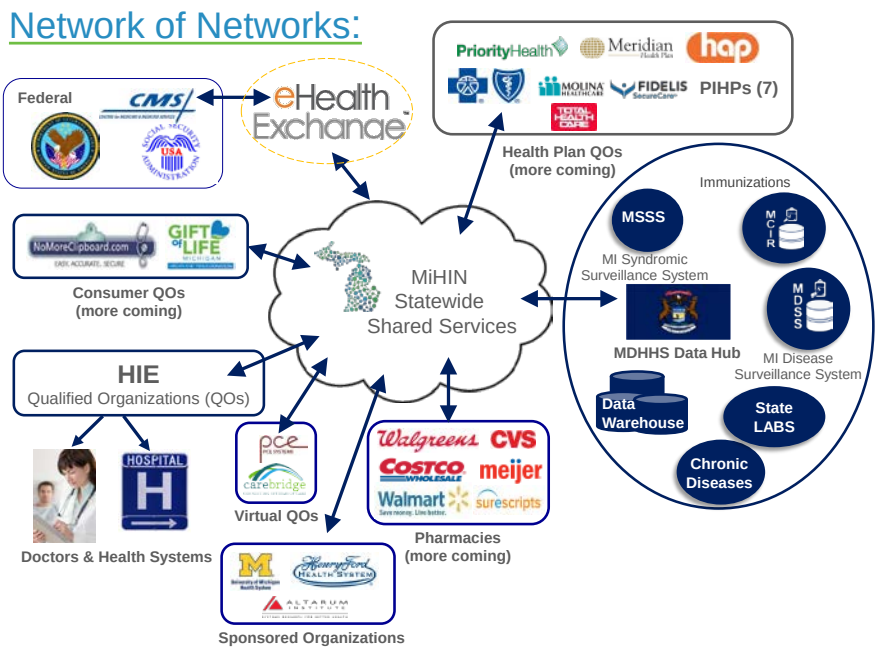
Timothy A. Pletcher Testimony for the Committee on Health, Education, Labor, and Pensions hearing on "Achieving the Promise of Health Information Technology: What Can Providers and the U.S. Department of Health and Human services Do to Improve the Electronic Health Record User Experience?"

Chairman Dr. Cassidy, Ranking Member Whitehouse and distinguished members of the committee, thank you for the opportunity to share my thoughts on the physician experience relative to health information technology and to offer some near-term and long-term suggestions to help improve upon the current state. My name is Tim Pletcher and I serve as the executive director for the Michigan Health Information Network Shared Services (MiHIN). MiHIN is Michigan's state designated entity for health information exchange and is commonly referred to as a network-of-networks enabling healthcare organizations to share information. MiHIN has enjoyed success in Michigan with a unique approach known as The Use Case Factory™ allowing health care organizations to routinely share more than 6 million messages each week (See www.mihin.org).



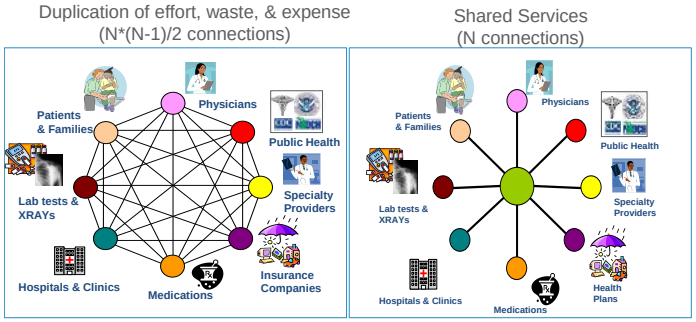
To begin I would like to formally endorse the work by the Office of the National Coordinator on developing the draft interoperability roadmap and call attention to the learning health system core values highlighted in the roadmap document. The ultimate goal of the roadmap is to establish "a nationwide learning health system—an environment that links the care delivery system with communities and societal supports in "closed loops" of electronic health information flow, at many different levels, to enable continuous learning and improved health. This kind of system allows individuals to select platforms and apps to share and use their own electronic health information to meet their needs without undue constraints." To achieve this objective it will be important to recognize and support the work of a number of organizations in addition to each State that I believe will play a critical role in advancing the progress and governance necessary to achieve the roadmap's vision. These are Carequality, Commonwell Health Alliance, Direct Trust, the National Association for Trusted Exchange, and the emerging Learning Health Community.

Even before Electronic Health Records (EHRs) and Meaningful Use entered the scene, providers were drowning from administrative or defensive medicine workloads. It is my observation over the years that providers routinely share as much information with those who pay for or regulate care as they do with other providers. And yet the health plan or payer community, especially the commercial health plans, have been remarkably absent from the meaningful use dialogue and the associated data sharing. Providers have been encouraged to send a certain percentage of their transitions of care to other providers using specific technology like Direct Secure Messaging (DSM), yet all of their interactions with health plans are done either by a payer-specific portal that requires the provider to remember another login ID and password or to use a fax machine. Likewise, increasing Medicare or Medicaid audit requirements has resulted in a significant increase in new requests by health plans for supporting clinical documentation from providers. A major opportunity exists to have the health plans begin to adopt the same data sharing approaches as providers. This will help ensure that providers do not bear the whole

cost associated with establishing these Use Cases and will help guarantee that providers have increased value and incentive to adopt the Use Cases for clinical purposes.

If we are to achieve the vision of a Learning Health System we need to prepare for ultra-large scale data sharing. While there has been considerable success in motivating hospitals and providers to adopt individual Electronic Health Record systems (EHRs), connectivity between those disparate EHR systems and networks, and standards for how data is captured, stored and communicated, involves complex and burdensome problems that cause considerable frustration in the lives of providers and their patients.

To help illustrate the complexity of scale and the associated benefit of standardization versus an unsustainable point-to-point approach let me share a network math formula of N*(N-1)/2, where 'N' is the number of health organizations being connected. At small numbers the quantity of connections and data sharing is very manageable: two organizations equals one connection, five organizations equals ten, and twenty five organizations equals three hundred connections. Extrapolating to about 5700 U.S. hospitals and 230,000 practices, however, and applying this formula, results in 26.5 billion point-to-point connections. This does not include dentists, pharmacies, public health offices, schools, food banks, the judicial and corrections system, and the multitude of other organizations that increasingly play an important role in the social determinants of health. This simple math helps illustrate why a design for interoperability is necessary and also shows that, as more organizations attempt to share data independently with point-point connections this becomes overwhelming, an increased waste of resources, and ultimately unsustainable.



To help simplify this interconnectivity problem in Michigan we have created a network-of-networks where we share services that are focused on unique health information sharing scenarios, which we call 'Use Cases,' and which we manage through a process we call The Use Case Factory. Each "Use Case" is a valuable "package" of health information sharing: examples of Use Cases include a pharmacy updating a state registry with a person's recent immunization, a hospital notifying a primary care doctor that her patient was discharged from the hospital, or a behavioral health specialist informing a primary care provider of a change to a mutual patient's care plan. One may think of this approach to data sharing governance as a Henry Ford-style mass production assembly line combined with the modularity of container shipping, all linked to lean continuous process improvement.

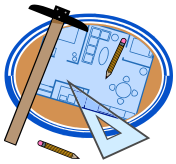
Building a Use Case Factory reduces complexity by breaking data sharing activities into manageable chunks so that technical, competitive, financial, or confidentiality concerns can be addressed without "boiling the ocean." Incentives, regulations or policies can target specific Use Cases to foster or accelerate adoption and data sharing and also allow more meaningful measurement to occur. For example instead of asking if a doctor or hospital is "connected to an HIE," a more valuable question can be asked, is the hospital able to notify an unaffiliated doctor when her patients are discharged? When notified can the doctor's office follow up with the patient within 48 hours?

Each Use Case has its own value proposition, its own legal agreement transparently outlining rules of engagement or conditions of use including any costs. Equally important, each Use Case includes a distinct implementation guide removing all ambiguity about how to implement the data exchange standards so that interoperability is achievable.

# Use Case Components

**Use Case Summary** - explains purpose and value proposition/business case for sharing data

**Use Case Agreement** - legal document covering expected rules of engagement (Trusted Data Sharing Organizations sign Use Case Agreements)



**Use Case Implementation Guide** - technical specification that outlines standard format details for data transmission & content

So, for example in Michigan, targeted financial incentives from payers to providers related to the Statewide Admission, Discharge, or Transfer (ADT) Use Case have resulted, in less than two years, in 93% of all admissions statewide being made available to help providers coordinate the care of patients to reduce unnecessary readmissions or Emergency Department visits. Using Michigan's Statewide ADT Use Case, recently one clinic saw their ability to support transition of care management rise from 3 to 5 patients per month, to 40 patients per month, a tenfold increase in care coordination.

Finally, because specific incentives are directly linked to the Statewide ADT Use Case, in addition to overcoming hospitals' initial reluctance to send ADTs, in order to continue the incentives hospitals have been asked to improve the quality and standardization of the data being sent as well as begin to support additional Use Cases such as Medication Reconciliation at Discharge, a Use Case that will help reduce the number of Adverse Drug Events (ADEs) and prescription errors. Adoption of a Use Case approach helps elevate the conversation so that it does not become mired in technology debates, but rather ensures that the clinical or business needs are driving the technology agenda and not the other way around.

1) A first recommendation is to encourage HHS to establish a prioritization of the top 100 most valuable/important Use Cases.

This would include the development of a formal value proposition for each Use Case Summary in the context of decreasing costs, improving the patient experience, increasing quality, or specifically reducing provider burdens. It would also require the development of focused legal agreements outlining for each Use Case the rules of engagement for sharing the data within that Use Case Agreement. Once these agreements are completed constituents can understand expected use of their data and follow a common chain of trust across organizations allowing them to consent to share their data for specific purposes and not be limited to either opt-in or opt-out at a high level. Finally, for each Use Case there should be an associated implementation guide describing exactly how to implement the underlying data standards to best support the function of the use case and insure interoperability. The implementation guides should include appropriate provisions for situations when multiple options for communication exist, such as when equivalent delivery standards may be acceptable viable alternatives.

This initial list of 100 most important Use Cases should include both infrastructure Use Cases (e.g. provider directory, patient matching, identity management, consent management, etc.) as well as more functional Use Cases such as clinically relevant Use Cases (populating immunization registries, notifications of transitions of care, sharing lab results, care plan sharing, distributing death notices, etc.), Use Cases that enable research, and Use Cases associated with quality reporting and performance. Finally, some expectation for the required incentives needs to be identified to ensure that providers will have either the additional appropriate resources to adopt each Use Case or an anticipated penalty to motivate self-funded adoption.

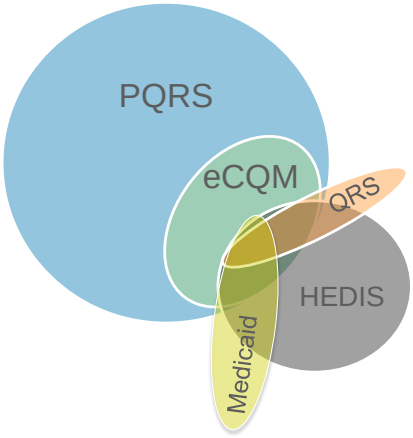
2) A second recommendation is to promote the establishment of a Use Case Factory™ in each state or jurisdiction and at a national level by beginning with the HHS high-priority Use Cases and leveraging state government and national multi-stakeholder groups accordingly.

This approach can accelerate the prioritization of data sharing efforts and help providers and their vendors prepare for more clearly defined functionality and understand why certain activities are desired versus compliance by simply checking off a requirement. It also offers a mechanism for health plans to align incentives to promote priority Use Cases at a local level.

3) A third recommendation is to encourage health plans to use Direct Secure Messaging (DSM) or connectivity to health information exchanges for some percentage of their interactions with providers so those providers that have connected EHRs or DSM can use the same infrastructure for both clinical and administrative purposes without having to go backwards to a fax machine once they have invested and overcome the onboarding process for using technology. Transactions related to priority Use Cases such as authorizations or care coordination are better than general communications.
    a. Similarly, encourage legal staff and judicial systems to use Direct Secure Messaging for some percentage of their interactions with providers related to the release and exchange of medical documentation and consent;
    b. Encourage public health organizations to use Direct Secure Messaging for at least some percentage of their interactions with providers.
4) A fourth recommendation is to encourage health plans to use query capabilities such as the eHealth exchange (like the Social Security Administration established through the MEGAHIT program) to obtain electronic medical documentation using approaches aligned with Meaningful Use such as HL7 Consolidated Clinical Document Architecture (C-CDAs) to support claims audits. Currently health plans send people out to clinics to conduct chart abstracting as the principle method for collecting of this type of information. Encouraging this dual use of query capabilities for both administrative and clinical purposes will help accelerate routine adoption on a broader scale and spread the costs across both the provider and payer community.

Another major effort that will also help the physician experience is to align the commercial payer community better with Medicare and Medicaid activities. In Michigan we have begun a process to help reduce provider burdens related to better alignment of quality measures among commercial, Medicare, and Medicaid health plans and the physician community. The startling work of a MiHIN intern produced the Venn diagram below showing how few quality measures exist in common among the multitude of quality measures being collected. An examination of the measures available in the Physician Quality Reporting System (PQRS), the meaningful use stage two electronic clinical quality measures (eCQMs), the Healthcare Effectiveness Data and Information Set (HEDIS), and the Quality Rating System (QRS) resulted in only fourteen measures in common. Including the Medicaid core set in the comparison dropped the count from fourteen to only five common measures. Further examination revealed that in Michigan and likely nationally each health plan has different data collection processes and different incentives linked to even those measures that are similar. One physician organization executive commented “It’s like the physicians are expected to work for multiple bosses at the same time”. Plan A wants one thing, Plan B wants another, and Plan C something different. A definite opportunity exists to allow providers to look at quality measures across their panel of patients without first having to be cognizant of which health plan the patient uses.

# Alignment Example: Quality Measures




PQRS ~300 measures
MU eCQM 64 measures
Medicaid Core Set 46 measures
HEDIS 81 measures
QRS 43 measures

- Not including Medicaid Core Set 14 measures intersect
- Only 5 measures intersect all 5 measure sets

5) A fifth recommendation is to encourage HHS to work with Medicaid and Medicare health plans and also commercial plans to seek greater alignment and consistency on quality measures and to develop a "report once" process where providers are able to submit their quality and performance measures using one consistent means for their entire panel in a way that allows for important population segmentation, but does not require providers to experience unneeded duplication and extra cost to reportthe same quality measures to each individual health plan.

In closing, the Learning Health Community movement and perhaps a number of the other multi-stakeholder organizations implicitly envision as one of their key goals *interoperation* (as opposed to interoperability, which is a capability versus an outcome) as a driver of better human health. These organizations are about working together to collaboratively realize an infrastructure built upon the fusion of technology, policy, people, and culture that leads to a national system for sharing health data to enable useful and rapid exchange that is governed, organized and operated by different levels of public and private multi-stakeholder collaborations.

The Use Case Factory approach can help accelerate the creation of a secure information supply chain capable of evolving into a Learning Health System and prioritize the exchange of critical data,

information, and knowledge aligned to improve health, reduce costs and enable an ever-growing list of Use Cases. Priority Use Cases will range from public health, surveillance, consumer engagement, new levels of clinical decision making, empowering policy makers, to ultimately accelerating research to practice. Instead of interoperability being the end goal, there is an opportunity to enable the emergence of a culture of continuous and rapid learning in pursuit of protecting and advancing human health as the end goal, with achieving interoperation recognized as a driver, and interoperability being an essential enabler on the larger journey.

**Links of Significance:**

Michigan Health Information Network Shared Services

www.mihin.org

Carequality

http://healthewayinc.org/wp-content/uploads/2015/01/Carequality_Principles-of-Trust_Final_Carequality-template.pdf

Commonwell Health Alliance

http://www.commonwellalliance.org/

Direct Trust

http://www.directtrust.org/

Endorsers of the Learning Health System Core Values

http://www.learninghealth.org/s/LHS_Core_Values_Endorsements_80_06012015_V1.pdf)

http://www.learninghealth.org/endorsers/

National Association for Trusted Exchange

http://nate-trust.org/

Social Security Health Information Technology

http://www.socialsecurity.gov/disabilityssi/hit/our-initiative.html

**Attached Examples of Use Case Factory Artifacts**

# QUALIFIED DATA SHARING ORGANIZATION AGREEMENT

This Qualified Data Sharing Organization Agreement (the "**Agreement**") is entered into by and between Michigan Health Information Network Shared Services, a Michigan nonprofit corporation ("HIN") and _____, a _____ ("**Participating Organization**"). HIN and Participating Organization are referred to herein collectively as "**Parties**" and individually as a "**Party**."

