Impact of Phase C

The following table displays the benefits of empowering Michigan citizens and also demonstrates the beneficiaries. Some beneficiaries have stronger benefits than others due to the type of information being exchanged or the direction of the flow.

Beneficiaries	Benefits
Patients and Families	• Improves quality of care due to availability of all pertinent information at each point of care • Provides greater empowerment – each person controls his or her own PHR. Individuals decide which parts of their PHR can be accessed, by whom and for how long • Allows patient's to have the choice to include information from one's entire lifetime and from all health care providers • Provides accessibility from any place at any time • Transparency - individuals can see who entered each piece of data, where it was transferred from and who has viewed it • Permits easy exchange of information with other health information systems and health professionals
Physicians	• Provides additional information is available for decision making and planning through a continuously updated personal record • Allows for electronic exchange of information with other health information systems and health professionals • Improves access to medical information
Employers	• Lowers costs due to reduction of duplication of services (tests, procedures, etc.) • Improves integration of care, including programs such as disease and wellness management. • Improves lost work days • Assists to provide a healthy workforce • Evaluates and rewards high-quality care by looking at aggregate data
Public Health	• Allows researchers and advocacy organizations to assess patterns of disease and treatment across the health care system • Provides ability to detect disease outbreaks
Government	• Gains in efficiency as more medical decisions are based on current and accurate information

Challenges of Phase C

The most critical legal, technical and financial challenges in empowering Michigan citizens are detailed below. In order for a phase to succeed these challenges will need to be addressed.

Legal Challenges / Issues

- The HIE must carefully consider the nature and scope of its relationship with the patient (in Phases A and B, the relationship is between the patient and health care providers, not the patient and the HIE).

- Legal issues associated with an HIE exporting data directly to the patient vs. the patient having direct access to data within the repository must be examined. Legal and practical issues are likely to arise if the patient has direct access rights to information held by the HIE, especially if the patient is able to add or change data in any way.

- Determination of who has access rights and developing the process to ensure only authorized users can see patient data will need to be addressed. These include patient designees (e.g. designees under Powers of Attorney for Health Care, additional clinicians, other third parties) and individuals who are legally authorized to act on patient's behalf (e.g. guardians, parents of minors).

- If the system is designed to allow patients to authorize and direct the HIE to release information for non-clinical uses, the complexity of the system and potential for errors are increased.

Technical Challenges / Issues

For more details regarding overall technical issues and resources see Appendix H: Technology Overview

- Will require creating large scale authentication schemes and mechanisms for patient authentication (no current solutions/models exist)

- Currently there is not a consistent framework for presenting and codifying information

- There will be a need to build and support HIT infrastructure and systems that are scalable

- There will be a need to plan for and manage systems with infrastructure significantly more robust and wide spread than in Phases A and B

- A process for managing, reviewing and annotating data will be required

- Standards for de-identifying patient data for appropriate use will need to be agreed upon, adopted and implemented

- There are currently no published standards for data elements required to adequately populate a PHR

Financial Challenges / Issues

- Lack of proven financing strategy or demonstrated return-on-investment for implementation of PHR

- Limited understanding of or experience addressing patient and consumer information needs

- Lack of general consensus about a PHR business model discourages allocation of funding

Role of State of Michigan Government

To maximize the benefits of continued support, funding and advocacy of regional initiatives throughout the state, it is vitally important to seek the most economical and easily deployable means to realize the benefits of secure and available HIE. The main role of the State of Michigan government is as a state-wide convener and collaborator. Thirty-eight states across the country are taking the lead and promoting and encouraging dialog, convening stakeholders and providing guidance to health information exchange. Governor Granholm, MDCH and MDIT are taking a leadership role in offering support and guidance to Michigan's fledgling regional health exchanges and are taking steps through this project to integrate the activities of Michigan's local and regional efforts. Though most decisions regarding the scope and the direction of HIT and HIE initiatives will and must, be made at the regional level where healthcare is delivered, the following recommendations should be implemented at the state-level to support the MiHIN vision and Michigan's HIE initiatives:

Legal Interpretation and Consensus

1. ***Reduce Legal and Regulatory Restrictions for the Sharing of Electronic Health Data***
   To accomplish the goal of efficient HIE, the State will need to modify certain laws to remove legal and regulatory barriers to the electronic exchange of health information, while ensuring consumer protection of privacy and security of health information. Development of medical trading areas and an infrastructure which is flexible and empowered is essential, as is the ability of physicians and clinical service providers to cooperate in the development of HIE. As such, modifications will be needed in current state and federal legislation that continue to hinder HIE development (e.g. Stark, Anti-kickback). In addition, any new state privacy and security regulations should be consistent with federal requirements and should not unduly hinder or prohibit the necessary flow of health care data. Due to rapid changes that occur in today's technology market, legislation and related regulations should be flexible and focus on the end rather than the means, to permit prompt accommodation of advances in technology.

   Consideration should be given to revising laws relating to medical records and the disclosure of health information for consistency with specific applicability to HIT and HIE. Current laws were developed for paper records and processes. The requirements for medical records are scattered throughout Michigan Compiled Laws and the Administrative Code. Requirements for health information and medical records are defined by provider type or type of health information, and lack consistency in requirements such as confidentiality, consent, and required contents of medical records. Standards for breach and sanctions also vary. Additionally, consideration should be given to developing a single uniform statute to replace the myriad of statutes that regulate medical records and the use and disclosure of specific types of health care information with consistent definitions and terminology.

