SMHP (or Amendment) Citation with Date</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>✔</td>
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</table>

8. EP must not be hospital-based (more than 10% of his/her Medicaid claims must be outside POS 21 or 23)

9. EPs must practice in a PA-led FQHC or RHC if she is a Physician Assistant (PA)
## Medicaid EHR Incentive Program
### Eligibility Verification Checklist (Continued)

### Average Length of Stay

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>11. EH must have an average length of stay of 25 days or less (acute care hospital only)</td>
<td>✓</td>
<td>§ 495.312(b)(5) State Medicaid HIT plan requirements</td>
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</tbody>
</table>

### Adopt, Implement or Upgrade (YR1), Meaningful Use (YR2+)

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</thead>
<tbody>
<tr>
<td>12. EP or EH must adopt, implement, or upgrade (AtU) certified EHR technology capable of meeting meaningful use</td>
<td>✓ ✓</td>
<td>§ 495.366(e) Financial oversight and monitoring of expenditures</td>
<td></td>
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</tr>
<tr>
<td>13. EP or EH must meaningfully use (MU) certified EHR technology</td>
<td>✓ ✓</td>
<td>§ 495.366(e) Financial oversight and monitoring of expenditures</td>
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### Fiscal Relationship

<table>
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<th>Post-payment Review Process Risk Profile Process and Data Elements</th>
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<tbody>
<tr>
<td>14. Managed care providers must not receive EHR incentive payment that exceeds 105 percent of their capitated rate if Medicaid is the payer, unless incentives are documented and actuarial sound.</td>
<td>✓</td>
<td>§ 495.366(e)(7) Financial oversight and monitoring of expenditures (See also § 438.6(c)(5)(ii))</td>
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</tbody>
</table>
Questions

• Please address questions about this audit plan to:

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  Analyst
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  Capitol Commons Center, 5th Floor
  400 South Pine Street
  Lansing, MI 48913
  Office: (517) 241-0464
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