WHEREAS, the United States Department of Health and Human Services has determined that the widespread adoption of interoperable electronic health records will result in an improvement in the quality and efficiency of health care; and

WHEREAS, HIN has been created to provide health information exchange services and capability (the "**HIE Platform**"); and

WHEREAS, Participating Organization wishes to participate in the HIE Platform, and HIN is willing to grant Participating Organization the right to participate in the HIE Platform, on the terms and conditions set forth in this Agreement.

NOW, THEREFORE, the Parties agree as follows:

## AGREEMENT

## 1. DEFINITIONS

1.1 Where the following terms appear in this Agreement with initial capitalization, they shall have the meaning set forth below (it being understood that such following definitions shall extend, as and where applicable, both to plural and singular usages of such terms and to other grammatical forms of such terms):

"***Applicable Laws and Standards***" means all applicable federal, state, and local laws, statutes, acts, ordinances, rules, codes, standards, regulations and judicial or administrative decisions promulgated by any governmental agency, including the State of Michigan, or the Michigan Health Information Technology Commission as any of the foregoing may be amended, modified, codified, reenacted, promulgated or published, in whole or in part, and in effect from time to time which is enforceable against a Party. Without limiting the generality of the foregoing, "Applicable Laws and Standards" includes HIPAA, as defined below.

"***Confidential Information***" means information, whether provided or retained in writing, verbally, by electronic or other data transmission or in any other form or media whatsoever or obtained through on-site visits at either Party's facilities and whether furnished or made available before or after the date of this Agreement, that is confidential, proprietary or otherwise not generally available to the public including, without limitation, trade secrets, marketing and sales information, product information, technical information and technology, customer and supplier information, information about trade techniques and other processes and procedures, financial information and business information, plans and prospects of a Party. Confidential Information

does not include information that, as established by reasonable proof, (a) has been previously published or is now or becomes public knowledge through no fault of the Receiving Party; (b) is, prior to its initial disclosure hereunder, in the rightful possession of the Receiving Party; (c) is acquired by the Receiving Party from a third party which has rightful possession, without any restrictions on its use or disclosure known to the Receiving Party; or (d) is independently developed by the Receiving Party without use of the Disclosing Party's Confidential Information. Confidential Information shall not include PHI. The Party receiving Confidential Information shall be hereinafter referred to as the "**Receiving Party**" and the Party disclosing such Confidential Information shall be hereinafter referred to as the "**Disclosing Party**."

"***Documentation***" shall mean all user manuals distributed to Participating Organization in connection with a specific Use Case, if any.

"***HIN Board***" means the organized body as defined by HIN's bylaws that executes the HIE Platform. Unless otherwise noted, all references to HIN Board shall be deemed to include its designee.

"***HIN Operating Policies and Procedures***" means the policies and procedures related to privacy and security adopted by the HIN Board that describe the operation and implementation of Use Cases and related processes and may include policies and procedures addressing those categories enumerated in Section 4.2. Except for changes in the HIN Operating Policies and Procedures that are required by changes to Applicable Laws and Standards or to conform to industry standard best practices, all material changes to the HIN Operating Policies and Procedures must be approved by a majority vote of the HIN Board.

"***HIPAA***" means the Health Insurance Portability and Accountability Act of 1996, Title XIII of Division A and Title IV of Division B of the American Recovery and Reinvestment Act of 2009 (the "**HITECH Act**"), and the regulations promulgated thereunder at 45 C.F.R. Parts 160 and 164, each as may be amended from time to time.

"***Initial Term***" shall have the meaning ascribed to it in Section 8.1.

"***Message***" means a mechanism for exchanging Message Content, as defined below, between Participants through the HIE Platform, including query, retrieve, and publish-subscribe.

"***Message Content***" means information which is requested, received or sent by a Participant through the HIE Platform, including PHI, de-identified data, pseudonymized data, metadata, Digital Credentials, as defined in Attachment A, and data schema.

"***Participant***" means the Participating Organization and any other organization that is a party to a Qualified Data Sharing Organization Agreement or similar agreement with HIN.

"***Participant User***" means an individual authorized by a Participant to access Message Content in connection with the HIE Platform through the Participant's System and in a manner consistent with the Permitted Purposes as defined in the Data Sharing Agreement, attached hereto as Attachment A. "Participant User" may include health care providers; individuals whose health

information is contained within, or available through, a Participant's System; or a Participant's employees, contractors, or agents.

"***Permitted Purposes***" shall have the meaning ascribed to it in Section 2.1.

"***Protected Health Information***" or "***PHI***" shall have the meaning set forth at 45 C.F.R. § 160.103 of HIPAA.

"***Service Levels***" shall have the meaning ascribed to it in Section 4.2.

"***System***" means software, portal, platform or other electronic medium controlled by a Participant through which the Participant conducts its health information exchange related activities. For purposes of this definition, it shall not matter whether the Participant controls the software, portal, platform or medium through ownership, lease, license or otherwise.

"***Term***" shall have the meaning ascribed to it in Section 8.1.

"***Use Case***" shall have the meaning ascribed to it in Attachment A.

1.2. **Contract Interpretation**. In this Agreement, unless the context otherwise requires:

1.2.1. Reference to any agreement (including this Agreement), or document, means such agreement, or document as amended or modified and in effect from time to time in accordance with the terms thereof;

1.2.2. "Including" (and "include(s)") means, whether or not specifically indicated in a particular location: (a) including without limiting the generality of any description preceding such term; and (b) with respect to any description following such term, means "including, without limitation" or "including, but not limited to";

1.2.3. The words "shall" and "will" have equal force and effect; and

1.2.4. The section and attachment titles and similar headings are inserted for convenience and shall not limit or restrict the interpretation of this Agreement.

## 2. HIE PLATFORM

2.1 **Grant of Right to Use**. HIN grants to Participating Organization a nonexclusive, nontransferable, nonassignable, nonsub-licensable, and limited right to have access to and use the HIE Platform during the Term of this Agreement on the terms and conditions of this Agreement. Participating Organization may use the HIE Platform to exchange Message Content only for the purposes set forth on the attached Attachment A (the "**Permitted Purposes**") and subject to the additional terms and conditions set forth therein.

2.2 **Additional Restrictions**. Participating Organization acknowledges and agrees that the HIE Platform constitutes a trade secret and confidential information of HIE Platform service

provider(s), if any. Participating Organization shall not permit any person under the control of Participating Organization other than Participant Users to access and/or use the HIE Platform. Participating Organization shall not, nor shall it permit any Participant User or third party, over which it exercises control, to duplicate, modify, adapt, translate, reverse engineer, decompile, disassemble or create a derivative work based on the HIE Platform. The HIE Platform shall not be copied or incorporated into any other computer program, hardware, firmware or product, except as specifically provided for under this Agreement. Participating Organization shall not obtain any rights to the HIE Platform except the limited rights to use the HIE Platform expressly granted by this Agreement.

2.3 **Malicious Code**. Participating Organization shall implement technical and procedural safeguards intended to prevent transmission of any "computer viruses," "time bombs," "malware," worms, Trojan horses, malicious software or any code that is designed to delete, disable, deactivate, interfere with, or otherwise harm or disrupt the HIE Platform.

## 3. RESPONSIBILITIES OF PARTICIPATING ORGANIZATION

3.1 **Minimum System Requirements**. Participating Organization shall be responsible for procuring and maintaining, at its own expense, all equipment, software, services and testing necessary to effectively and reliably participate in the HIE Platform as set forth in Attachment B.

3.2 **Compliance in Using, Disclosing and Obtaining Information**. Participating Organization acknowledges that the information it may provide to or obtain from other parties through the HIE Platform may include PHI, which is subject to protections or limitations on its use or disclosure under federal or state laws. HIN and Participating Organization are each separately responsible for ensuring that it complies with Applicable Laws and Standards in using, disclosing and obtaining information using the HIE Platform. To the extent required by law, Participating Organization shall, or shall require its Participant Users to, obtain any authorization or consent necessary from any individual whose PHI it transmits or requests through the HIE Platform. In the event Participating Organization is a Covered Entity as defined under HIPAA, Participating Organization is responsible for obtaining any authorization or consent from any individual whose PHI it transmits or requests through the HIE Platform. With respect to those activities involving the use or disclosure of PHI, the Parties shall comply with the HIPAA Addendum attached hereto as Attachment C. In addition to those requirements under Attachment C, in the event Participating Organization sends or receives Message Content for which Participating Organization is not authorized to send or receive, Participating Organization will immediately inform HIN, delete such Message Content, and require its Participant Users to do so.

The following Section 3.3 shall not apply to the State of Michigan

3.3 **Patient Care**. Participant Users and, to the extent Participating Organization is a healthcare provider, Participating Organization shall be solely responsible for all decisions and actions taken or not taken involving patient care, utilization management, and quality management for their respective patients and clients resulting from, or in any way related to, the

use of the HIE Platform or the Message Content made available thereby. HIN does not assume any role in the care of any patient.

3.4 **System Security**. Participating Organization shall be responsible for maintaining a secure environment to connect to the HIE Platform which permits compliance with the HIPAA Addendum attached hereto as Attachment C, all Applicable Laws and Standards, any Use Case and the HIN Operating Policies and Procedures provided to Participating Organization. HIN shall be responsible for maintaining the security of the HIE Platform which permits compliance with the HIPAA Addendum attached hereto as Attachment C, all Applicable Laws and Standards, any Use Case and the HIN Operating Policies and Procedures.

3.5 **Audit**.

3.5.1 Participating Organization represents that, through its agents, employees, and independent contractors, it shall have the ability to monitor and audit all access to and use of its system related to this Agreement, for system administration, security, and other legitimate purposes. Participating Organization shall perform those auditing activities required by the Use Cases, if any. HIN reserves the right to validate Participating Organization's compliance with this Section 3 through either: (i) the use of vulnerability assessments and penetration testing; or (ii) in the event Participating Organization has completed such assessments and testing within the previous six (6) months, Participating Organization shall provide to HIN the assessment and/or testing report and demonstrate, to HIN's reasonable satisfaction, that it has in place internal and external, if necessary, measures to monitor its compliance with this Section. In the event HIN conducts such assessments and testing, HIN shall provide to Participating Organization the professional and ethical certifications held by the penetration testing organization. Vulnerability assessment and penetration testing shall be subject to Participating Organization's prior approval, not to be unreasonably withheld. The Parties agree and understand that any vulnerability assessments and penetration testing shall comport with industry best practices as may be set forth by the National Institute of Standards and Technology or a similar standards setting body.

3.5.2 HIN shall have the right, no more than once annually and on at least thirty (30) days' prior written notice to Participating Organization, to conduct an audit during Participating Organization's normal business hours to verify Participating Organization's use of the HIE Platform is in compliance with the terms of this Agreement and verify payments, if any, made to HIN hereunder. Participating Organization agrees to remit to HIN, within a reasonable time but no later than sixty (60) days, any undisputed shortfall in payment. In addition, if any such examination discloses a shortfall in payment to HIN of more than five percent (5%) for any year, Participating Organization agrees to pay or reimburse HIN for that auditing expense upon written request by HIN and agrees to be subject to an additional audit on at least thirty (30) days' prior written notice within twelve (12) months of such audit. In the event of a dispute regarding such amounts due, the parties will submit such dispute to the dispute resolution process provided in Section 12.13.

3.6 **Cooperation**. Participating Organization understands and acknowledges that numerous activities with respect to the HIE Platform shall likely involve another Participant's employees,

agents, and third party contractors, vendors, or consultants. To the extent not legally prohibited, Participating Organization shall, subject to rights to restrict or condition cooperation or disclosure to preserve privilege or protect trade secrets or confidential information: (a) reasonably cooperate with the HIN Board, each other Participant, and any such third parties with respect to such reasonable activities as they relate to this Agreement; (b) provide such information to the HIN Board, each other Participant, or such third parties as they may reasonably request for purposes of performing activities related to this Agreement; (c) devote such time as may reasonably be requested by the HIN Board to review information, meet with, respond to, and advise the HIN Board or other Participants with respect to activities as they relate to this Agreement; (d) provide such reasonable assistance as may be requested by the HIN Board when performing activities as they relate to this Agreement; and (e) subject to a Participant's right to restrict or condition its cooperation or disclosure of information in the interest of preserving privileges in any foreseeable dispute or litigation or protecting Confidential Information, provide information and reasonable assistance to the HIN Board or other Participants in the investigation of breaches and disputes. In no case shall Participating Organization be required to disclose PHI in violation of Applicable Laws and Standards or Confidential Information in violation of other contractual obligations such Participating Organization may be subject to. In seeking another Participant's cooperation, Participating Organization shall make reasonable efforts to accommodate the other Participant's schedules and operational concerns. If any material problems or issues arise in working with the other Participant's employees, agents, or subcontractors that threaten to delay or otherwise adversely impact Participating Organization's ability to fulfill its responsibilities under this Agreement, Participating Organization shall follow the procedures set forth in Section 12.13 (**Dispute Resolution**).

3.7 **Development of and Compliance with the HIN Operating Policies and Procedures**. Participating Organization acknowledges that the HIN Board or its designate has the power to develop, amend, repeal or replace the current HIN Operating Policies and Procedures. Participating Organization shall comply with the HIN Operating Policies and Procedures.

## 4. RESPONSIBILITIES OF HIN

4.1 **Availability of HIE Services**. HIN shall, for the term of this Agreement, provide and make available the HIE Platform, as more particularly described in each Use Case necessary to support Participating Organization's and Participant Users' access to and use of the HIE Platform in accordance with this Agreement.

4.3 **HIN Operations Advisory Committee**. By entering into this Agreement Participating Organization may appoint one representative to the HIN operations advisory committee as created by the HIN Board (the "Committee"). The Committee may advise in the development of the HIN Operating Policies and Procedures and other policies, procedures, performance expectations, and other recommendations that it will provide to the HIN Board for review and consideration. The Committee may oversee a subcommittee or subcommittees to address all activities related to the function and administration of the HIE Platform including technical and architecture issues related to the HIE Platform, address privacy and security issues, and to assist in the dispute resolution process.

4.3 **Maintenance of Agreements**. HIN shall ensure that applicable agreements are in place with Participants governing the Participants' access and use of the HIE Platform. Applicable agreements include business associate agreements as required under HIPAA, Use Cases, and Qualified Data Sharing Organization agreements or similar agreements.

## 5. WARRANTY

5.1 **Limited Warranty**. HIN warrants that the HIE Platform will, during the term of this Agreement, perform in accordance with the levels of performance set forth in Attachment D (collectively referred to as the "**Service Levels**") and the methodology and other terms set forth therein. This warranty shall be void if (and only to the extent) the breach of a warranty is caused by (a) Participating Organization's modification of the HIE Platform (unless such modification was done at the direction of or with the consent of HIN); (b) Participating Organization's use of the HIE Platform in a manner that is not allowed under this Agreement (unless such modified use was at the direction of or with the consent of HIN); or (c) use of the HIE Platform by an unauthorized person that has been given access by Participating Organization or Participant User.

5.2 **Warranty of Title**. HIN warrants that it has the rights necessary to permit the use of the HIE Platform by Participating Organization and the Participant User as contemplated by this Agreement.

5.3 **Warranty of Security**. HIN warrants and represents that it shall implement appropriate technical, physical and administrative security solutions to protect PHI, maintain the confidentiality and availability of the data, and prevent the transmission of viruses and malicious code to Participating Organization.

5.4 **Warranty of Services**. Each party warrants and represents that any services to be provided by it or by a permitted subcontractor pursuant to a valid Statement of Work, as defined hereinafter at Section 11.1, shall be performed in a professional manner, consistent with the best practices of the industry and in a diligent, workmanlike, and expeditious manner, and that time is of the essence for all services.