2. **Facilitate State-wide Consensus of Legal Opinion**
Today there are federal and state laws which are in conflict. This adds to the complexity of implementing HIE & HIT. In order to encourage participation in regional initiatives by potential HIE participants, in regards to the possible violation of federal and state law, the State needs to facilitate consensus of legal opinion state-wide. For example, the federal Stark Law limits the investment options to provide physicians with HIT subsidies. A clear process should be created for obtaining either one or more advisory opinions from the federal government on behalf of all Michigan regional initiatives with regards to Stark Law compliance. This would permit reliable guidance and would address concerns for consistency across all regional initiatives. Additionally, rules should be promulgated to incorporate revisions to the federal Stark law so that federal and state Stark prohibitions and exceptions are the same. Similar consensus of opinion regarding security and privacy issues will also be needed.

Standard Setting / Technical Support

1. **Advocate for the Use of National Standards (e.g. for interoperability)**
As national standards for interoperability and data exchange developed and are adopted, the state should advocate, promote, align with state standards and foster adoption of the use of national standards by all Michigan's HIEs. The use of such standards will provide organizations with the interoperability necessary to electronically move clinical information between disparate provider organizations.

2. **Provide a Forum for Regional Input to National Standard Setting Bodies**
National standard setting bodies will need input from those organizations and people working with the day-to-day activities of health information exchange. In order to create a state-wide voice and efficiently and effectively communicate this information on a national level, there should be a stat-supported forum for gathering and communicating this information.

3. **Promote the Development of a State-wide Master Patient Index and Record Locator Service**
The state-wide master patient index (MPI) and record locator service can leverage economies of scale due to the need for all regional HIEs to use MPIs and record locator services to accurately exchange patient data from disparate system and providers.

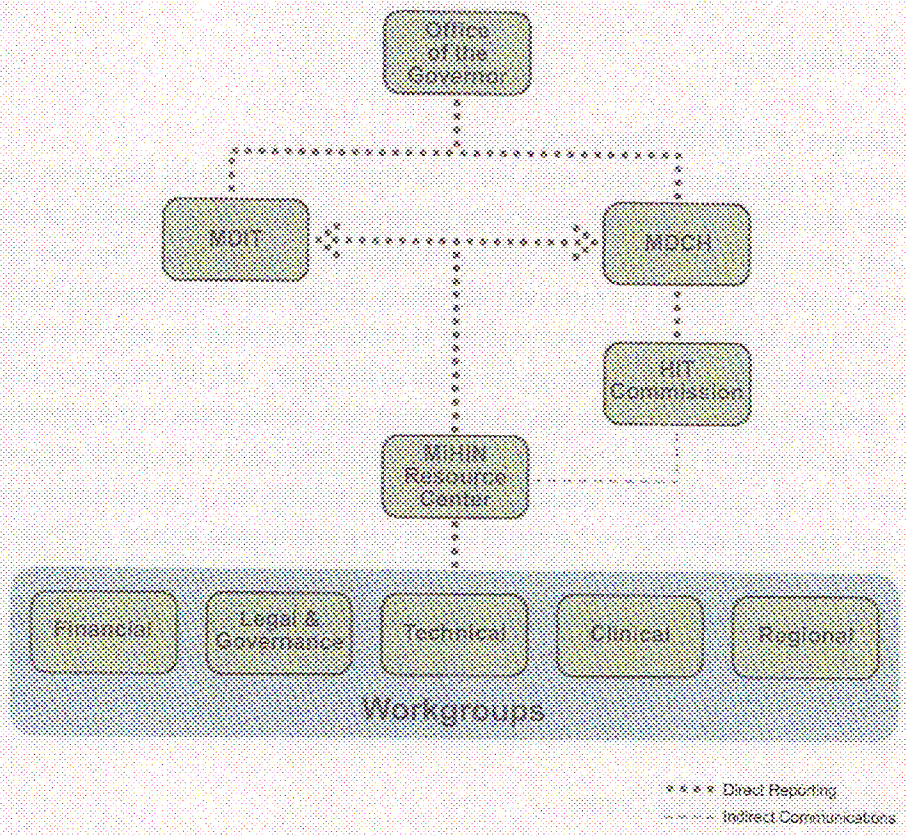
4. **Identify and Develop HIT and HIE Solutions for Medically Under-served Areas, Technology Challenged Areas or Areas Falling Between Regional HIEs**
Develop HIE and HIT strategies and plans to ensure under-served areas and those that fall between naturally occurring regional HIE efforts have adequate health care information available for citizens in those areas.

State-wide Coordination

1. **Establishment of a MiHIN Resource Center**

   With respect to operations, a state-wide HIE coordinating body (MiHIN Resource Center) should be established and funded to provide day-to-day governance, guidance, direction and coordination to the design and implementation of regional HIEs and state-wide exchanges. The role of the MiHIN Resource Center is to assist the regional HIE efforts across the state, focusing daily on operations such as resource staffing and communications in order to increase the adoption rate and successful implementation of regional HIEs across the State of Michigan. MiHIN Resource Center should have full-time staff that would coordinate day-to-day tasks and deliverables to the regional HIEs and Michigan Department of Community Health. The Resource Center would be responsible for working with national resources (eHealth Initiative, Markle Foundation, etc.) As discussed previously, health care is local and, as such, the exchange of health care information occurs primarily within medical trading areas. However, there are many areas that regional HIEs will need assistance with including, but not limited to: interpreting legal statutes, representation at state and national levels, identification and promotion of standard policies, procedures for HIE operation, governance, and financing as well as for technological infrastructures; and education and awareness about national initiatives and standards.

   Diagram I: MiHIN Resource Center



Several specific recommendations have been made regarding the activities of this Resource Center:

A. Serve as a Center of Excellence or Resource Center for HIEs

Promote and guide the regional HIEs regarding national standards and serve as the primary resource for HIE information and the dissemination of the MiHIN Resource Guide. It will develop guidelines that will be aligned with national standards, assist in the removal of common obstacles across the regional HIEs and resolve conflicts between regional HIEs to facilitate equitable and appropriate data sharing for the benefit of patients. It will also provide guidance regarding the interpretation of applicable laws and regulations, and when appropriate, seek definitive interpretations from state and federal regulators. The selection of the legal structure for this Resource Center will need to be carefully considered; specifically the risks and benefits of creating a private corporation versus a quasi-public agency should be examined.