5.5 **DISCLAIMER**. EXCEPT AS EXPRESSLY SET FORTH HEREIN, THE HIE PLATFORM IS PROVIDED "AS IS," WITHOUT WARRANTY OF ANY KIND. WITHOUT LIMITING THE FOREGOING, EXCEPT AS EXPRESSLY PROVIDED IN SECTION 5, HIN AND HIE PLATFORM SERVICE PROVIDER(S), TO THE EXTENT REQUIRED BY SUCH HIE PLATFORM SERVICE PROVIDER, DISCLAIM ANY WARRANTY THAT THE HIE PLATFORM WILL BE ERROR-FREE OR UNINTERRUPTED OR THAT ALL ERRORS WILL BE CORRECTED. NO ADVICE OR INFORMATION, WHETHER ORAL OR WRITTEN, OBTAINED FROM HIN OR ELSEWHERE WILL CREATE ANY WARRANTY NOT EXPRESSLY STATED IN THIS AGREEMENT.

5.6 **Inaccurate or Incomplete Message Content**. All Message Content that is made available through the HIE Platform is subject to change arising from numerous factors, including changes to patient health information made at the request of the patient, changes in the patient's

health condition, the passage of time and other factors. HIN does not alter or transform Message Content, nor does it monitor the specific content or accuracy of Message Content being transmitted. Participating Organization acknowledges that Message Content received may not include an individual's full and complete medical record or history. Such Message Content will only include that Message Content which is the subject of the Message and available for exchange among Participants in the HIE Platform. Without limiting any other provision made under this Agreement, and provided HIN promptly transmits such Message and has properly installed, configured, tested, secured, and maintained the HIE Platform, HIN SHALL HAVE NO RESPONSIBILITY FOR OR LIABILITY RELATED TO THE ACCURACY, CONTENT, CURRENCY, COMPLETENESS, OR DELIVERY OF ANY MESSAGE CONTENT PROVIDED BY A PARTICIPANT TO THE HIE PLATFORM.

5.7 **Carrier Lines**. Access to the HIE Platform is to be provided over various facilities and communications lines, and information shall be transmitted over local exchange and Internet backbone carrier lines and through routers, switches, and other devices (collectively, "**Carrier Lines**") owned, maintained, and serviced by third-party carriers, utilities, and Internet Service Providers, all of which are beyond HIN's control. HIN assumes no liability and does not make any warranties relating to the integrity, privacy, security, confidentiality, or use of any information while it is transmitted over those Carrier Lines. Use of the Carrier Lines is solely at Participating Organization's risk and is subject to all Applicable Laws and Standards.

## 6. PAYMENT

6.1 **Fees**. Any and all fees and payments shall be set forth through a separately negotiated and mutually agreed-upon Statement of Work (as that term is defined in Section 11.1). No Statement of Work shall be considered valid nor any fees due unless a mutually agreed upon Statement of Work has been executed by authorized representatives of both Parties.

6.2 **Payment Terms**. HIN shall invoice Participating Organization in accordance with the terms set forth on the applicable Statement of Work. All undisputed invoices are due within thirty (30) days of receiving the invoice. Any payment due under this Agreement not received within fifteen (15) days of the due date shall be subject to a late payment charge of 1.5% per month or the maximum rate allowed by law, whichever is less. All amounts under this Agreement are due in U.S. currency. All fees paid by Participating Organization are nonrefundable, except as otherwise expressly provided in this Agreement.

6.3 **Taxes**. All fees and other amounts stated or referred to in this Agreement are exclusive of taxes, duties, levies, tariffs, and other governmental charges. Participating Organization will be responsible for payment of all taxes and any related interest and/or penalties resulting from any payments made hereunder that are applicable to Participating Organization, other than any taxes based on HIN's net income, revenues or corporate characteristics.

6.4 **Third-Party Fees and Charges**. Participating Organization shall be solely responsible for any other charges or expenses Participating Organization may incur to access or use the HIE Platform, including any charges for communications lines, Internet service providers and/or fees

charged by vendors of third-party products. In the event HIN provides services or products offered by a third-party vendor, Participating Organization shall not be charged for such fees without its prior consent.

## 7. CONFIDENTIALITY

7.1 **Use and Disclosure Restrictions**. Each party will not use the other party's Confidential Information except as expressly permitted herein, and will not disclose such Confidential Information to any third party, except to employees and consultants who have a bona fide need to know such Confidential Information; provided, that each such consultant first executes a written agreement (or is otherwise already bound by a written agreement) that contains use and nondisclosure restrictions at least as protective of the disclosing party's Confidential Information as those set forth herein. However, each party may disclose Confidential Information of the other party: (a) pursuant to the order or requirement of a court, administrative agency, or other governmental body, provided that to the extent practicable the disclosing party gives reasonable notice to the other party to contest such order or requirement; and (b) on a confidential basis to its legal or financial advisors. Notwithstanding the foregoing, HIN may provide a copy of a redacted version of this Agreement to HIE Platform service provider(s) upon request, such redaction to include at least any Confidential Information of Participating Organization.

7.2 **Equitable Relief**. Each party acknowledges that the unauthorized disclosure or use of the disclosing party's Confidential Information is likely to cause irreparable harm to the disclosing party, for which the award of damages will not be an adequate remedy. Consequently, the disclosing party shall be entitled to obtain preliminary and permanent injunctive relief to restrain such unauthorized disclosure or use, in addition to any other relief to which the disclosing party may be entitled at law or in equity.

7.3. **Protected Health Information**. The terms and conditions of the HIPAA Addendum, attached hereto as Attachment C, shall apply to the parties' use, access and disclosure of PHI.

## 8. TERM & TERMINATION

8.1 **Term**. This Agreement will commence on the Effective Date and will remain in effect for an initial term of two (2) years (the "**Initial Term**"). Thereafter, this Agreement shall automatically renew for successive terms of one (1) year (each a "**Renewal Term**"), unless either party provides the other party with written notice of non-renewal not less than ninety (90) days prior to the expiration date of the then-current term (the Initial Term and each Renewal Term, collectively, are the "**Term**").

8.2 **Termination.** Either party, upon giving written notice to the other party, may terminate this Agreement or any Statement of Work: (a) if the other party breaches any material provision of this Agreement and fails to cure such breach, or fails to commence and continuously maintain substantial efforts to cure, within thirty (30) days after receipt of written notice thereof from the other party; (b) in the event the other party terminates or suspends its business, becomes subject to any bankruptcy or insolvency proceeding under federal or state statute, or becomes subject to direct control by a trustee or similar authority; (c) upon ninety (90) days' prior written notice.

8.3 **Obligations Upon Expiration or Termination**. Upon expiration or termination of this Agreement: (a) each party will promptly return to the other party or, at such other party's request, destroy, any Confidential Information of the other party, including all copies and portions thereof, and provide such party with an officer's written statement certifying to its compliance with the foregoing; and (b) Participating Organization will, within thirty (30) days of receipt of HIN's invoice, pay all fees accrued by Participating Organization as of the effective date of expiration or termination. Upon the written request of Participating Organization, HIN shall provide Participating Organization, at mutually agreed upon rates, not to exceed three hundred dollars ($300) per hour, assistance relating to the transition from the HIE Platform to another solution. Notwithstanding the foregoing, Participating Organization shall not be required to retrieve and destroy Confidential Information stored on backup media, other than in the normal course of data management activities.

8.4 **Effect of Termination**. Upon termination of this Agreement for any reason, Participating Organization and Participant Users shall no longer be authorized to use the HIE Platform. Access to the HIE Platform shall be terminated, and any further access by or on behalf of the Participating Organization shall be prohibited unless otherwise agreed in writing by HIN.

8.5 **Survival**. The rights and obligations of the parties under Sections 2, 3, 4.3, 5, 6, 7, 8.3, 8.5, 9, and 10 will survive any expiration or termination of this Agreement.

**9. INDEMNIFICATION**

9.1 **Participating Organization**. Participating Organization agrees to defend, indemnify and hold harmless (including payment of reasonable attorneys' fees) HIN from and against any liability, claim, action, loss, damage, or expense (including court costs and reasonable attorneys' fees) based on any third-party claims arising out of, or relating to: (a) unauthorized or inappropriate use of or modifications by Participating Organization to the HIE Platform; or (b) HIN's receipt, transmission, or use of any Message Content furnished or requested by Participating Organization, except to the extent such receipt, transmission or use by HIN is in violation of this Agreement.

9.2 **HIN**. HIN shall defend, indemnify, and hold harmless Participating Organization and its officers, directors, and employees, from and against any liability, claim, action, loss, damage, or expense (including court costs and reasonable attorneys' fees) arising out of any third-party claim brought against Participating Organization alleging: (a) that use of the HIE Platform in accordance with this Agreement infringes or misappropriates a third-party's United States patent, copyright or trade secret; or (b) a failure by HIN to maintain the proper agreements under Section 4.4. HIN shall have no obligations under this Section if such claims, damages and liabilities result from Participating Organization's breach of this Agreement or Participating Organization's unauthorized or inappropriate use of or modifications to the HIE Platform.

9.3 **Defense**. A party having a right to indemnification under this Agreement ("**Indemnified Party**") may, at its election, require the party having an obligation to indemnify under this Agreement ("**Indemnifying Party**"), defend any claim, suit or proceeding that is subject to indemnification under this Section 9, provided that the Indemnifying Party is notified promptly

in writing of such claim and is given authority, information and assistance to handle such claim and to defend any suit or proceeding.

## 10. LIMITATION OF LIABILITY

10.1 **EXCLUSION OF DAMAGES**. IN NO EVENT WILL EITHER PARTY BE LIABLE TO THE OTHER PARTY OR TO ANY THIRD PARTY FOR ANY INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, EXEMPLARY OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT OR THE USE, PERFORMANCE OR OPERATION OF THE HIE PLATFORM, WHETHER SUCH LIABILITY ARISES FROM ANY CLAIM BASED UPON CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE), PRODUCT LIABILITY OR OTHERWISE, AND WHETHER OR NOT A PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSS OR DAMAGE.

10.2 **TOTAL LIABILITY**. THE PARTIES' TOTAL CUMULATIVE LIABILITY TO EACH OTHER OR TO ANY THIRD PARTY FROM ALL CAUSES OF ACTION AND ALL THEORIES OF LIABILITY, WILL BE LIMITED TO, AND WILL NOT EXCEED, THE GREATER OF TOTAL AMOUNTS PAID OR PAYABLE UNDER THIS AGREEMENT OR $500,000.

10.3 **Acknowledgement of Risk**. Sections 10.1 and 10.2 do not apply to the indemnification obligations set forth in Section 9 or to claims arising out of or related to either party's infringement or misappropriation of the other party's intellectual property rights. With this sole exclusion, the parties acknowledge and agree that the provisions hereof that disclaim warranties, exclude consequential damages or other damages or remedies or limit liability shall remain fully valid, effective and enforceable in accordance with their respective terms, even under circumstances that cause an exclusive remedy to fail of its essential purpose.

## 11. SERVICES

11.1 **Statement of Work**. Each purchase of services by either HIN or Participating Organization shall be documented in a signed statement of work substantially in a form mutually agreed upon by the parties (the "Statement of Work" or "SOW"). Each SOW shall include the following items applicable to the work to be performed thereunder, unless otherwise mutually agreed in writing by the Parties: (i) the scope of the work to be performed, (ii) the key activities, (iii) the projected duration, (iv) the deliverables, deliverables specifications, and due dates, (v) the roles and responsibilities of each of the parties, (vi) any specific governance or resource management processes, reporting, and meeting requirements, (vii) staffing information and a schedule of key personnel, (viii) any specific assumptions that are relevant, (ix) statement of the pricing arrangements, e.g.: fixed rate, hourly, or not-to-exceed, (x) if the pricing arrangement is an hourly rate project, provide an estimate of the hourly charges for the services to be delivered under such SOW specifying the estimated fees at the applicable rates, (xi) any applicable service level agreements, (xii) an estimate of expenses, and (xiii) any other terms that specifically relate to the applicable services or work under such SOW.

11.2 **Conflicting Terms**. Each SOW shall be a part of and be governed by the terms and conditions of this Agreement. If there is a conflict between this Agreement and any SOW, the terms of the SOW shall control, provided, however, that an amendment to any term of these terms and conditions shall not be effective unless otherwise expressly provided in such SOW that a contrary provision is necessary due to applicable legal or regulatory requirements, or unless identified by reference in a separate section of the SOW with the following legend:

"*Notwithstanding anything to the contrary contained in the Agreement, the following provisions of this SOW shall govern the obligations of the parties with respect to this SOW, only, but shall not otherwise amend or supersede the Agreement: [Insert references to specific provisions of the Agreement]*"

## 12. GENERAL

12.1 **Third Party Beneficiaries**. Except as otherwise stated herein, no third party shall have the right to claim a beneficial interest in or to any right occurring by virtue of this Agreement between HIN and the Participating Organization. Notwithstanding the foregoing, in the event HIE Platform service provider requires HIN to name HIE Platform service provider as a third-party beneficiary of this Agreement, HIE Platform service provider shall be deemed to be a third-party beneficiary of this Agreement with respect to those provisions that expressly confer rights on, or otherwise specify or require the consent or consultation of, the HIE Platform service provider.

12.2 **Assignment**. No party may assign or transfer any or all of its rights and/or obligations under this Agreement or any part of it, nor any benefit or interest in or under it, to any third party without the written consent of the other party which shall not be unreasonably withheld, provided however, that this provision shall not apply where the assignment or transfer is effected by the sale or transfer of assets or of a controlling ownership interest in HIN or Participating Organization.

12.3 **Governing Law**. This Agreement will be governed by and construed in accordance with the laws of the State of Michigan without reference to or application of conflict of laws rules or principles.

12.4 **Severability**. If for any reason a court of competent jurisdiction finds any provision of this Agreement invalid or unenforceable, that provision of the Agreement will be enforced to the maximum extent permissible and the other provisions of this Agreement will remain in full force and effect.

12.5 **Waiver**. Except as provided in Sections 5.5 and 12.13, nothing in this Agreement shall be construed to restrict a Party's right to pursue all remedies available under law for damages or other relief arising from acts or omissions of the other Party related to this Agreement, or to limit any rights, immunities or defenses to which a Party may be entitled under Applicable Laws and Standards. No failure or delay by any Party in exercising its rights under this Agreement shall

operate as a waiver of such rights, and no waiver of any right shall constitute a waiver of any prior, concurrent, or subsequent right.

12.6 **Notices**. Any notice, request, demand or other communication required or permitted to be given under this Agreement will be given in writing, will reference this Agreement and will be deemed properly given: (a) when actually delivered in person; (b) two (2) business days after deposit with a nationally recognized express courier; or (c) five (5) business days after mailing via certified mail, postage prepaid. Any such notice, request, demand or other communication will be sent to the addresses set forth in the signature block below or to such other address as may be specified by either party to the other in accordance with this Section. Either party may change its address for notices under this Agreement by giving written notice to the other party by the means specified in this Section.

12.7 **Force Majeure**. Neither party will be liable for any failure or delay in its performance under this Agreement due to causes beyond its reasonable control, including denial-of-service attacks, shortages of or inability to obtain labor, energy, raw materials or supplies, war, terrorism, riot, acts of God or governmental action.

12.8 **Relationship of Parties**. The parties to this Agreement are independent contractors and this Agreement will not establish any relationship of partnership, joint venture, employment, franchise, or agency between the parties. Neither party will have the power to bind the other or incur obligations on the other's behalf without the other's prior written consent.

12.9 **Nonsolicitation**. Each Party recognizes that the employees of the other Party, and such employees' loyalty and service to that other party, constitute a valuable asset of that other party. Accordingly, except upon the prior written consent of the other Party, each Party agrees not to solicit or hire any employee of the other Party during the term of this Agreement and for six (6) months after any termination of this Agreement, or six (6) months following termination of employment of an employee with the other Party, whichever occurs first. This provision does not apply to employees responding to a public advertisement or other similar posting.

12.10 **Counterparts**. This Agreement may be executed in counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument.

12.11 **Headings**. The headings in this Agreement are for the convenience of reference only and have no legal effect.

12.12 **Insurance**. Throughout the Term of this Agreement, the Parties shall maintain in force, either through a reasonable program of self insurance or through commercial insurance, at a minimum the following insurance coverage: (a) commercial general liability insurance in the amount of $3 million per occurrence and $5 million annual aggregate; (b) umbrella/excess liability insurance in the minimum amount of $5 million per occurrence and $5 million annual aggregate; (c) privacy and network security (cyber liability) insurance covering loss or disclosure of Confidential Information in the amount of $5 million annual aggregate including coverage for fraudulent or dishonest acts committed by an employee, agent or contractor of the applicable party, acting alone or in collusion with others.

12.13 **Dispute Resolution**.

12.13.1 As a Party's sole remedy when a dispute arises between either Participating Organization and HIN or between Participating Organization and another Participant (a "**Dispute**") regarding this Agreement, Participating Organization will send written notice to the appropriate HIN Committee. Such written notice shall set forth in detail and with clarity the problems that Participating Organization has identified. Within sixty (60) calendar days of receiving the notice, such HIN Committee will convene a meeting of the subcommittee with responsibility over dispute resolution (the "**Dispute Resolution Subcommittee**"). The Dispute Resolution Subcommittee will be comprised of individuals selected by the HIN Board or its designate in accordance with its policies and procedures. During this meeting, each Participant will be able to present its version of the Dispute and any information that it believes is pertinent to the Dispute Resolution Subcommittee's decision. The Dispute Resolution Subcommittee will have the ability to request additional information from the Participants to help it make its determination. The Dispute Resolution Subcommittee, however, will not have the authority to compel a response or the production of testimony or documents by the Participants. To the extent that the Participants do respond to requests of the Dispute Resolution Subcommittee by producing documents, Participants will have the ability to mark the documents produced as "Confidential Information" and the Dispute Resolution Subcommittee will treat those documents in accordance with Section 7 of this Agreement.

12.13.2 Within fifteen (15) calendar days of the Dispute Resolution Subcommittee meeting, the Dispute Resolution Subcommittee will issue a written, nonbinding recommendation for the HIN Board. Within sixty (60) days of receipt of the Dispute Resolution Subcommittee recommendation the HIN Board will issue a final decision resolving the Dispute

12.13.3 Notwithstanding the foregoing, in the event of a Dispute wherein Participating Organization maintains a reasonable belief of imminent harm, Participating Organization may ask that the Executive Director of HIN request the chairman of the HIN Board to call an emergency meeting of the HIN Board to issue a final decision resolving the Dispute.

All such discussions shall be treated as Offers to Compromise Under Rule 408 of the Federal Rules of Evidence.

12.14 **Debarment, Suspension and Investigation**. Participating Organization represents and warrants to the best of its knowledge that neither it, nor any of its employees directly involved in performing under this Agreement: (a) are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or contractor; (b) have been convicted of fraud in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction nor contract under a public transaction; or (c) are currently under a final order issued by any federal, state, local or international regulatory or law enforcement organization finding a violation of

Applicable Laws and Standards related to the privacy or security of PHI that will materially impact the Participating Organization's ability to fulfill its obligations under this Agreement. Participating Organization shall inform the HIN Board if at any point during its participation in the HIE Platform it comes under such an order or any order that will materially impact the Participating Organization's ability to fulfill its obligations under this Agreement.

12.15 **Compliance with Fraud and Abuse Laws**. Neither Party has provided or received anything of value with the intent to induce referrals from or to the other Party. Notwithstanding any unanticipated effect of any of the provisions herein, neither Party shall intentionally conduct itself under the terms of this Agreement in a manner to constitute a violation of the Medicare and Medicaid Fraud and Abuse Provisions (42 U.S.C. Sections 1395nn(b) and 1396h(b)), including the Medicare and Medicaid Anti-Fraud and Abuse Amendments of 1977 and the Medicare and Medicaid Patient and Program Protection Act of 1987 (42 U.S.C. Sections 1320a-7 et seq.) or any other applicable federal, state or local law, rule, or regulation. The Parties agree that the execution of certain Use Cases may require the addition of certain flow down terms. In such case, the Parties agree to comply with the terms of such flow down terms in the applicable Use Case.

12.16 **Order of Precedence**. Except as expressly stated otherwise in this Agreement, in the event of any conflict or inconsistency between the terms of this Agreement and any other document ancillary or relating thereto, the following order of precedence shall apply, but only to the extent of an express conflict or inconsistency: (a) the Attachments; (b) this Agreement.

12.17 **Entire Agreement**. This Agreement, including all Attachments, constitutes the complete understanding and agreement of the parties regarding its subject matter and supersedes all prior or contemporaneous agreements or understandings, oral or written, relating to its subject matter. Any waiver, modification or amendment of any provision of this Agreement will be effective only if in writing and signed by duly authorized representatives of the parties.

12.18 **Marks/Logos**. Neither party shall use, display, or publish the name, logos, brands, or trademarks of the other party without prior written consent.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed as of the Effective Date by their duly authorized representatives.

Effective Date: _____, 20___

| PARTICIPATING ORGANIZATION: | MICHIGAN HEALTH INFORMATION NETWORK SHARED SERVICES |
|---|---|
| By: _____ | By: _____ |
| Name: _____ | Name: _____ |
| Title: _____ | Title: _____ |
| Address: | Address: |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

**Attachments**

A Data Sharing Agreement
B Minimum System Requirements
C HIPAA Addendum
D Service Levels of HIE Platform

7289178

Attachment A

# DATA SHARING AGREEMENT

This Data Sharing Agreement ("**Agreement**") is made and entered into by and between **MICHIGAN HEALTH INFORMATION NETWORK SHARED SERVICES**, a Michigan nonprofit corporation ("**HIN**"), and the undersigned Participating Organization, on _____ 20__ ("**Effective Date**"). HIN and Participating Organization are referred to herein collectively as "**Parties**" and individually as a "**Party**."

## RECITALS:

A. Participating Organizations have each individually entered into a qualified data sharing organization agreement or similar agreement ("**Qualified Data Sharing Organization Agreement**") with HIN for participating in the HIE Platform, which is Michigan's initiative to improve health care quality, cost, efficiency, and patient safety through electronic exchange of health information;

B. Using the HIE Platform requires that the Parties electronically exchange data; and

C. The purpose of this Agreement is to provide a legal framework within which the Participating Organizations will exchange Message Content through the HIE Platform.

NOW, THEREFORE, the Parties agree as follows:

**1. APPLICATION; DEFINITIONS.** The provisions of this Agreement applicable to "Participant" or "Participants," including without limitation consents, acknowledgements, rights, and obligations of a "Participant" or of "Participants," apply to Participating Organizations. Unless otherwise defined herein, capitalized terms used in this Agreement have the meanings given them in the Qualified Data Sharing Organization Agreement.

**1.1 "Adopting Participant"** has the meaning set forth in Section 4.2.

**1.2 "Authorization"** has the meaning set forth in HIPAA at 45 C.F.R. §164.508.

**1.3 "Common HIN Resource"** means the HIE Platform and any and all software, utilities, automated tools and Documentation which have been designated as a "Common HIN Resource" by the HIN Board at any time and from time to time.

**1.4 "Digital Credentials"** means a digital certificate, including Server Certificates, issued to the Participating Organization by HIN, its designee or trusted anchor. The Digital Credentials will be presented electronically by the Participating Organization to prove identity and the right to access Message Content through the HIE Platform.

**1.5 "Dispute"** means any controversy, dispute, or disagreement arising out of or relating to this Agreement.

**1.6 "Environment"** has the meaning set forth in Section 4.3.1.

**1.7 "Health Care Operations"** has the meaning set forth in HIPAA at 45 C.F.R. §164.501.

**1.8 "Health Information Service Provider"** or **"HSP"** means a company or other organization that supports a Participating Organization by providing it with operational, technical, or health information exchange related services.

**1.9 "Material Change"** has the meaning set forth in Section 4.3.1.

**1.10 "Non-Material Change"** has the meaning set forth in Section 4.3.1.

**1.11 "Participant Access Policies"** has the meaning set forth in Section 3 of this Agreement.

**1.12 "Pass-Through Entity"** means an entity that provides one or more of the following uses, without controlling or otherwise altering the Message Content received from a Participant: (i) the electronic transfer of Message Content; (ii) the electronic storage of Message Content; (iii) the electronic conversion of Message Content from one format to another format in accordance with technical specifications recognized as a standard by the healthcare industry or a regulating body of such industry or the HIN Board, where such a standard includes but is not limited to HL7, PDF, XML, HTTPS, DICOM, LOINC or SNOMED; or (iv) the electronic display of Message Content.

**1.13 "Payment"** has the meaning set forth in HIPAA at 45 C.F.R. §164.501.

**1.14 "Permitted Purposes"** means the following approved reasons for which Message Content may be exchanged through the HIE Platform:

(a) By health care providers for Treatment, Payment and/or Health Care Operations consistent with the requirements set forth in HIPAA;

(b) Public health activities and reporting as permitted by HIPAA and other Applicable Laws and Standards;

(c) To facilitate the implementation of "meaningful use" criteria as specified in the American Recovery and Reinvestment Act of 2009 and as permitted by HIPAA;

(d) Uses and disclosures pursuant to an Authorization provided by the individual who is the subject of the Message or such individual's personal representative in accordance with HIPAA;

(e) By Participants for any and all purposes, including but not limited to pilot programs and testing, provided that such purposes are consistent with Applicable Laws and Standards; and

(f) For any additional purposes as specified in any Use Case, provided that such purposes are consistent with Applicable Laws and Standards.

**1.15 "Proposal"** has the meaning set forth in Section 4.3.1.

**1.16 "Recipient"** means the person(s) or organization(s) that receives Message Content through the HIE Platform for a Permitted Purpose. Recipients may include, but are not limited to, Participant Users and Requesting Participants.

**1.17 "Requesting Participant"** means a Participant that submits a Message, on behalf of a Participant User, which initiates an exchange of Message Content. A Requesting Participant is also a Recipient upon receipt of Message Content from a Responding Participant.

**1.18 "Responding Participant"** means a Participant that receives or responds to a Message from a Requesting Participant.

**1.19 "Server Certificate"** means a digital certificate that enables web servers to operate in a secure mode by unambiguously identifying and authenticating a server and encrypting any information passed between the server and a web browser.

**1.20 "System"** means software, portal, platform, or other electronic medium controlled by Participating Organization through which Participating Organization conducts its health information exchange related activities. For purposes of this definition, it shall not matter whether Participating Organization controls the software, portal, platform, or medium through ownership, lease, license, or otherwise.

**1.21 "Treatment"** has the meaning set forth in HIPAA at 45 C.F.R. §164.501.

**1.22 "Use Case"** means the specifications that prescribe the data content, technical, and security requirements the Participating Organization must follow to use the specified feature of the HIE Platform.

## 2. USE OF MESSAGE CONTENT.

**2.1 Permitted Purposes.** Subject to Section 2.4 (Informed Opt Out), the HIE Platform shall be used only for Permitted Purposes as defined in this Agreement and as may be modified by a Use Case, *provided, however,* that any modification of Permitted Purposes in a Use Case shall be limited to that Use Case and may only be undertaken in a manner that complies with all Applicable Laws and Standards. Each Participant shall require that its Participant Users only use the HIE Platform for the Permitted Purposes.

**2.2 Permitted Future Uses.** Subject to this Section 2.2, Section 2.4 (Informed Opt Out) and Section 9.2 (Disposition of Message Content Upon Termination), Recipients may retain, use and re-disclose Message Content received in response to a Message in accordance with this Agreement, Applicable Laws and Standards and the Recipient's record retention policies and procedures. If the Recipient is a Participant that is a Business Associate, as defined in HIPAA at 45 C.F.R. §160.103, of its Participant Users, such Participant may retain, use and re-disclose Message Content received in response to a Message in accordance with this

Agreement, Applicable Laws and Standards and the agreements between the Participant and its Participant Users. Except as expressly stated otherwise in this Agreement, in the event of any conflict or inconsistency between the terms of this Section 2.2 and any other document ancillary or relating thereto, the following order of precedence shall apply, but only to the extent of an express conflict or inconsistency: (a) Applicable Laws and Standards, (b) any Use Case entered into between the Parties, and (c) this Agreement.

**2.3 Management Uses.** Subject to Section 2.4 (Informed Opt Out), the HIN Board may request information from Participants, and Participants shall provide requested information, for the development of Use Cases, HIN Operating Policies and Procedures, and other relevant purposes consistent with this Agreement and the goals of HIN; *provided*, *however*, that in no case shall a Participant be required to disclose PHI to the HIN Board in violation of Applicable Laws and Standards, nor shall a Participant be required to disclose PHI or Confidential Information to the HIN Board in violation of any outstanding obligations Participant has (i.e., contract or otherwise). Any request pursuant to this Section 2.3 shall be in writing and shall be accompanied by a clear and concise explanation as to its purpose. The Parties agree to work together in good faith to set an appropriate response time to any request made pursuant to this Section 2.3. Any information provided by a Participant to the HIN Board *shall not* be Confidential Information unless expressly so labeled by such Participant; *provided, however*, that the confidentiality of Message Content shall be determined based on the intended use of the data, as specified in the applicable Use Case.

**2.4 Informed Opt Out.** HIN and each Participant shall comply with the Individual Participant Policy for Informed Opt Out as incorporated into the HIN Operating Policies and Procedures and as may be revised from time to time.

**3. SYSTEM ACCESS POLICIES.** Each Participant shall have policies and procedures in place that govern its Participant Users' ability to access information on or through the Participant's System and through the HIE Platform ("**Participant Access Policies**"). Each Participant acknowledges that Participant Access Policies will differ among them as a result of differing Applicable Laws and Standards and business practices. Each Participant shall be responsible for determining whether and how to respond to a Message based on the application of its Participant Access Policies to the information contained in the assertions that accompany the Message as required by the Use Cases. The Participants agree that each Participant shall comply with the Applicable Laws and Standards, this Agreement, and the Use Cases in responding to Messages.

**4. USE CASES.**

**4.1 Adoption of New Use Cases.** The Parties acknowledge that the HIN Board has full authority to adopt new Use Cases, the right to prioritize Use Cases to be developed or modified and to oversee and adopt changes to Use Cases in accordance with Section 4.3 (Use Case Change Process) of this Agreement. Participants may submit proposals to the HIN Board for the creation and adoption of Use Cases, provided that such proposals are submitted consistent with any requirements set forth in the HIN Operating Policies and Procedures.

**4.2 General Compliance.** Notwithstanding anything in Section 4.3 to the contrary, each Participant shall determine, in its sole discretion, whether to adopt a Use Case ("**Adopting Participant**") and such adoption shall be memorialized in writing. Adopting Participants shall fully comply with the requirements of the Use Case.

**4.3 Use Case Change Process.**

4.3.1 ***Determination of Materiality***. The HIN Board shall review Applicable Laws and Standards and the health care market (the "**Environment**"), consistent with its standard operating practice, and shall determine, in its discretion, whether the Environment calls for modification, repeal or a replacement of an existing Use Case or for the development of a new Use Case (each, a "**Proposal**"). The HIN Board shall review each Proposal and determine, in its sole discretion, whether the Proposal's adoption and implementation will have a material effect on the Adopting Participants. For purposes of this determination, the HIN Board may consider, among other things, whether the adoption and implementation of the Proposal will result in operational, financial, or structural impacts to all Adopting Participants, the nature and scope of such impacts, and the number of potentially affected Adopting Participants. If the HIN Board determines that the Proposal will not have a material effect on Adopting Participants (a "**Non-Material Change**"), then the HIN Board shall follow the change process in Section 4.3.2 (Non-Material Changes to Use Cases). If the HIN Board determines that the Proposal will have a material effect on Adopting Participants (a "**Material Change**"), then the HIN Board shall follow the change process in Section 4.3.3 (Material Changes to Use Cases) unless otherwise permitted pursuant to Section 4.3.4 (Change Required to Comply with Applicable Laws and Standards or the Stability of the HIE Platform).