B. Utilize Workgroups in an Advisory Role

Using a modified version of the MiHIN *Conduit to Care* workgroup structure would allow the Resource Center to take advantage of the work and knowledge of members who have already been involved in this process. All advisory workgroups would be responsible for conducting appropriate research and engaging in meaningful dialogue regarding topics of

interest to the MiHIN Resource Center. Additional details regarding the workgroup objectives and recommended members can be found in Appendix I. Also see recommendation 2 below.

C. **Manage Workgroups and Ad Hoc Advocacy Groups**
Direct, manage and integrate input from the workgroups and various advocacy constituents (e.g. consumers, public health, etc). This would include selecting appropriate representatives and setting objectives and work plans. These advocacy groups will provide input and feedback to the MiHIN Resource Center and serve as a resource to the workgroups.

D. **Develop and Implement an Ongoing State-wide Education and Communication Plan**
Develop and deliver an education plan to inform the key stakeholders, including consumers, employers, payers and providers about HIE and its benefits. It should also monitor federal developments regarding HIT and HIE and ensure that regional stakeholders are aware of these developments. This includes representing the State of Michigan in national initiatives and standards development.

E. **Continue Development of a Reference Guide for Regional HIE efforts**
A Reference Guide has been initiated by the Regional Workgroup in order to provide guidance to those individuals and organizations undertaking the formation of a regional HIE. The use of the Reference Guide in the state of Michigan can also ensure consistency among start-up efforts and serve as input to decisions regarding funding and other types of support under consideration for regional health information exchange initiatives. This guide is a suggested step-by-step process for the initial phase of regional health information exchange efforts, and includes numerous references to other sources of information as well as example documents. The development of this reference guide should continue under the direction of the MiHIN Resource Center and should be made available through the Resource Center or Michigan Department of Community Health

2. **Leverage Existing MiHIN Resource Center Workgroup Structure**
The HIT Commission will need to create advisory workgroups to address issues needing specific expertise, as defined in P.A. 137-2006. Advancing the MiHIN Resource Center workgroup structure would allow the HIT Commission to take advantage of the work and knowledge of members represented in the those Workgroups. All Workgroups will be responsible for conducting appropriate research and engaging in meaningful dialogue regarding topics of interest to the HIT Commission and MiHIN Resource Center. The Workgroups would also provide recommendations to the HIT Commission and MiHIN Resource Center regarding various aspects of HIE development.

3. **Provide Resources to Michigan's HIT Commission**
Provide the HIT Commission with appropriate staff, administrative support and other resources to meet its responsibilities.

4. **Encourage Regional HIEs to Move Toward the Exchange and Interoperability of Clinical Data**

Encourage adoption of systems that can facilitate electronic access to patient clinical data across the continuum of care (e.g., wellness programs, ambulatory, primary, care, chronic care, and long term care and disease management) from a variety of health care sources. Access to the continuum of care data will enable providers to make better informed decisions and ultimately improve health care quality and safety. This includes leveraging existing state-wide data sources (e.g. Medicaid) and encouraging the development and use of electronic medical records (EMRs). Encourage providers to work with patient safety organizations to facilitate ways that HIT and HIEs can increase evidence based medical care. Advocate for the use of practical and incremental steps that will gain value and begin to be self-sustaining. These steps include sharing data that is already in electronic form and delivering clinical results electronically (e.g. lab, medications and radiology results).

5. **Conduct State-wide Medical Trading Area (MTA) Analysis**

A medical trading area is defined as an area where a population receives the majority of their health care. The area typically includes groups of physicians, hospitals, laboratories, mental health providers and other health care providers that offer health care services.

To assist regional HIE initiatives in their planning it is recommended that a medical trading area analysis be performed and made available to any regional HIE initiative. Specifically, this analysis is crucial to regional efforts in order to:

- Provide guidance on who the stakeholders are
- Provide a framework for understanding services in the area
- Understand the critical mass mostly likely needed for sustainability

This information is even more critical now, as opposed to 40 years ago during the early application of information systems in health care, since the vast majority of clinical information and patient encounter data now are generated and reside outside the hospital in fragmented silos based on where health care delivery occurs (namely, physician offices) or where patient data are gathered and analyzed (e.g. laboratories).

The Regional Workgroup defined recommended building blocks to be used in getting regions started and these building blocks should be used as criteria when issuing state funding. The building blocks/minimums listed below were selected based upon many other general assumptions. These items as well as further details and an example of a MTA analysis can be found in Appendix J.

Fundraising and Administration of State-wide Funding

1. **Set Criteria and Align Incentives for HIE Recognition, Support and Funding**
   Financial incentives should be aligned with funding for HIE initiatives. Such funding will be critical to facilitating the growth of HIEs throughout Michigan. The state should advocate for continued state and federal funding while encouraging participation and funding from other stakeholders (e.g. employers and payers). Inadequate funding for the early stages of health information exchange initiatives can be a barrier to entry. The State of Michigan legislature has begun to remove this barrier by appropriating funds for health information exchange projects in the fiscal year 2007 budget.

   As well, specific criteria should be developed and eligibility determined for the awarding of funds and to ensure that funding is aligned with the goals of the MiHIN *Conduit to Care*. Based on the input from the *Conduit to Care* process, the following goals, objectives and eligibility criteria are recommended to be used by the Michigan Department of Community Health as they begin the proposal process for distributing the funds appropriated for health information exchange projects across Michigan.