4.3.2 ***Non-Material Changes to Use Cases***. The HIN Board or its designee may implement any Proposal, at any time by providing each Adopting Participant notice of the change at least forty-five (45) days prior to the effective date of the change provided that the new or amended Use Case is a Non-Material Change. Within fifteen (15) days of receiving notice of the Non-Material Change, the Adopting Participant may submit a written request that the HIN Board delay implementation of the Proposal based on unforeseen complications or other good cause, which shall be fully detailed in the Participant's written request. The HIN Board or its designee shall respond to a request to delay implementation within seven (7) days of receiving the request. Any obligation to adopt or reject the amended Use Case is suspended for the objecting Participant while the HIN Board considers the request to delay implementation.

4.3.3 ***Material Changes to Use Cases***. If the Proposal is a Material Change, the HIN Board shall notify each Participant of the proposed Material Change and allow the Participant thirty (30) days to submit written comments to the HIN Board regarding the affected Proposal. Within sixty (60) days of issuing notice of the proposed Material Change, but not before the earlier of the end of the thirty (30) day written comment period or acknowledgement that the Adopting Participants have responded, the HIN Board shall convene a meeting at which the Adopting Participants will be allowed to present information on the Proposal to the HIN Board. Within ninety (90) days of issuing notice of the proposed Material Change, the HIN Board shall consider and evaluate both written comments received during the comment period and information presented at the meeting, make any revisions to the Proposal that are necessary, and provide the Adopting Participants final notice of the Material Change. The Adopting

Participants shall be given at least one hundred and twenty (120) days after the HIN Board provides the final notice to comply with the changed Use Case.

4.3.4 ***Change Required to Comply with Applicable Laws and Standards or the Stability of the HIE Platform***. If a Proposal is required for the Parties to comply with Applicable Laws and Standards or to maintain the stability of the HIE Platform, the HIN Board, in its sole discretion, may seek input from relevant parties but is not required to follow the processes set forth in Sections 4.3.2 (Non-Material Changes to Use Cases) and 4.3.3 (Material Changes to Use Cases). Where change to the Use Case is required to comply with Applicable Laws and Standards, the HIN Board shall not require the Adopting Participants to comply with such new or changed Use Cases prior to the legally required effective date of such Applicable Laws and Standards. The HIN Board shall notify Adopting Participants as soon as practicable in the event of a change that is required to comply with Applicable Laws and Standards or to maintain the stability of the HIE Platform.

**4.4 Withdrawing from a Use Case.** Adopting Participants may, in their sole discretion and for any reason, withdraw from a Use Case by providing HIN with sixty (60) days prior written notice.

## 5. EXPECTATIONS OF PARTICIPANTS.

**5.1 Exchanging Messages.** If required under a certain Use Case, all Participants that allow their respective Participant Users to submit Messages that seek Message Content for Treatment shall have a corresponding reciprocal duty to require Participant Users to respond to Messages that seek Message Content for Treatment. A Participant, or a Participant User as applicable, shall fulfill its duty to respond by either (i) responding to the Message with the requested Message Content or, (ii) responding with a standardized response that indicates the Message Content is not available or cannot be exchanged. All responses to Messages shall comply with this Agreement, Use Cases, HIN Operating Policies and Procedures, any agreements between Participants and their Participant Users, and Applicable Laws and Standards. Nothing in this Section 5.1 shall require a disclosure that is contrary to a restriction placed on the Message Content by a patient pursuant to Applicable Laws and Standards including but not limited to the patient's right to Opt Out as set forth in Section 2.4 (Informed Opt Out).

**5.2 Halt to Message Exchange.** If a Participant desires to stop exchanging Message Content with another Participant based on the other Participant's acts or omissions in connection with the HIE Platform, this Agreement or Use Cases, the Participant may temporarily stop exchanging Message Content with such Participant, to the extent necessary to address the Participant's concerns, and shall follow the procedures set forth in Section 12.13 (Dispute Resolution) of the Qualified Data Sharing Organization Agreement.

**5.3 Participant Users and HSPs.** Each Participant shall require that all of its Participant Users and HSPs use the HIE Platform only in accordance with the terms and conditions of the Qualified Data Sharing Organization Agreement and this Agreement, including without limitation those provisions governing the use, confidentiality, privacy, and security of Message Content. Each Participant shall discipline appropriately any of its employee Participant

Users, or take appropriate contractual action with respect to contractor Participant Users or HSPs, who fail to act in accordance with the terms and conditions of the Qualified Data Sharing Organization Agreement or this Agreement relating to the privacy and security of Message Content, in accordance with Participant's employee disciplinary policies and procedures and its contractor and vendor policies and contracts, respectively, and as may be required by Applicable Laws and Standards.

**6. SPECIFIC DUTIES.** The Participants shall each bear certain duties with respect to Messages.

**6.1 Specific Duties of a Requesting Participant.** A Requesting Participant shall be responsible for:

(a) Submitting each Message to the HIE Platform in compliance with the Use Cases and HIN Operating Policies and Procedures. Further:

(1) for Requesting Participants who are more than Pass-Through Entities (such as data processors or data originators), such Requesting Participants represent that the Message is: (i) for a Permitted Purpose; (ii) supported by appropriate legal authority for obtaining the Message Content; and (iii) submitted by a Participant User with the legal authority to make such a submission, and

(2) for Requesting Participants that are Pass-Through Entities, such Requesting Participants represent that each Participant User has contractually affirmed that (i) the Participant User submitting the Message has the legal authority to make such a submission, (ii) the Message is submitted for a Permitted Purpose and (iii) the Message is supported by appropriate legal authority for obtaining the Message Content;

(b) Authenticating that Recipient is an authorized Participant User within the Participant's System and that Recipient has represented that it has requested the Message Content for a Permitted Purpose in accordance with the Use Cases;

(c) Sending any assertions required by the Use Cases or HIN Operating Policies and Procedures with the Message; and

(d) Transmitting a copy of the Authorization, if such Authorization forms the sole legal basis for the Permitted Purpose. Nothing in this Section 6.1(d) shall be interpreted as requiring a Requesting Participant to obtain or transmit an Authorization for Message Content related to Treatment, Payment, or Health Care Operations, consistent with the Permitted Purposes, even if certain Responding Participants may otherwise require such Authorization.

**6.2 Specific Duties of a Responding Participant.** A Responding Participant shall be responsible for:

(a) Authenticating requests for Message Content, whereby the Responding Participant shall confirm and verify that the request was submitted by a Requesting Participant, in accordance with the Use Cases and HIN Operating Policies and Procedures;

(b) In accordance with Section 3 (System Access Policies), determining whether and how to respond to a Message based on the application of its Participant Access Policies to the information contained in the assertions that accompany a Message;

(c) Responding to all authenticated Messages that seek Message Content for Treatment, in accordance with this Agreement, the Use Cases, and the HIN Operating Policies and Procedures. The Participant may respond to Messages that seek Message Content for a Permitted Purpose other than Treatment, in accordance with this Agreement, the Use Cases, and the HIN Operating Policies and Procedures;

(d) Authenticating its response to a Message by confirming and verifying that it is transmitting the requested Message Content to the Requesting Participant, in accordance with Use Cases and the HIN Operating Policies and Procedures; and

(e) Ensuring that any requirements under the Responding Participant's Applicable Laws and Standards, the Use Cases, or the HIN Operating Policies and Procedures including, but not limited to, obtaining consent and Authorization, if required, have been met before making Message Content available for exchange through the HIE Platform.

**7. REPRESENTATIONS AND WARRANTIES.** Each Participant hereby represents and warrants the following:

**7.1 Accurate Information.** Except to the extent prohibited by Applicable Laws and Standards, each Participant has provided, and will continue to provide, the HIN Board with all information reasonably requested by the HIN Board and needed by the HIN Board to discharge its duties under this Agreement or Applicable Laws and Standards. Any information provided by a Participant to the HIN Board shall be responsive and accurate. Each Participant shall provide notice to the HIN Board if any information provided by the Participant to the HIN Board materially changes. Each Participant acknowledges that the HIN Board reserves the right to confirm or otherwise verify or check, in its sole discretion, the completeness and accuracy of any information provided by a Participant at any time and each Participant will reasonably cooperate with the HIN Board in such actions, given reasonable prior notice.

**7.2 Execution of this Agreement and Use Cases.** Prior to participating in the HIE Platform or a Use Case, each Participant shall have executed this Agreement and a Use Case and returned an executed copy of this Agreement and a Use Case to the HIN Board. By its execution, the Participant and its authorized representative affirms that it has full power and authority to enter into and perform its obligations under this Agreement or a Use Case and has obtained any and all required approvals or consents to execute this Agreement or a Use Case and perform hereunder or thereunder.

**7.3 Compliance with this Agreement.** Except to the extent prohibited by Applicable Laws and Standards, each Participant shall comply fully with all provisions of this Agreement. To the extent that a Participant delegates its duties under this Agreement to a third party (by contract or otherwise) and such third party will have access to Message Content, that delegation shall be in writing and require the third party to agree to the same restrictions and conditions that apply through this Agreement to such delegating Participant.

**7.4 Compliance with Use Cases.** Each Participant affirms that, to the extent it elects to adopt a Use Case, that it fully complies with such Use Case in accordance with Section 4.2 (General Compliance) of this Agreement.

**7.5 Accuracy of Message Content.** When acting as a Responding Participant, each Participant, except as provided in Section 5.6 (Inaccurate or Incomplete Message Content) of the Qualified Data Sharing Organization Agreement, hereby represents that at the time of transmission, the Message Content it transmits is (a) a faithful representation of the data contained in, or available through, its System, (b) sent from a System that employs security controls that meet industry standards so that the information and Message Content being transmitted are intended to be free from malicious software in accordance with Section 2.3 (Malicious Code) of the Qualified Data Sharing Organization Agreement, and (c) provided in a timely manner and in accordance with the Use Cases and HIN Operating Policies and Procedures. Other than those representations in this Section 7.5, Section 7.6 (Express Warranty of Authority to Transmit Message Content) and Section 7.7 (Express Warranty of Authority to Request Message Content), the Responding Participant makes no other representations, express or implied, about the Message Content.

**7.6 Express Warranty of Authority to Transmit Message Content.** To the extent each Participant is a Responding Participant and is providing Message Content to a Recipient, each Participant represents and warrants that at the time of disclosure it has sufficient authority to provide or make such Message Content available to Recipient.

**7.7 Express Warranty of Authority to Request Message Content.** To the extent each Participant is a Requesting Participant and is requesting Message Content from a Responding Participant, each Participant represents and warrants that at the time of disclosure it has sufficient authority to request such Message Content from Responding Participant.

**7.8 Use of Message Content.** Each Participant hereby represents and warrants that it shall use the Message Content only in accordance with the provisions of this Agreement, the Use Cases and the HIN Operating Policies and Procedures.

**7.9 Compliance with Laws.** Each Participant will, at all times while performing under this Agreement, fully comply with all Applicable Laws and Standards relating to this Agreement, the exchange of Message Content for Permitted Purposes and the use of Message Content.

**7.10 Agreements with Participant Users.** Each Participant has valid and enforceable agreements with each of its Participant Users that require the Participant User to, at a minimum: (i) comply with all Applicable Laws and Standards; (ii) comply with the terms of this Agreement

as applicable including but not limited to protecting the privacy and security of any Message Content to which it has access; and (iii) refrain from disclosing to any other person any passwords or other security measures issued to the Participant User by the Participant. Notwithstanding the foregoing, for Participant Users who are employed by a Participant or who have agreements with the Participant which became effective prior to the Effective Date, compliance with this Section 7.10 may be satisfied through written policies and procedures so long as the Participant can document that there is a written requirement that the Participant User must comply with the policies and procedures.

**7.11 Agreements with Technology Partners**. Each Participant has valid and enforceable agreements with each of its technology partners, including HSPs, that require the technology partner to, at a minimum: (i) comply with Applicable Laws and Standards and (ii) protect the privacy and security of any Message Content to which it has access. Participant shall direct its HSPs and other technology partners to reasonably cooperate with HIN and the other Participants to this Agreement on issues related to the HIE Platform, under the direction of the Participant.

## 8. DISCLAIMERS.

**8.1 Reliance on a System.** Each Participant acknowledges and agrees that: (i) the Message Content provided by, or through, its System is drawn from numerous sources, and (ii) it can only confirm that, at the time Message Content is transmitted by the Responding Participant, the information and Message Content transmitted are accurate representations of data contained in, or available through, its System. Nothing in this Agreement shall be deemed to impose responsibility or liability on a Participant related to the clinical accuracy, content or completeness of any Message Content provided pursuant to this Agreement. The Participants acknowledge that other Participants' Digital Credentials may be activated, suspended or revoked at any time or the Participant may suspend its participation; therefore, the Participant may not rely upon the availability of a particular Participant's Message Content.

**8.2 NO WARRANTIES.** IN ADDITION TO THE LIMITATIONS OF LIABILITY EXPRESSED IN SECTION 10 OF THE QUALIFIED DATA SHARING ORGANIZATION AGREEMENT, THE PARTIES HEREBY AGREE AND ACKNOWLEDGE THAT EXCEPT AS REPRESENTED IN SECTION 7.5 (ACCURACY OF MESSAGE CONTENT), THE MESSAGE CONTENTS OBTAINED BY A RECIPIENT ARE PROVIDED "AS IS" AND "AS AVAILABLE" WITHOUT ANY WARRANTY OF ANY KIND, EXPRESS OR IMPLIED.

**8.3 Performance of the HIE Platform.** Except as otherwise provided in the Qualified Data Sharing Organization Agreement, HIN makes no representation, express or implied, as to the performance of the HIE Platform. This disclaimer is not intended to diminish or limit in any way the other representations and warranties that HIN is making in this Agreement or in the Qualified Data Sharing Organization Agreement.

## 9. TERM AND TERMINATION.

**9.1 Term.** This Agreement shall be in effect with respect to each Participant so long as the Qualified Data Sharing Organization Agreement is in effect between HIN and such Participant.

**9.2 Disposition of Message Content Upon Termination.** At the time of termination, Recipient may, at its election, retain Message Content on Recipient's System in accordance with the Recipient's document and data retention policies and procedures, Applicable Laws and Standards, and the terms and conditions of this Agreement, including Section 2.2. (Permitted Future Uses).

## 10. MISCELLANEOUS PROVISIONS.

**10.1 Notices.** All notices to be made under this Agreement shall be in accordance with Section 12.6 (Notices) of the Qualified Data Sharing Organization Agreement.

**10.2 Effect of Agreement.** Except as provided in Section 8.2 (No Warranties), nothing in this Agreement shall be construed to restrict a Party's right to pursue all remedies available under law for damages or other relief arising from acts or omissions of the other Party to this Agreement, or to limit any rights, immunities or defenses to which a Party or its user may be entitled under Applicable Laws and Standards. No failure or delay by any Party in exercising its rights under this Agreement shall operate as a waiver of such rights, and no waiver of any right shall constitute a waiver of any prior, concurrent, or subsequent right.

**10.3 Assignment.** No party may assign or transfer any or all of its rights and/or obligations under this Agreement or any part of it, nor any benefit or interest in or under it, to any third party without the written consent of the other party which shall not be unreasonably withheld.

**10.4 Survival.** The provisions of Sections 2.2 (Permitted Future Uses), 2.3 (Management Uses), 7 (Representations and Warranties), 9.2 (Disposition of Message Content Upon Termination) and 10 (Miscellaneous Provisions) shall survive the termination of this Agreement for any reason.

**10.5 Entire Agreement.** This Agreement, together with the Qualified Data Sharing Organization Agreement, Use Cases, and HIN Operating Policies and Procedures, and each of their respective attachments and exhibits, set forth the complete understanding and agreement of the Parties regarding the subject matter thereof and supersedes all prior or contemporaneous agreements or understandings, oral or written, relating to such subject matter. Any waiver, modification or amendment of any provision of this Agreement will be effective only if in writing and signed by duly authorized representatives of each Party.

**10.6 Headings.** The headings throughout this Agreement are for reference purposes only, and the words contained therein may in no way be held to explain, modify, amplify, or aid in the interpretation or construction of meaning of the provisions of this Agreement. All references in this instrument to designated "Sections" and other subdivisions are to the designated Sections and other subdivisions of this Agreement unless otherwise noted. The words

"herein," "hereof," "hereunder," and other words of similar import refer to this Agreement as a whole and not to any particular Section or other subdivision.

**10.7 Relationship of the Participants.** The Participants are independent contracting entities. Nothing in this Agreement shall be construed to create a partnership, agency relationship, or joint venture among the Participants. Neither the HIN Board nor any Participant shall have any authority to bind or make commitments on behalf of another Participant for any purpose, nor shall any such Party hold itself out as having such authority. No Participant shall be held liable for the acts or omissions of another Participant.

IN WITNESS WHEREOF, the undersigned have caused this DATA SHARING AGREEMENT to be executed by their duly authorized representatives on the respective date(s) set forth below.

**MICHIGAN HEALTH INFORMATION NETWORK SHARED SERVICES**

By: _____

Name: _____

Title: _____

Date: _____

**PARTICIPATING ORGANIZATION**

_____

By: _____

Name: _____

Title: _____

Date: _____

## Attachment B

## Minimum System Requirements

Participating Organization shall ensure that all computers and electronic devices owned or leased by the Participating Organization or any Participant User to be used on connection with the HIE Platform are properly configured, including the base workstation operating system, web browser, and Internet connectivity and can securely support either a IPsec Virtual Private Network or Direct Secure Messaging using a Direct HISP that has been accredited by EHNAC-DTAAP ("DirectTrust"). Additional minimum system requirements, if any, shall be made available at: http://www.mihin.org by the Effective Date of this Agreement.

Attachment C

# HIPAA ADDENDUM

The parties to this HIPAA Addendum ("Addendum") are Michigan Health Information Network Shared Services ("HIN") and _____ ("Participant"). This Addendum supplements and is made a part of the HIN Qualified Data Sharing Organization Agreement between the Parties ("Agreement").

For purposes of this Addendum, Participant is considered a Covered Entity and HIN is considered a Business Associate of such Covered Entity.

RECITALS

A. Under the terms of the Agreement, Participant wishes to disclose certain information to HIN, some of which may constitute PHI. In consideration of the receipt of PHI, HIN agrees to protect the privacy and security of the information as set forth in this Addendum.

B. HIN and Participant intend to protect the privacy and provide for the security of PHI disclosed to HIN under the Agreement in compliance with HIPAA and the HITECH Act.

C. As part of HIPAA, the Privacy Rule and Security Standards (defined below) require Participant to enter into a contract containing specific requirements with HIN before the disclosure of PHI occurs.

In consideration for HIN's access to and/or use of PHI for those purposes allowed by HIPAA and consistent with the services that HIN performs for Participant, and in consideration for the mutual promises and covenants set forth below, the parties agree as follows:

1. **Definitions.** As used in this Addendum:

"***Breach Notification Standards***" means the HIPAA regulations governing notification in the case of breach of unsecured PHI as set forth at 45 CFR § Part 164, Subpart D, and all applicable stricter state and federal laws, as they exist now or as they may be amended.

"***Designated Record Set***" means a group of records maintained by or for Participant that is (i) the medical records and billing records about individuals maintained by or for Participant, (ii) the enrollment, payment, claims adjudication, and case or medical management record systems maintained by or for a health plan; or (iii) used, in whole or in part, by or for Participant to make decisions about individuals. As used herein, the term "Record" means any item, collection, or grouping of information that includes PHI and is maintained, collected, used, or disseminated by or for Participant.

"***HIPAA***" means the Health Insurance Portability and Accountability Act, Public Law 104-91, and any amendments thereto.

"***HIPAA Transaction***" means Transactions as defined in 45 CFR § 160.103 of the Transaction Standards.

"***HITECH Act***" means the Health Information Technology for Economic and Clinical Health Act, found in the American Recovery and Reinvestment Act of 2009 at Division A, title XIII and Division B, Title IV.

"***Individual***" shall have the same meaning as the term "individual" in 45 CFR § 160.103 and shall include a person who qualifies as a personal representative in accordance with 45 CFR § 164.502(g).

"***Minimum Necessary***" shall have the meaning set forth in the Health Information Technology for Economic and Clinical Health Act, § 13405(b).

"***Privacy Rule***" means the Standards for Privacy of Individually Identifiable Health Information at 45 CFR § Part 160 and Part 164, as they exist now or as they may be amended.

"***Protected Health Information***" or "***PHI***" shall have the meaning set forth at 45 CFR § 160.103 of HIPAA.

"***Required By Law***" shall have the same meaning as the term "required by law" in 45 CFR § 164.103.

"***Secretary***" means the Secretary of the Department of Health and Human Services or his designee.

"***Security Incident***" means the attempted or successful unauthorized access, use, disclosure, modification, or destruction of information or interference with system operations in an information system.

"***Security Standards***" means the Security Standards, 45 CFR § parts 160, 162 and 164, as they exist now or as they may be amended.

"***Transaction Standards***" means the Standards for Electronic Transactions, 45 CFR § part 160 and part 162, as they exist now or as they may be amended.

1.1. Terms used, but not otherwise defined, in this Addendum shall have the same meaning as those used in the Privacy Rule or the HITECH Act, and any amendments or implementing regulations.

2. **Obligations and Activities of HIN.**

2.1. HIN agrees that it shall not, and that its directors, officers, employees, contractors and agents shall not, use or further disclose PHI other than as permitted or required by this Addendum or as Required By Law.

2.2. HIN agrees to use appropriate safeguards in accordance with the Privacy Rule to prevent use or disclosure of the PHI other than as provided for by this Addendum.

2.3. HIN agrees to mitigate, to the extent required by law, any harmful effect that is known to HIN of a use or disclosure of PHI by HIN in violation of the requirements of this Addendum, including, but not limited to, compliance with any state law or contractual data breach requirements.

2.4. HIN agrees to report to Participant any use or disclosure of the PHI not provided for by this Addendum of which it becomes aware, or of any act or omission that violates the terms of this Addendum in accordance with Section 2.17, below.

2.5. HIN agrees to ensure that any agent, including a subcontractor, to whom it provides PHI received from, or created or received by HIN on behalf of Participant, agrees in writing to the same restrictions and conditions that apply through this Addendum to HIN with respect to such information. Further, HIN shall include in its contracts with agents or subcontractors the right to terminate the contract if the agent or subcontractor commits a material breach under the contract, and HIN shall exercise such termination rights in the event of a material breach. These obligations do not pertain to subcontractors that act as mere conduits for the transport of PHI but do not access the information other than on a random or infrequent basis.

2.6. HIN agrees to provide access, at the request of Participant, and in the time and manner designated by Participant, to PHI in a Designated Record Set, to Participant or, as directed by Participant, to an Individual in order to meet the requirements under 45 CFR § 164.524 and HITECH Act § 13405(e).

2.7. HIN agrees to make any amendment(s) to PHI in a Designated Record Set that Participant directs or agrees to pursuant to 45 CFR § 164.526 at the request of Participant or an Individual, and in the time and manner designated by Participant. If HIN provides Designated Record Sets to third parties, HIN shall ensure such records are also amended.

2.8. HIN agrees to make its internal practices, books, and records relating to the use and disclosure of PHI received from, or created or received by HIN on behalf of Participant, available to the Secretary, in a time and manner designated by Participant or the Secretary, for purposes of the Secretary determining Participant' compliance with the Privacy Rule.

2.9. HIN agrees to document disclosures of PHI, and information related to such disclosures, as would be required for Participant to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 CFR § 164.528 and any additional regulations promulgated by the Secretary pursuant to HITECH Act § 13405(c). HIN agrees to implement an appropriate record keeping process that will track, at a minimum, the following information: (i) the date of the disclosure; (ii) the name of the entity or person who received the PHI, and if known, the address of such entity or person; (iii) a brief description of the PHI disclosed; and (iv) a brief statement of the purpose of such disclosure which includes an explanation of the basis for such disclosure.

2.10. HIN agrees to provide to Participant or to an Individual, in the time and manner designated by Participant, information collected in accordance with Section 2.9 of this Addendum, to permit Participant to respond to a request by an Individual for an accounting of

disclosures of PHI during the six (6) years prior to the date on which the accounting was requested, in accordance with 45 CFR § 164.528.

2.11. In the event HIN receives a subpoena, court or administrative order or other discovery request or mandate for release of PHI, HIN will respond as permitted by 45 CFR § 164.512(e) and (f).

2.12. HIN will not make any communications to individuals in violation of the restrictions on marketing in HITECH Act § 13406(a) and without the prior consent of Participant.

2.13. If HIN will communicate with any individuals who are the subject of PHI originating from or prepared for Participant, HIN agrees to implement procedures to give timely effect to an individual's request to receive communications of PHI by alternative means or at alternative locations, pursuant to 45 CFR § 164.522(b), so as to ensure that PHI will only be communicated to those individuals designated in such a request as authorized to receive the PHI. If HIN provides records to agents, including subcontractors, who may also communicate with the individual, HIN shall ensure that the individual's request for communications by alternative means is provided to and given timely effect by such agents.

2.14. HIN shall not directly or indirectly receive or provide remuneration in exchange for any PHI in violation of any final regulations promulgated by the Secretary under HITECH Act § 13405(d) once such regulations become effective.

2.15. Electronic Transactions. HIN hereby agrees that, to the extent that it is electronically transmitting any of the HIPAA Transactions for Participant, the format and structure of such transmissions shall be in compliance with the Transaction Standards.

2.16. Electronic Data Security. To the extent that HIN creates, receives, maintains or transmits electronic PHI, HIN hereby agrees that it:

2.16.1. Has implemented and documented administrative, physical and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic PHI that HIN creates, receives, maintains or transmits on behalf of Participant consistent with the requirements at 45 CFR §§ 164.308, 164.310, 164.312 and 164.316;

2.16.2. Will ensure that any agent, including a subcontractor, to whom HIN provides electronic PHI agrees to implement reasonable and appropriate safeguards to protect the PHI; and

2.16.3. Will keep records of all Security Incidents involving PHI of which HIN becomes aware, and will report to Participant all significant Security Incidents of which HIN becomes aware.

2.17. Breach Notification. The parties have in place policies and procedures that are designed to detect inappropriate acquisition, access, use or disclosure of unsecured PHI, as that term is defined in HITECH, and each party trains its work force and agents on these procedures.

Each party agrees that it will notify the other party within ten (10) business days of discovering an inappropriate acquisition, access, use or disclosure of PHI transmitted by, to, through, or on behalf of the other party, and, as soon as reasonably practicable, but in no event later than thirty (30) calendar days of discovery will provide the other party with the identification of each individual whose PHI has been or is reasonably believed to have been breached during such incident, and any other information required pursuant to 45 C.F.R. §§ 164.400-414. Each party will assist the other party in assessing whether the Breach compromises the security or privacy of the PHI of the individuals whose information is involved. In the event that individuals whose data is affected by the impermissible acquisition, access, use or disclosure must be notified pursuant to the HIPAA Breach Notification Standards or other applicable law, the party responsible for the Breach will provide such notification at its own expense without unreasonable delay and in compliance with applicable law or reimburse the reasonable costs of the party that bears the responsibility to provide notification.

2.18. If Participant delegates the performance of a particular Privacy Rule obligation to HIN, HIN will comply with the requirements of the Privacy Rule that would apply to Participant in the performance of such obligation.

3. **Permitted Uses and Disclosures by HIN**

3.1. General Use. Except as otherwise limited in this Addendum, HIN may use or disclose PHI on behalf of or to provide services to Participant for the following purposes, if such use or disclosure of PHI would not violate the Privacy Rule if done by Participant or the minimum necessary policies and procedures of Participant: transmission of electronic health information and management of the HIE Platform.

3.2. Specific Use and Disclosure Provisions. Except as otherwise limited in this Addendum, HIN may disclose PHI to carry out the legal responsibilities of HIN and for its own proper management and administration, provided that disclosures are required by law, or HIN obtains reasonable assurances from the person to whom the information is disclosed that it will remain confidential and be used or further disclosed only as required by law or for the purpose for which it was disclosed to the person, and the person notifies HIN of any instances of which it is aware in which the confidentiality of the information has been breached. All other disclosures shall be subject to Participant' prior written permission.

4. **Obligations of Participant.**

4.1. Participant shall notify HIN of any limitation(s) in the notice of privacy practices of Participant in accordance with 45 CFR § 164.520, to the extent that such limitation may affect HIN's use or disclosure of PHI. HIN will give timely effect to such limitations.

4.2. Participant shall notify HIN of any changes in, or revocation of, permission by Individual to use or disclose PHI, to the extent that such changes may affect HIN's use or disclosure of PHI. HIN will give timely effect to such changes or revocations.

4.3. Participant shall notify HIN of any restriction to the use or disclosure of PHI that Participant has agreed to in accordance with 45 CFR § 164.522, to the extent that such restriction may affect HIN's use or disclosure of PHI. HIN will give timely effect to such restrictions.

4.4. Participant shall not request HIN to use or disclose PHI in any manner that would not be permissible under the Privacy Rule if done by Participant, except as specifically allowed by Section 3.2 of this Addendum.

5. **Term and Termination.**

5.1. Term. The Term of this Addendum shall be effective so long as the Agreement is in effect between the parties and shall terminate when all of the PHI in any form, recorded on any medium, or stored in any storage system provided by Participant to HIN, or created or received by HIN on behalf of Participant, is destroyed or returned to Participant, or, if it is infeasible to return or destroy PHI, protections are extended to such information, in accordance with the termination provisions in this Section. This provision shall apply to PHI that is in the possession of HIN or agents of HIN. HIN shall retain no copies of the PHI, except as provided in paragraph 5.5.2.

5.2. Termination for Breach by HIN. Upon Participant' knowledge of a material breach of the terms of this Addendum by HIN, Participant shall either:

5.2.1. Provide an opportunity for HIN to cure the breach or end the violation and terminate their relationship and the Agreement if HIN does not cure the breach or end the violation within the time specified by Participant;

5.2.2. Immediately terminate its relationship with HIN and the Agreement if HIN has breached a material term of this Addendum and cure is not possible; or

5.2.3. If neither termination nor cure are feasible, report the violation to the Secretary.

Participant' option to have cured a breach of this Addendum shall not be construed as a waiver of any other rights Participant has in the Agreement, this Addendum or by operation of law or in equity.

5.3. Termination for Breach by Participant. Upon HIN's knowledge of a material breach of the terms of this Addendum by Participant, HIN shall either:

5.3.1. Provide an opportunity for Participant to cure the breach or end the violation and terminate their relationship and the Agreement if Participant does not cure the breach or end the violation within the time specified by HIN;

5.3.2. Immediately terminate its relationship with Participant and the Agreement if Participant has breached a material term of this Addendum and cure is not possible; or

5.3.3. If neither termination nor cure are feasible, report the violation to the Secretary.

5.4. Other Conditions Allowing for Immediate Termination. Notwithstanding anything to the contrary in this Addendum or the Agreement, Participant may terminate its relationship with HIN and the Agreement immediately upon written notice to HIN, without any

notice period and/or judicial intervention being required, and without liability for such termination, in the event that:

5.4.1. HIN (i) receives a criminal conviction, (ii) is excluded, barred or otherwise ineligible to participate in any government health care program, including but not limited to Medicare, Medicaid, CHAMPUS or Tricare; (iii) is named as a defendant in a criminal proceeding for a violation of any information privacy and protection law; or (iv) is found to have or stipulates that it has violated any privacy, security or confidentiality protection requirements under any applicable information privacy and protection law in any administrative or civil proceeding in which HIN has been joined;

5.4.2. A trustee or receiver is appointed for any or all property of HIN;

5.4.3. HIN becomes insolvent or unable to pay debts as they mature, or ceases to so pay, or makes an assignment for benefit of creditors;

5.4.4. Bankruptcy or insolvency proceedings under bankruptcy or insolvency code or similar law, whether voluntary or involuntary, are properly commenced by or against HIN;

5.4.5. HIN is dissolved or liquidated.

5.5. Effect of Termination.

5.5.1. Except as provided in paragraph 5.5.2 of this Section, upon termination of the Agreement, for any reason, HIN shall return or, at Participant' direction, destroy all PHI received from Participant, or created or received by HIN on behalf of Participant in any form, recorded on any medium, or stored in any storage system. This provision shall apply to PHI that is in the possession of subcontractors or agents of HIN. HIN shall retain no copies of the PHI, except as provided in paragraph 5.5.2.