   A. Goals for Funding
   a. Projects will be designed specifically to develop community-wide health care information sharing, by developing regional health information exchange projects.
   b. To design and develop health information exchange projects that, while maintaining integrity to local health information and its sources, will follow standards (as defined by state and national bodies) and policies that will establish and maintain optimal health information exchange on the state level.

B. Objectives

a. To prove that there is a return on investment associated with the implementation of a health information exchange
b. To ensure the development of infrastructure and processes to facilitate, over time, the interconnection of health information across the state of Michigan
c. To allow for the HIT Commission to quantify the value of such activities as outlined in Section (i) (2) (a) – (k) of the HIT Commission bill
d. To ensure that Michigan begins to gather "best practices" as it relates to health information exchange
e. To ensure that the infrastructure that is adopted is available to all constituents throughout Michigan

The following details are recommendations from the Regional Workgroup regarding goals and eligibility criteria by category. Two categories, planning and implementation have been defined based on the stages of regional initiatives within the State of Michigan. It is recommended that these details be utilized by MDCH as they draft the actual proposal process for distributing funds.

A. Planning Category – Support for planning projects

a. Goal Statement: To develop a feasible plan for the implementation of a health information exchange that will follow adopted standards and show how they plan to improve the quality of health care in Michigan.

b. Eligibility Criteria: Organizations representing regional Initiatives competing for awards under the program must meet the following eligibility criteria:

i. Planning a formal organization
ii. Planning to use state and national adopted standards (based on availability)
iii. The Applicant must provide a Letter of Intent including names and signatures of stakeholders for the following reasons:
    1. Multiple and diverse stakeholders are critical to the success of a region or community effort in the decision-making processes related to the project. Such stakeholders may include but are not limited to practicing clinicians, health plans, hospitals, laboratories, public health, patient groups, purchasers, and the state, in some capacity.
    2. The applicant must plan to engage the commitment of purchasers and/or payers representing, in total, a critical mass (approximately 60%) of the covered lives in the area covered by the health information exchange project.
    3. The applicant must plan to engage the commitment of a significant percentage of practicing clinicians to utilize the health information exchange capabilities included in the project
iv. Demonstrate the plan for consumer engagement and education
v. Demonstrate how the HIE will interact in public health reporting.
vi. Must provide proof of matching funds (specifics to be determined)

vii. Review Medical Trading Area analysis and statistics to determine:

1. Medicaid population served
2. Sixty percent of services (as defined by the HIE) are provided within community of stakeholders (e.g., the region)

viii. Willingness to document outcome measures including steps taken during funding period, successes achieved, obstacles encountered, next steps and associated time lines for anticipated future activities.

ix. Health information exchange is open to the entire community

1. Definition of a model that is open to all parties (Payers, Providers, Employers), including all technology vendors able to operate within a set of interoperability standards
2. Established under the premise of being an independent third party. This will facilitate the participation of normally competing organizations.

B. Implementation Category – Support for implementation projects

a. Goal Statement: To implement a health information exchange project that has a highly developed, feasible plan for implementation that includes measurable outcomes and a high level of stakeholder involvement.

b. Eligibility Criteria: Organizations representing regional initiatives competing for awards under the program must meet the following eligibility criteria:

i. The applicant must be a formal Organization.

ii. The applicant must have a business plan.

iii. The applicant must have engaged multiple, diverse stakeholders in the region or community in decision-making processes related to the project, including but not limited to practicing clinicians, health plans, hospitals, mental health facilities, laboratories, public health, patient groups, purchasers, quality improvement organizations, and the state, in some capacity.

iv. The health information exchange capability included in the project must use state and national technical standards within 12 months of their becoming available.

v. At least two types of data must be initially planned for exchange by the health information exchange capability, such as laboratory data, medication data, outpatient or inpatient episodes, claims data, etc.

vi. Planned data exchange must occur between at least three different stakeholder groups, who cannot be a part of the same legal entity.

vii. The applicant must have engaged the commitment of purchasers and/or payers representing, in total, a critical mass (approximately 60%) of the covered lives in the area covered by the health information exchange project.

viii. The applicant must have engaged the commitment of a significant percentage of practicing clinicians to utilize the health information exchange capabilities included in the project

ix. The applicant must be willing to share resources and lessons learned in the process; sharing information is vital to producing a productive health information exchange.

x. The applicant must plan and show the progress of their use of funds and have proof of sustainability.

xi. Applicants must plan to develop specific, quantifiable milestones and benchmarks to achieve substantial improvement in three areas

1. Performance measures and public reporting
2. Capacity to help physicians in the community improve the quality of ambulatory care
3. Consumer engagement

xii. The applicant must show how it would contribute to the already established health information exchange efforts in Michigan.

xiii. The applicant should consider a marketing plan for communicating quality improvement efforts considering that:

1. Providers need support to improve care
2. Purchasers need to reward good care
3. Community leaders need to be engaged (civic, business, health care)
4. Patients and consumers need to understand what must be exchanged and that they are participants in that process

xiv. Applicant must show they have considered the sustainability of the proposed effort relating to technical, clinical and financial aspects.

Education and Marketing

1. Encourage Additional Collaboration and Communication Amongst Stakeholders Regarding MiHIN *Conduit to Care*

During the course of this project the volunteers provided valuable insight into the state of health care in Michigan and learned information regarding health information exchange and its role in providing increased quality of care and patient safety as well as decreasing health care costs. To this point, stakeholders from communities across Michigan should be encouraged to provide feedback on the *Conduit to Care*. It has been recommended to accomplish this through regional town hall meetings conducted in at least four regions covering the State of Michigan to discuss the *Conduit to Care* recommendations. During this timeframe, input and guidance would be sought from the entire community. Such meetings would also provide an opportunity to further educate consumers and promote consumer/patient involvement and to discuss the next steps to be taken.