5.5.2. In the event that return or destruction of the PHI is infeasible, HIN shall extend the protections of this Addendum to such PHI and limit further uses and disclosures of such PHI to those purposes that make the return or destruction infeasible, for so long as HIN maintains such PHI.

6. **Indemnification and Insurance**.

6.1 Indemnification. Each party shall indemnify and hold harmless the other party and its officers, trustees, employees, and agents from any and all claims, penalties, fines, costs, liabilities or damages, including but not limited to reasonable attorney fees, incurred by the indemnified party arising from a violation by the indemnifying party of its obligations under this Addendum. To the extent that either party has limited its liability under the terms of the Agreement, whether with a maximum recovery for direct damages or a disclaimer against any consequential, indirect or punitive damages, or other such limitations, all limitations shall exclude any damages to the nonbreaching party arising from a party's breach of its obligations relating to the use and disclosure of PHI.

6.2 Defense. A party having a right to indemnification under this Addendum ("**Indemnified Party**") may, at its election, require the party having an obligation to indemnify under this Agreement ("**Indemnifying Party**"), defend any claim, suit or proceeding that is subject to indemnification under this Section 6, provided that the Indemnifying Party is notified promptly in writing of such claim and is given authority, information and assistance to handle such claim and to defend any suit or proceeding.

6.3 Insurance. Each party shall obtain and maintain insurance coverage with at least such limits as provided under Section 12.12 of the Agreement.

7. **Miscellaneous.**

7.1. Amendment. No provision of this Addendum may be modified except by a written document signed by a duly authorized representative of the parties. The parties agree to amend this Addendum, as appropriate, to conform with any new or revised legislation, rules and regulations to which Participant is subject now or in the future including, without limitation, the Privacy Rule, Security Standards or Transactions Standards (collectively "Laws"). If within ninety (90) days of either party first providing written notice to the other of the need to amend this Addendum to comply with Laws, the parties, acting in good faith, are i) unable to mutually agree upon and make amendments or alterations to this Addendum to meet the requirements in question, or ii) alternatively, the parties determine in good faith that amendments or alterations to the requirements are not feasible, then either party may terminate this Addendum upon thirty (30) days' written notice.

7.2. Assignment. No party may assign or transfer any or all of its rights and/or obligations under this Addendum or any part of it, nor any benefit or interest in or under it, to any third party without the prior written consent of the other party, which shall not be unreasonably withheld, provided however, that this provision shall not apply where the assignment or transfer is effected by the sale or transfer of assets or of a controlling ownership interest in HIN or Participating Organization.

7.3. Survival. The respective rights and obligations of HIN under Section 5.5 of this Addendum shall survive the termination of this Addendum.

7.4. Interpretation. Any ambiguity in this Addendum shall be resolved to permit Participant to comply with the Breach Notification Standards, Privacy Rule, Security Standards, and Transaction Standards. If there is any inconsistency between this Addendum and any other agreement between the parties, the language in this Addendum shall control.

7.5. Third Party Rights. The terms of this Addendum are not intended, nor should they be construed, to grant any rights to any parties.

7.6. Minimum Necessary. HIN agrees that, for all PHI that HIN accesses or requests from Participant for the purposes of providing services, it shall access or request, and Participant shall provide, only that amount of information that is minimally necessary to perform such services. In addition, for all uses and disclosures of PHI by HIN, HIN shall institute and implement policies and practices to limit such uses and disclosures to that which is minimally necessary to perform its services. HIN shall determine the amount minimally necessary

consistent with the requirements in the HITECH Act, § 13405(b), or as otherwise specified in regulations promulgated by the Secretary of the Department of Health and Human Services.

7.7. HITECH Act, § 13404. HIN may use and disclose PHI only if such use or disclosure, respectively, is in compliance with each applicable requirement of 45 CFR §164.504(e) and this Addendum.

7.8. Notice. All notices required under this Addendum shall be in writing and shall be deemed to have been given on the next day by fax or other electronic means or upon personal delivery, or in ten (10) days upon delivery in the mail, first class, with postage prepaid. Notices shall be sent to the addressees indicated below unless written notification of change of address shall have been given.

| If to Participant | If to HIN: |
|---|---|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| Tel: _____ | Tel: _____ |
| Fax:_____ | Fax: _____ |

7.9 Owner of PHI. Under no circumstances shall HIN be deemed in any respect to be the owner of any PHI used or disclosed by or to HIN by Participant.

**IN WITNESS WHEREOF**, the parties have executed this Addendum the dates indicated below.

| **MICHIGAN HEALTH INFORMATION NETWORK SHARED SERVICES** | **PARTICIPANT** |
|---|---|
| _____ | _____ |
| Signed | Signed |
| _____ | _____ |
| Printed | Printed |
| _____ | _____ |
| Date | Date |

# Attachment D

## Service Levels of HIE Platform

The HIE Platform will be available to Participating Organization 99.9% of each calendar month for the Permitted Purposes with the exception of (a) planned scheduled maintenance; (b) downtime due to misuse of the HIE Platform by Participating Organization or Participant Users; (c) downtime due to natural disasters, acts of God, accidents, acts of war, civil disturbance, malicious acts of third parties, or other conditions beyond the control of HIN; (d) downtime due to failure or malfunction of Participating Organization's hardware, software, failure to meet the Minimum System Requirements set forth in Attachment B or connectivity to the HIE Platform, including failure or malfunction of any Internet service provider on the path connecting Participating Organization to the HIE Platform.

# Use Case Summary

**NAME OF UC:**

**SUBMIT/RECEIVE STATEWIDE ADMISSION, DISCHARGE, TRANSFER (ADT) NOTIFICATIONS**

**Sponsor(s):** MiHIN / BCBSM

**Date:** 5/28/15

***The purpose of this Use Case Summary is to allow Sponsors, Participants, and other readers to understand the purpose of the Use Case (UC), the value proposition the UC represents, and what the Use Case does, requires, and how the UC operates at a high level. The summary is intended to assist the HIE and HIT Community understand where this UC fits within the overall roadmap for statewide sharing of health information.***

***This UC Summary has several sections allowing readers to understand the impact of this UC in the following areas: health outcomes, regulation, cost and revenue, implementation challenges, vendor community, and support.***

## Executive Summary

In this section provide a brief (3-5 sentence) summary of the UC's function and purpose. Also include a brief description of the importance and highlight the expected positive impact from implementation of this UC.

Admission, Discharge, Transfer (ADT) notification is widely regarded as a keystone to improving patient care coordination through health information exchange. ADT messages are sent when a patient is admitted to a hospital, transferred to another facility, or discharged from the hospital. Alerts are then sent to update physicians and care management teams on a patient's status, thus improving post-discharge transitions, prompting follow-up, improving communication among providers, and supporting patients with multiple or chronic conditions. ADT notifications also support the identification of patients who are frequent or high users of the health care system, which allows providers to steer these patients toward clinical and non-clinical interventions that may reduce unnecessary overutilization by preventing avoidable emergency department (ED) visits and hospital readmissions.

The Submit/Receive Statewide Admission, Discharge, Transfer (ADT) NotificationsUse Case supports a way to communicate the status of patients' care transitions with every care team member interested in that patient. When a patient is admitted to a hospital, transferred, or discharged, an ADT message is created by the hospital's Electronic Health Record (EHR) system. The hospital EHR system sends the ADT messages through a "Data Sharing Organization" (DSO) to the Michigan Health Information Network Shared Services (HIN) which operates the Statewide ADT Notification Service. The HIN then looks up the patient and the providers who are on that patient's care team using the Active Care Relationship Service (ACRS). ACRS contains information on which providers (e.g. attending, referring, consulting, admitting, primary care physician, etc.) are interested in that patient's health. The HIN also looks up the providers in the statewide Health Provider Directory (HPD) to obtain the delivery preference for each of those

providers and to determine the electronic endpoint and "transport" method by which the providers wish to receive ADT notifications (e.g. via Direct Secure Messaging, via HL7 over LLP, etc.) for their patients.

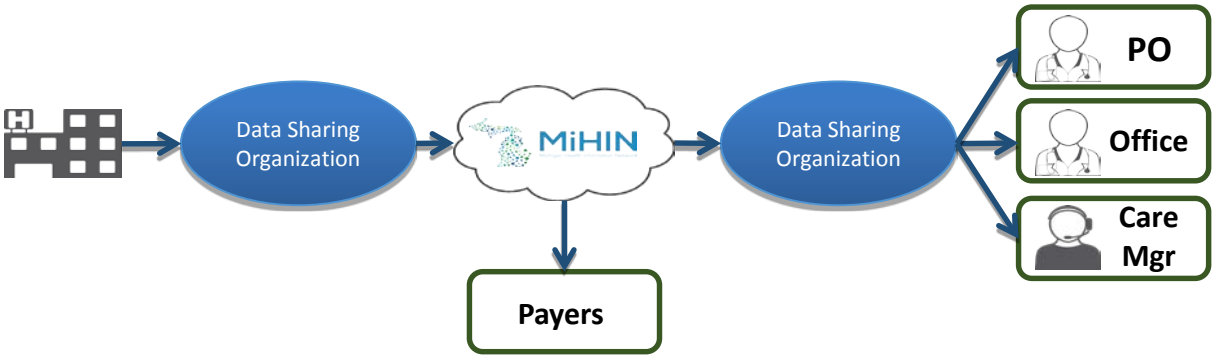
Based on the provider's delivery preferences, the HIN notifies each providers having an active care relationship with a patient upon the following ADT events:

- Patient is admitted to the hospital for inpatient or emergency treatment;
- Patient is discharged from the hospital;
- Patient is transferred from one care setting to another (e.g., to a different location (unit, bed) within the hospital or to another facility outside of the hospital); and/or
- Patient's demographic information is updated (e.g. name, insurance, next of kin, etc.) by a Participating Organization (PO).

**Note related Use Case requirements:** Organizations entering into the Submit/Receive Statewide ADT Notifications Use Case also in general should simultaneously enter into the Submit Active Care Relationships Use Case and the Submit Provider Information to Statewide Directory Use Case. These three Use Cases go together to support Statewide ADT Notifications.

## Diagram

In this section, provide a diagram of the information flow for this UC. The diagram should include the major senders and receivers involved and types of information being shared.




## Regulation

In this section, describe whether this UC is being developed in response to a federal regulation, state legislation or state level administrative rule or directive. Please reference the precise regulation, legislation, or administrative act such as Public Law 111-152 (Affordable Care Act),

Public Law 111-5; Section 4104 (Meaningful Use), 42 CFR 2 (substance information), MCL § 333.5431 (Newborn Screening), PA 129 (standard consent form), etc.

Additionally, provide information if this UC will allow Eligible Professionals/Providers (EP) or Eligible Hospitals (EH) to meet an attestation requirement for Meaningful Use.

**Legislation/Administrative Rule/Directive**

☒ Yes
☐ No
☐ Unknown

**[Name or number of legislation, rule, directive, or public act]**

Public Law 111-152 (Affordable Care Act)
Public Law 111-5; Section 4104 (Meaningful Use)

**Meaningful Use:**

☒ Yes
☐ No
☐ Unknown

The Statewide ADT Notification Service Use Case supports Meaningful Use Stage 2 Transitions of Care measures (12) for Eligible Professionals and Eligible Hospitals.

## Cost and Revenue

In this section provide an estimate of the investment of time and money needed or currently secured for this UC. Be sure to address items such as payer incentives, provide incentives, revenues generated (e.g. SSA transaction payments) or cost savings that could be realized (i.e. reduction of administrative burden).

As information is known or available, provide information on the resources and infrastructure needed to move this UC into production.

Patients whose providers receive ADT notifications are expected to receive more timely and coordinated care, resulting in better health outcomes, more timely treatment and management of health conditions that could otherwise result in a hospital readmission or emergency.

Additionally It is estimated that on average one avoidable hospital readmission saves payers approximately $15,000.

Payers subscribe to the Statewide ADT Notification Service based on a monthly rate are charged for each ADT source feed from which the payer receives notifications. One ADT source feed may include multiple hospitals.

The HIN reimburses Data Sharing Organizations for each ADT source that a subscribing payer uses.

Due to potential cost savings by improving care transitions and reducing avoidable hospital readmissions, both CMS and Blue Cross Blue Shield accept the following codes from Physician Organizations for reimbursement for follow up with patients of moderate or extreme complexity after discharge.

**99495-**

- Communication (direct contact, telephone, electronic) with the patient and/or caregiver within two (2) business days of discharge
- Medical decision making of at least moderate complexity during the service period
- Face-to-face visit, within 14 calendar days of discharge

**99496** -

- Communication (direct contact, telephone, electronic) with the patient and/or caregiver within two (2) business days of discharge
- Medical decision making of high complexity during the service period
- Face-to-face visit, within seven (7) calendar days of discharge

The potential cost savings are not limited to payers. Hospitals have an incentive to adopt ADT notification due to the fact that CMS will not reimburse hospitals for avoidable readmissions. ADT notifications enable providers and care managers to follow up with patients to improve the process of transitioning from in-patient to community-based care settings, thus reducing the likelihood of readmission.

## Implementation Challenges

In this section, as information is known or available, describe challenges that may be faced to implement this UC. Be sure to address whether the UC leverages existing infrastructure, policies and procedures, ease of technical implementation, or impacts current workflows (short term and long term).

One implementation challenges associated with the ADT Notification Service is conformance to standards and the consistency of data elements within the standard structure. There are often limits to the amount and consistency of patient data entered by the source system. Even if data fields are populated as required by the ADT Implementation Guide, and the source system (Data Sharing Organization) sends the correct event types, certain data elements may be omitted. For example, an insurance segment, if omitted, prevents HIN from routing the information to the correct Payer. Also, inconsistencies in hospital registration data entry (e.g. gender may be entered as M, F, U at one facility, and as 0, 1, 2 at another) must be addressed so they are interpreted consistently.

Another challenge is inconsistency in how clinical data is entered by the source system. While a formal diagnosis code is preferred, some facilities may include a chief complaint, entered by admission/registration staff who are not qualified to provide a clinical diagnosis. Chief complaint data is typically free field (i.e. patient is experiencing stomach pain). There are inconsistencies with whether or not this data field is included by the Data Sharing Organization, and what type of data is sent.

Patient matching also is an ongoing challenge. There is a lack of common patient identifiers as well as inconsistency with patient demographic information to match patients in a message with the providers that should receive an alert, which makes patient matching difficult in some cases. HIN has adopted a “no false positives rule” and would decline to send a message that is a close, but not exact, match rather than

to send the message in error. This challenge is being addressed through the robust patient matching established in the HIN Active Care Relationship Service (ACRS).

The ultimate goal of ADT Notification is to supply providers and care managers with information about patient transitions of care so that timely follow up can occur. Ensuring that clinicians receiving the ADT alerts are able to revise workflows to incorporate this new information is critical. To address this challenge, the HIN may consider providing users with training and workflow integration resources to maximize the benefits of the ADT Notification Service.

## Vendor Community Preparedness

In this section, address the vendor community preparedness to readily participate in the implementation of this UC. Speak to whether this UC will utilize current or future technical capabilities of the vendor products. If this UC requires new functionality at the vendor level provide information as known to the timeliness of when product updates may be available and any potential costs to the HIE community.

Implementation of this Use Case is already underway, and ADT messages are being exchanged. In order to participate, sending and receiving Data Sharing Organizations need to be able to process ADT HL7 messages. The HIN can process the messages and has built custom features to match patients (refer to the ACRS Use Case). The primary challenge among vendors is normalizing the data and integrating it into their customers' workflow.

## Support Information

In this section, provide known information on the support for this UC.

Support can come from multiple levels (Governor, Federal or State Legislative, MI HIT Commission, Michigan State Departments, CMS/ONC/CDC, MiHIN Board, Qualified Organizations, Payer Community, Interest Group [ex: MSMS, MHA], or Citizen support).

Please note any concerns or oppositions with the Use Case.