In order to clarify and refine the issues addressed in this report, and to gain understanding and support of the healthcare community in order to move these concepts into reality, it is important to reach out to clinicians across the state. This can be done using the partnerships with the medical societies, the hospital association, and other healthcare professional societies throughout Michigan. Consumer/patient understanding and support are also critical to the future success of HIE. As such, reaching out to the Michigan public through mechanisms other than the forums previously discussed is also important. This can be done in collaboration with existing patient and consumer coalitions and through the educational efforts of state government.

VI. CLOSING

This report is a call to action for Michigan to implement the aforementioned recommendations in order to improve health care quality and efficiency while controlling or reducing health care cost in Michigan through health information exchange. While federal leadership is important, it must be integrated with efforts at the state and local level. State legislatures and local governments play a critical part of overall leadership in their roles as regulators, safety net providers, and payers to allow for the mobilization of health care information across organizations and across states as needed. Michigan has regional health information initiatives in operation or in the planning stages. The *Conduit to Care* includes recommendations for Michigan to realize the benefits of health care information exchange – it is a long, complex journey, but this report advocates an incremental approach in Michigan in order to build a strong foundation for continued State of Michigan leadership and the transformation of health care.

In order to maintain the momentum established over the past several months and to transition the *Conduit to Care*, there are immediate activities to be performed. First and foremost, is the establishment of the state-wide coordinating structure (MiHIN Resource Center) and the need to orient the HIT Commission to the recommendations and provided details in the report. Funding has been approved in Michigan's Department of Community Health's budget to implement these activities. Other immediate actions that can be performed by the MiHIN Resource Center include:

- Development of a marketing and education plan for the *Conduit to Care*
- Creation of consumer brochure informing about the *Conduit to Care* and HIE
- Continuation of the development of resource guides and tools for regional HIEs
- Coordination with the HIT Commission to develop a Request for Proposal process for regional HIE funding

The *Conduit to Care* provides the structure and tools to implement the recommendations and deliver success. Success can be defined many ways; however it can be summarized as the long-term tangible improvements in health care quality, safety, and costs through focused, collaborative incremental efforts. Achieving success will be possible with the collaborative contributions and efforts of many Michigan public and private partners, each with a sense of urgency and commitment to advance health information exchange.

VII. APPENDICES

Appendix A: Participants & Workgroup Chairs

Creation of the Michigan Health Information Network Final Recommendations would not have been possible without the contributions of the following individuals. Their knowledge, input, assistance, teamwork and dedication were essential to the successful completion of the Final Recommendations. The content presented in this report is a direct result of thousands of hours of volunteered time.

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Mike Schulien
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Steven Shapiro, D.O.
Rob Shingles
Bradford Slagle
Tracy Smith
Paula Smith
Thomas Smith
Mary Smith
Doug Stacy
Donald Stapleton
Jeanne Strickland
Noah Stromer
Jim Sundberg
Bob Swanson
Mick Talley
Akkeneel Talsma, Ph.D.
Joseph Tan, Ph. D.
Robert Tennant
Fay Thiel
Paul Toenjes
Kevin Travini
Teri Vantongeren
Kevin Trovini
Tisa Vorce
Larry Wagenknecht
David Wanner
Richard Warren
Jeff Weihl
Shelly Weisburg
Donald Wheeler
Linda White
Diane Whiton
Bruce Wiegand
Sue Wiljanen
Cynthia Wisner
Ed Wolking
Joel Wortley
Joe Yelanich
Deborah Zannoth
Michael Zaroukian, M.D.
Richard Znidarsic

APPENDIX B: MIHIN *CONDUIT TO CARE* WORKGROUP DESCRIPTIONS

The **Clinical Workgroup** was responsible for defining patient and clinician focused criteria (i.e. breadth and reach, major drivers, feasibility, impact and urgency) in order to allow prioritization of key process flows representing various aspects of health care delivery and communication that would be implemented as Michigan continues towards a Health Information Network. All Workgroups depended on the Clinical Workgroup to deliver these "real world examples" (use cases) for the first key process flow identified. They also identified key barriers to adoption, necessary participants, benefits to clinical beneficiaries and recommended strategies for working with the identified community to clear any barriers.

Participants were asked to rank the various health care categories and issues in terms of urgency help define the major drivers the Clinical Workgroup (with assistance from other Workgroup members)utilized a survey to rank potential outcomes as urgent "pain points" for health information technology and exchange to determine the most important health system improvements needed. Planners were asked to answer the same questions first as health system professionals, and then as patients or family caregivers. The emphasis on quality, safety and efficiency was reaffirmed as the same participants ranked the urgency of more granular outcomes. Responding as professionals, accessing a patient's information from across multiple providers towered over the priority ranking of alternative outcomes in all settings. This was followed by the goal of enhancing provider collaboration. From both a health care professionals and patient's perspective, the outcome of clinician access to a patient's clinical information from across provider organizations (to improve the quality, safety and efficiency of health care) was given highest priority.

The **Financial Workgroup** was accountable for articulating the benefits and beneficiaries of investments in HIE and HIT. The Workgroup was also responsible for examining the approaches and successful examples of financial strategies to increase adoption of HIT and health data exchange from efforts within Michigan. Including the appropriate role of public and private sectors, proposing financial strategies for funding HIT and health data exchange (startup and long term) were other tasks the Financial Workgroup was charged with completing.

The **Governance Workgroup** was tasked with creating a shared vision and plan for addressing healthcare challenges through information technology and health data exchange in Michigan. The focus of this workgroup was to develop a draft shared vision statement, guiding principles and operations of a regional and a state-wide collaboration between all stakeholders. The workgroup also examined successful governance strategies used by existing regional health information exchange initiatives and state-wide initiatives in an effort to understand the possible applications of healthcare IT in the state of Michigan.

The **Legal Workgroup** understood and researched regulatory issues regarding health information exchange and health information technology. They were expected to identify state laws that provide a barrier to HIE, provide recommendations to ensure that HIEs comply with HIPAA, Stark, etc. and to ensure that HIEs represent consumer interests.

The **Regional Workgroup** researched and interviewed all growing and developed regional health information exchanges in Michigan. One of the goals for the Regional Workgroup was to define the State of Michigan's role in supporting regional health information exchanges (HIE). They were to identify key *barriers to adoption of a regional HIE and recommend strategies*. The Workgroup also identified critical success factors and criteria for HIEs and Medical Trading Areas.

The **Technical Workgroup** identified principles and concepts applicable to HIT technologies and also produced several deliverables. The deliverables include:

- A delineation of the differences between HIT and HIE.
- Collaborated with other Workgroups to develop a three phase Michigan model for the evolution of the Electronic Patient Health Record, and identified technology barriers and challenges associated with each of the three phases.
- Identified and described core HIE technological requirements
- Assessed major options/examples of technical architectures used by HIE initiatives.
- Reviewed research and advisory service (e.g. Gartner) findings and prognoses on RHIO related issues and technologies.
- Reviewed the status of existing HIE-related activities in Michigan via presentations made by the participants.
- Reviewed and assessed the inventory of existing State of Michigan technical infrastructure resources and increase understanding of what infrastructure resources can be leveraged. One of the more detailed assessments ""Report on EXR Implementation in the State of Michigan", by BCBSM and the Partnership for Michigan's Health (March 22, 2006) is described in Appendix D.

An **Executive Leadership Team** consisted of the Steering Committee co-chairs, staff from MDCH, MDIT, the Michigan Public Health Institute, Health Network Services Group, and CyberMichigan. The Executive Leadership Team guided the day-to-day details and operations for the project and provided guidance and assistance for the Project Management Team on an as-needed basis. They also provided a line of communication between the Governor, the Steering Committee and the Project Team.

A **Project Management** team compiled all presentation materials, and organized scheduling and logistics. The Project Management team reported to the Executive Leadership Team and Steering Committee.

An **Advisory Group** made up of cabinet-level Directors of the State of Michigan Departments of Community Health, Information Technology, Corrections, Labor and Economic Growth, Civil Service, Veterans Affairs, Management and Budget, and Human Services reviewed the progress of the *Conduit to Care*.

The table below outlines the project activities and impact on the project.

Project Activity	Impact
Weekly Project Management Meetings	• Increased awareness of activities and scope management
Weekly Coordination Calls	• Increased communication among workgroup leadership
Steering Committee Meetings (Five meetings total)	• Established expectations and roles • Provided leadership for the process and a communication channel between the Governor and Steering Committee
Workgroup Meetings (25 meetings total)	• Identified urgent and feasible priorities • Developed recommendations for the *Conduit to Care*
Advisory Group (Two meetings total)	• Identified issues within State of Michigan government • Ensured alignment of MiHIN with current, on-going or planned State of Michigan government activities
Integration Days (Three half day sessions)	• Increased communication and understanding between workgroups • Reviewed all workgroup work • Verified recommendations for feasibility and urgency

APPENDIX C: MICHIGAN'S UNIQUENESS

In helping foster HIE, Michigan shares many barriers and challenges with other states but also has unique strengths and opportunities that can be built upon to help ensure success. These include:

1. Vision, Leadership, Landmark Policy and Program Alignment

The state is providing a strong vision, leadership and direction on health IT. Complementing this is the exceptional program and policy alignment at the state level, between the Governor and legislature, and at the Departmental level, not only MDIT and MDCH but also among the associated programs and support services. In addition to MDCH and MDIT, these include the Departments of Labor and Economic Growth, Human Services, Civil Service, Corrections, Military and Veterans Affairs and Management and Budget.

Further, information technology and Health Information Technology (HIT) are fully integrated within the Governor's Cabinet Action Plan (CAP) and the Michigan IT Strategic Plan. Michigan is one of the few states with a state enterprise level policy and program plan, and has received national recognition for its integrated CAP and IT planning process from the Government Performance Program (2005).

Further, in Michigan HIT issues are understood and addressed in the full context of related issues - not only security and privacy, legal, governance, and funding concerns - but also the needs of Michiganders as employees and retirees, employers, providers and payers for services. The policies and solutions proposed must address Michigan as a place to live, competitive position, manufacturing restructuring, vitality, and more.

Some recent policy and program alignment highlights include:

- Goal and Program Alignment: Health and Human Services is one of the six goals in the Cabinet Action Plan. The Michigan Health Information Network is a priority in the CAP as well as the state IT Plan.
- Gubernatorial Support: The Governor gave full support and guidance to MiHIN in the 2006 State of the State message.
- Legislative Support: PA 137 of 2006 established a health information technology commission, and funding for regional HIE's has been provided in the 2006 07 FY budget.

2. Critical Mass of Stakeholders

In part because of Michigan's unique automotive manufacturing and union history, and the role of the state and federal governments in health care, a comparatively small number of major HIT related stakeholders serve a very large share of Michigan's population. Thus, a critical mass of stakeholders and participants can be catalyzed at the state level and in selected regions more readily than in many other states. Stakeholders are willing to work together to identify areas in which they should be collaborating. Many have already taken significant health IT related actions on their own or in tandem with others, and are participating in the MiHIN deliberative and design process.

- Three payers, Medicaid, (15%), Medicare (26%) and BCBSM (47%) represent 88 percent of the insured population in the state.

- Major stakeholders participated in the 2005 Public Sector Consultants (PSC) sponsored forums, the MiHIN work groups, as well as in the development of regional HIEs. Major stakeholders include providers, payers, employers, labor unions, public health professionals and consumers.

- A number of existing as well as emerging initiatives illustrate the strength as well as the regional vitality of provider, payer and employer commitments.

- Blue Cross Blue Shield of Michigan's (BCBSM) web-DENIS Provider Portal is a fully functional payer-provider portal. Providers can access information relevant to claims, prior authorization, and can validate BCBSM member eligibility and benefits. In March of 2005, the web-DENIS feature began allowing Michigan Medicaid providers to access Michigan state program beneficiary eligibility and benefits information. The Michigan state program beneficiary information is handled via a cooperative arrangement between BCBSM, Michigan Department of Community Health (MDCH), and Michigan Public Health Institute (MPHI).

- Computerized Physician Order Entry (CPOE): Major National and Regional Health care Delivery Systems all invested in CPOE. The investment in major HIT systems for these hospitals with special emphasis in CPOE has surpassed a half-billion dollars in this decade. Many initiatives like these have been in support of initiatives like "Leapfrog" and "Bridges to Excellence".

3. National Caliber IT Capabilities and Foundation of Experience

Michigan has been in the forefront of Health care interoperability for over a decade. The prestigious Center for Digital Government survey recognized Michigan as the number one digital state in 2004 (The most recent year when the award was given) for its IT based service delivery, architecture and infrastructure, collaboration, and leadership. These national caliber planning and management capabilities are being applied to the *Conduit to Care* project.

Also, MDIT has an established and extensive cross-boundary (XB) program, with shared, cross jurisdictional governance in multiple areas. The Office of Technology Partnerships was established in 2003 to foster technology collaboration and partnerships with business, K-12, universities, non-profits, and local units of government. IT Plan goals call for sharing, collaboration and a state-wide community of partnerships. In 2006 MDIT developed a formal cross boundary strategic and operational framework, bridging internal and external IT solutions. Preliminary areas include, Land Use, broadband, and "joined-up government" business licensing and development (MiTAPS expansion). This process is further integrated with enterprise architecture (EA) refinement,

Michigan has had extensive experience with many health IT approaches and projects: Telemedicine, vital records, immunization registry, disease surveillance, Medicaid management, pharmaceutical pricing and others. Selected examples include:

The Michigan Care Improvement Registry (formerly the Michigan Childhood Immunization Registry) (MCIR) is an award winning, state-of -the-art electronic, state-wide immunization tracking system for all citizens who receive, or are offered, immunizations anywhere in the state of Michigan. This system is accessible to both private and public providers and was just recently expanded to people of all ages.

The Michigan Disease Surveillance System (MDSS) has been in operation since December 2003 and currently receives 2500 emergency department registrations per day from over 20 facilities. The System is designed to facilitate public health rapid detection and response to unusual outbreaks of illness that may be the result of bioterrorism, outbreaks of infectious disease or other public health threats and emergencies.

The Medicaid Management Information System (MMIS) is a next generation, automated management and control system for the Michigan Medical Assistance Program (Medicaid). MDCH and MDIT are currently engaged in an effort to replace the existing MMIS for the State of Michigan, which was first developed in the late 1970s. Michigan will be the third state in the nation to implement this cutting edge suite of products.

Health Level Seven (HL7) is a not-for-profit organization based in Ann Arbor, Michigan. This American Standards National Institute (ANSI) accredited Standards Developing Organization (SDO) is recognized internationally for its dominance in the messaging standardization of health care clinical and administrative data.

4. Historic Economic Pressures and Restructuring Serve as Challenges and Drivers

Michigan has been undergoing a historic restructuring of its economy, particularly in its automotive manufacturing sector. These manufacturers are finding themselves increasingly disadvantaged in the global market place and this has resulted in resource constraints (human and financial) and restrictions in both the private and public sectors, including for health care. These restrictions or reductions have been juxtaposed by continuing or increased demand for services and increased costs. Rapidly growing health care costs are well documented for both the public and private sectors in our state. Government, employers and employees have all been affected.

This issue was first addressed at the Governor's 2003 Summit on "Manufacturing Matters in Michigan", when a consensus was reached on the urgent need to develop practical steps at the state and federal level to address employer-sponsored health benefits for employees and retirees.

The 2005 Governor' Council of Economic Advisors December 2005 report "Recommendations to Reduce the Economic Burden of Providing Employer-Sponsored Health care Benefits" addresses some of the drivers and trends for both the public as well as manufacturing sectors, and called for health care information technology infrastructure reforms. The report found that:

- Total government outlays from all sources (including federal) spent on direct health care purchases in Michigan in 2004 exceeded $10 billion, accounting for more than 25 percent of the state's total budget and more than one third of its General Fund.
- The Big Three Automakers spent $10 billion in employee/retiree health care in 2004, half of which was spent in Michigan.
- The combined health care expenditures by the Big Three and the State of Michigan in 2004 exceeded $15 billion, accounting for 24 to 26 percent of Michigan's total expense for health care goods and services.

Health care related changes and disruptions reverberate throughout Michigan's economy because, in addition to the sizeable impact of health care related costs to the overall economy, health care is Michigan's largest employer, providing more than 726,000 jobs, $30 billion in wages and salaries, and $8 billion in taxes.

5. Geographic, Service Scope and Diversity Call for Regional Solutions

Michigan's geography, history, demographics and evolution of health markets has resulted in distribution of population and services that initially is best served by multiple regional HIE initiatives. The state has one of the strongest North / South and East / West delineations among the states, two geographically separate peninsulas and a smaller one in the form of the "Thumb", land borders with four states and three border crossings with Canada, and a balance of urban to rural population above the national average (Need data, also on transient population of "Snowbirds" and northern vacationers, also border health markets (e.g. Michiana), and retirees, add native American population if appropriate).

- The U.S. Office of Management and Budget identifies 15 Metropolitan and 18 Micropolitan Statistical Areas in Michigan, accounting for 92 percent of the population and 49 counties. Cass County is part of a Metropolitan Statistical area shared with Indiana.

- According to the Dartmouth Atlas there are 109 hospital service areas and 15 referral regions in Michigan. Southeast Michigan is very diverse and functionally equivalent to several regions.
- Another measure of regional distribution of markets is the profile of counties with the most direct health care jobs. The top ten counties are: Wayne, Oakland, Kent, Macomb, Washtenaw, Genesee, Ingham, Kalamazoo, Saginaw and Ottawa.
- The MiHIN regional interview process identified at least eight entities that were at some stage of recognition or discussion, organization, design, implementation or operation.
- Due to market area distribution and density, parts of the state may either be served by more than one market area or be underserved.

6. *Conduit to Care* Built on Michigan Strengths, Unique Needs, and Best of Breed Experience

Conduit to Care fully integrates Michigan's state, regional and local HIE and HIT experiences and fully utilizes the best of breed of other state, regional and national practices. The assessment and recommendations are intended as a value-added contribution not only to the Michigan health care customers, providers and payers in the state, but to other states and health care communities. This is possible because of: the reliable HIT precedents in Michigan, the intensive two years of groundwork including establishing relations with other states, the National Governors Association (NGA) and at the federal level; the ability to use the experiences in states like Arizona, Indiana, Florida and Texas; and the outstanding dedication and commitment by the Michigan stakeholders. In particular, the unique strengths of the report particularly derive from:

- Catalyzing the stakeholders through "Health Information Technology in Michigan" stakeholder forums during 2005.
- A strong foundation of Michigan assessments by BCBSM, CyberMichigan, KLAS, MDCH, Michigan Economic Development Corporation (MEDC), Michigan Hospital Association, MIPC, Public Sector Consultants, Michigan State Medical Society, Michigan Osteopathic Association, Public Sector Consultants, etc (need to validate key Michigan resources)
- Building on the experience of the successful NGA project application
- Reliance on seasoned, independent professionals to manage all aspects of the project from MPHI, eHealth Initiative and Health Network Services
- Ongoing involvement and assistance from the HIT vendor community, including but not limited to Compuware, Sun, Cerner, HP, Cisco, Accenture and others.
- Grounding in an explicit framework for incrementally evolving HIE in Michigan

APPENDIX D: HIT PROJECTS IN MICHIGAN

I. AHRQ FUNDED HEALTH INFORMATION TECHNOLOGY PROJECTS[5]

Three entities in Michigan were awarded (beginning in 2004) a three year total of $2.9 million from the Agency for Health care Research and Quality (AHRQ) to develop HIT projects. A fourth entity was awarded an AHRQ grant in 2005 to develop an HIT project.

A. HIT Planning for a Critical Access Hospital Partnership

Description: Plans, develops, and implements HIT to assist local rural communities in improving health care access, building local and regional resources to monitor the quality of health care and expanding the use of HIT educational, communication, and clinical applications.

Abstract: Six Critical Access Hospitals located in Michigan's Upper Peninsula have united as the Michigan Upper Peninsula Health Information Partnership to improve patient safety and quality of care through the regional planning, development, and implementation of HIT. Each hospital has agreed to commit its organizational resources, support and participation in: (1) a 12-month, joint HIT planning process; (2) implementation of the HIT plan; (3) the use of the regional HIT system to assist local rural communities to improve health care access; (4) building local and regional resources to monitor the quality of health care; (5) expanding the use of HIT educational, communication, and clinical applications in the region; and (6) submitting a Network grant to the AHRQ to help fund HIT strategies identified in the regional HIT Plan and measure its impact on patient safety and both the quality and costs of care. The HIT planning and implementation activities of this Six-CAH Hospital Network will be used by Michigan's Center for Rural Health as a template for adoption and inclusion of Michigan's 12 other Critical Access Hospitals and other state CAH programs. The Planning Director, with the help of HIT clinical and technical experts, will work with a Planning Committee, comprised of the CEO and HIT Officers of each hospital. Over the 12-month planning process, the Committee will define the current situation, define areas of focus and Network goals, evaluate and prioritize strategies, define measurable HIT outcomes, agree to the Network's ongoing evaluation process, adopt the final regional HIT plan, and conduct an evaluation of the HIT planning process.

Estimated Total Funding: $193,848 (Year one Funding: $193,848)
Principal Investigator: Donald Wheeler
Applicant Institution: Baraga County Memorial Hospital (L'Anse, MI)
Community: Rural
Technology: Telehealth, HIE, EHRs, CPOE, Clinical Decision Support
Care Setting: Ambulatory
Grant Number: P20 HS15004 (9/30/04 – 9/29/05)

B. Bar Coding for Patient Safety in Northern Michigan

Description: Implements a bar-coding application to an existing integrated HIT network that alerts providers to potential drug interactions and allergic reactions, tracks "near misses", and provides a permanent record of the patient's medication history that is accessible by providers at any site.

Abstract: Five partnering hospitals in northwest, lower Michigan have collaborated to create a system of health care that involves an integrated computer network. This network offers a single repository for the storage of all patient information and allows the sharing of technology that can enhance patient safety. Goals and initiatives at all hospitals are focused on reducing adverse drug events and medication errors. These events and errors occur at several places along the medication chain, including ordering medication, transcribing physician orders, dispensing medication, and administering medication. A

[5] http://healthit.ahrq.gov/portal/server.pt?open=512&objID=654&PageID=5585&mode=2&cached=false&state=Michigan