**Political Support:**

☐Governor
☐Michigan Legislature
☐HIT Commission
☒MDCH or other SOM Department
☐CMS/ONC
☐CDC
☒MiHIN Board
Other: Blue Cross Blue Shield of Michigan

**Concerns/Oppositions:** The Michigan Health and Hospital Association (MHA) and some hospitals initially expressed concerns about the security and privacy of the patient information with regard to how and where it would be shared. These concerns have been addressed. Confidence in the privacy and

security is supported by the HIN's Legal Chain of Trust with participating Data Sharing Organizations and their customers. The HIN's legal teams developed two opinion letters on this topic, which are available upon request.

## Sponsor(s) of Use Case

Who are the major sponsors of the use case?

MiHIN Shared Services
Blue Cross Blue Shield of Michigan
MDCH
Other large health plans

## Metrics of Use Case

In this section, define metrics for the Use Case to be successful.

The percent of hospital admissions sent and received through the ADT Notification Service is tracked as a metric to evaluate performance. The measures of success are defined by the following annual goals:

2014

- 80 percent of all hospital admissions in the state are being sent to HIN by the end of 2014; and
- 60 percent of Physician Organizations receiving ADT messages by the end of 2014.

2015

- 90 percent of all hospital admissions in the state are being sent to HIN by the end of 2015; and
- 70 percent of Physician Organizations receiving ADT messages by the end of 2015.

## Other Information

This section is to afford the sponsor(s) an opportunity to address any additional information with regard to this UC that may be pertinent to assessing its potential impact.

**MICHIGAN HEALTH INFORMATION NETWORK SHARED SERVICES**

**TRANSITIONS OF CARE – STATEWIDE ADT NOTIFICATION SERVICE**

Approved Date: 8/20/13 Effective Date:_____

**Use Case Category**: Transitions of Care **Optional**

**Use Cases**:

1. Active Care Relationship Service℠ (ACRS) Submit Data Use Case Agreement 2. Health Provider Directory (HPD) Submit Data Use Case Agreement

## Change Control

| Version Number | Revision Date | Author(s) | Section(s) | Summary | Approved Date | Effective Date |
|---|---|---|---|---|---|---|
| 1.0 | 5/13/13 | R. Wilkening | | Initial Draft | | |
| 2.0 | 6/10/13 | C. Gingrich | All | 2nd Draft | | |
| 3.0 | 6/10/13 | C. Gingrich | All | 3rd Draft | | |
| 4.0 | 6/11/13 | C. Gingrich | All | 4th Draft | | |
| 5.0 | 6/12/13 | C. Gingrich | | Incorporated technical notes from Rod Mach | | |
| 6.0 | 6/12/13 | B. Seggie | 8,10 | Operational updates | | |
| 7.0 | 6/13/13 | C. Gingrich | All | T. Pletcher, R. Wilkening, D. Weikart Review | | |
| 8.0 | 6/17/13 | C. Gingrich | 8,10 | R. Mach operational updates. | | |
| 9.0 | 6/20/13 | C. Gingrich | 8,10 | J. Livesay review | | |
| 10.0 | 7/10/13 | C. Gingrich | All | Active Care Relationship Service℠ service mark added | | |
| 11.0 | 7/17/13 | C. Gingrich | 9 | Updated responsibilities per MOAC UC WG and Onboarding meetings | | |
| 12.0 | 7/20/13 | C. Gingrich | 9 | | | |
| 13.0 | 7/31/13 | C. Gingrich | 4,9 | Definitions Message Content, ESI, Notice of unauthorized receipt | | |
| 14.0 | 8/15/13 | C. Gingrich | 4,9 | Definition updates, R. Wilkening Review | | |
| 15.0 | 9/4/13 | C. Gingrich | 9 | ADT Use Case Working Group feedback | | |
| 16.0 | 9/26/13 | R. Wilkening | Header,4,7, Signature | Format, ACRS & HPD references / language | | |

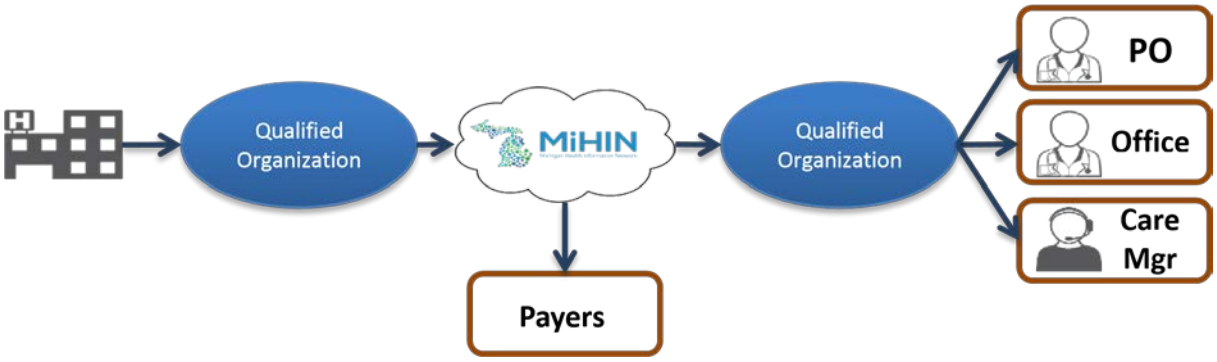
| | | | | | | |
|---|---|---|---|---|---|---|
| 17.0 | 12/09/13 | R. Wilkening | 4, 5, 9 | QO Feedback: Active Pt defn; 'Secondary' to 'Additional'; language | | |
| 18.0 | 12/31/13 | Zimbelman | 5.2 | Secondary Use to | 12/31/13 | 12/31/13 |
| | | | | additional permissible use | | |
| 19.0 | 05/15/14 | Fontaine | 8.4 | Updated | | |
| 20.0 | 05/29/14 | Fontaine | Intro, 8.4 footnote, 10.1.1 | Updated definition of participating organization, added HIPAA language, and HL7 specifications and implementation guide language | | |

This Use Case Agreement ("**Use Case**") is one of several Use Cases and is effective and binding upon the undersigned Participating Organization ("**Participating Organization**"), and subject to the Qualified Data Sharing Organization Agreement /Virtual Qualified Data Sharing Organization Agreement/Consumer Qualified Data Sharing Agreement/Sponsored Shared Organization Agreement/State Sponsored Sharing Organization Agreement/(the "**Agreement**") between the Participating Organization and the Michigan Health Information Network Shared Services ("**HIN**"), as of the last date in the signature block hereto. HIN and Participating Organization are referred to herein collectively as "**Parties**" and individually as a "**Party**."

1. **GOAL.** HIN seeks to assist Participating Organizations in leveraging existing or establishing new capabilities to share transitions of care information by sending and/or receiving Hospital Admission, Discharge and Transfer (ADT) events to those organizations that desire to be notified of such events.

2. **PURPOSE.** The purpose of this Use Case is to define Participating Organization and HIN roles and responsibilities for Participating Organization to leverage HIN routing of ADT messages.

3. **USE CASE DIAGRAM.**



Example: A patient is admitted to a hospital. The hospital sends an ADT 'Admit' message to HIN. HIN checks the Active Care Relationship Service[SM] (ACRS) which contains information on what providers are associated with this patient. HIN checks the Health Provider Directory (HPD) to obtain the delivery preference for each of those providers (i.e. a secure Direct email, an ADT message via HL7, etc). HIN notifies the providers, based on their delivery preferences, that the patient has been admitted to the hospital. Other scenario's include when a patient is discharged from the hospital or is transferred to a different location (unit, bed) within the hospital or to another facility outside of the hospital.

## 4. DEFINITIONS.

**4.1** **Active Care Relationship** means a) for providers, a patient who has been seen by a provider within the past 24 months, or is considered part of the Participating Organization's active patient population they are responsible for managing; b) for payers, an eligible member of a health insurance plan.

**4.2** **Active Care Relationship Service (ACRS)** means the HIN Service that contains information on those Participating Organizations and Health Professionals who have an Active Care Relationship with a patient.

**4.3** **Admit, Discharge and Transfer (ADT)** means a type of HL7 message generated by healthcare systems based upon event triggers; patient is admitted to, discharged from or transferred within or from the hospital to another care setting or to the patient's home. The HL7 ADT messages contain patient demographic, visit, insurance and diagnosis information.

**4.4** **ADT Message** means HL7 Admission, Discharge, and Transfer (ADT) message type used to transmit patient demographic and/or health care encounter information, generated from ADT Source information system(s).

**4.5** **ADT Source** means a health care organization generating the ADT Message and sending it or otherwise making it available to the Participating Organization and/or their participants.

**4.6** **ADT Recipient** means the organization that will receive an ADT Message for a specific purpose.

**4.7** **Care Relationship** means an active relationship between a patient and a healthcare Provider, Care Manager, Payer or other Organization for the purpose of treatment, payment or operations.

**4.8** **Conforming Message** means a message that is in a standard format per the associated ADT Notification Service Implementation Guide.

**4.9** **Digital Credentials** means a digital certificate, including Server Certificates, issued to Participating Organization by HIN, its designee or trusted anchor. The Digital

Credentials will be presented electronically by Participating Organization to prove identity and the right to access Message Content through the HIE Platform.

**4.10** **Electronic Address** means a string that identifies the transport protocol and end point address for communicating electronically with a recipient. A recipient may be a person, organization or other entity that has designated the electronic address as the point at which it will receive electronic messages. Examples of an electronic address

are an email address (Direct via SMTP) or URL (SOAP / XDR). Communication with an electronic address may require a digital certificate.

**4.11** **Electronic Service Information (ESI)** means all information reasonably necessary to define an electronic destination's ability to receive and consume a specific type of information (e.g. discharge summary, patient summary, laboratory report, query for patient/provider/healthcare data). The information should include the type of information (e.g. patient summary or query) the destination's Electronic Address (see definition above), the Messaging Framework supported (e.g. SMTP, HTTP/SOAP), Security information supported or required (e.g. digital certificate) and specific payload definitions (e.g. CCD C32 V2.5). In addition, this information may include labels that help identify the type of recipient (e.g. medical records department).

**4.12** **Health Information Network (HIN)** means Michigan Health Information Network (MiHIN) Shared Services.

**4.13** **Health Level 7 (HL7)** means an interface standard and specifications for clinical and administrative healthcare data developed by the American National Standards Institute (ANSI) organization. HL7 provides a method for disparate systems to communicate clinical and administrative information in a normalized format with acknowledgement of receipt.

**4.14** **Health Plan** means an individual or group plan that provides, or pays the cost of, medical care (as defined in section 2791(a)(2) of the Public Health Service Act, 42 U.S.C. 300gg-91(a)(2)).

**4.15** **Health Professional** means any person holding a clinical or non-clinical position within or associated with an organization that provides healthcare or healthcare related services. People who contribute to the gathering, recording, processing, analysis or communication of health information. Examples include but are not limited to Physicians, Physician Assistants, Nurse Practitioners, Nurses, Medical Assistants, Home Health Professionals, Administrative Assistants, Receptionists, Clerks, etc.

**4.16** **Health Provider Directory (HPD) ("the Directory")** means the statewide shared service established by HIN that contains contact information on Health Professionals, Healthcare Organizations, Electronic Addresses and Electronic Service Information, as a resource for authorized users to obtain efficient, accurate and reliable contact information and securely exchange health information.

**4.17** **Information Source** means any organization that provides information that is added to the Directory.

**4.18** **Message** means a mechanism for exchanging Message Content, as defined below, between Participants through HIN, including query, retrieve, and publish-subscribe.

**4.19** **Message Content** means information which is requested, received or sent by a Participant through HIN, including PHI, de-identified data, pseudonymized data, metadata, Digital Credentials and data schema. For this Use Case Agreement, the Message Content refers to the content of the HL7 ADT messages.

**4.20** **Network Downtime** means a Party is unable to transmit and receive data from the Internet for any reason, including but not limited to the failure of network equipment or software, scheduled or unscheduled maintenance, general Internet outages, and events of force majeure.

**4.21** **Participating Organization** means an organization that has entered into at least one of: (a) the Qualified Data Sharing Organization Agreement, or (b) the Virtual Qualified Data Sharing Organization Agreement, or (c) the Participant Agreement and which has also entered into this Use Case Agreement with HIN.

**4.22** **Person Record** means any record in the Directory that primarily relates to an individual person.

**4.23** **Qualified Data Sharing Organizations (QO)** as defined in the Qualified Data Sharing Organization Agreement.

**4.24** **Virtual Qualified Data Sharing Organization (VQO)** as defined Virtual Qualified Data Sharing Organization Agreement.

**4.25** **Notice** means a message transmission that is not Message Content and which may include but not be limited to an acknowledgement of receipt or error response.

**4.26** **Transactional Basis** means on a per transaction basis, the transmission of Message Content or a Notice within sixty (60) seconds of delivery or receipt of Message Content or Notice from a sending or receiving party.

## 5. MESSAGE CONTENT.

### 5.1 Primary Use.

5.1.1 HIN will provide a service to receive ADT messages from Participating Organization and/or their participants, determine care relationships based upon the Active Care Relationship Service[SM], and send the ADT messages to Participating Organizations and/or their participants based upon routing destination and delivery preferences. Types of healthcare organizations receiving

ADT messages may include but are not limited to physicians, care managers and payers.

5.1.2 The ADT message data shall be used for Treatment, Payment and Operations.

**5.2 Additional Permissible Use.**

5.2.1 The Parties may make additional use of the Message Content, provided that such additional use is consistent with Applicable Laws and Standards, as defined in Section 1.1 of the Data Sharing Agreement, including, without limitation, the Platform Requirements, to the extent such requirements are applicable to a Party.

5.2.2 This data may be used for Public Health Reporting.

5.2.3 This data may be used for resolution of patient matching in support of a statewide Master Person Identification service.

5.2.4 This data may be used to notify eligible patients or guardians that an admission, discharge or transfer has occurred.

**5.3 Additional Terms.**

5.3.1 The Participating Organization may contribute ADT information consistent with the terms herein and as otherwise permitted by the Agreement, *provided, however*, that in no case shall Participating Organization share data in a manner inconsistent with this Use Case, as applicable. To the extent there is an express conflict between the terms herein and the Agreement, the Agreement, as applicable, shall prevail.

**5.4 Limitations on use.** This data may not be used for competitive purposes.

**6. FEES.**

Fees related to this Use Case Agreement will be handled by mutual agreement between HIN and the Participating Organizations and shall not be transaction based.

**7. SERVICE LEVEL.** The Parties desire that the Message Content and Notice exchange between Participating Organization and/or their participants and HIN meet the service levels set forth below:

**7.1 Timeliness of Exchange.** The Parties desire that the Message Content and Notice exchange occur on a Transactional Basis.

**7.2** **Transmission Failure.** Notwithstanding Sections 4.26 (*Transactional Basis*) and 7.1 (*Timeliness of Exchange*), if the Parties experience a Network Downtime or System Outage the Message Content and Notices shall be queued to the extent possible during the Transmission Failure and retransmitted as soon as system operations have been restored. Retransmitted message rate shall not exceed 1500 messages per minute, and the sender shall wait 5 minutes inbetween retransmissions. Transactions that have not been successfully retransmitted within 12 hours of the time of the event shall be recorded as a transmission error, but should still be transmitted as soon as possible.

## 8. AUDITING.

**8.1** **Abilities to Audit.** The Parties shall monitor and audit all access to and use of its system related to this Use Case, for system administration, security, and other legitimate purposes consistent with each Party's standard operating procedures.

**8.2** **Audit Logs.**

8.2.1 **Participating Organization**. Participating Organization shall, at a minimum, log the following information: **(i)** date and time Message Content was accessed and identity (*e.g.*, unique identifier) of individual or system, as applicable, accessing the Message Content; **(ii)** date and time Message Content was transmitted through the HIE Platform and identity of individual or system, as applicable, transmitting the Message Content; **(iii)** date and time a Notice was sent or received from or to HIN; **(iv)** the unique message identifier for the Message Content accessed, sent, or received; **(v)** the HL7 segment accessed; and **(vi)** any Notices, failures, or network events.

8.2.2 **HIN**. With respect to its obligations as a business associate, if applicable, HIN shall, at a minimum, log the following information: **(i)** name of Participating Organization and/or participant accessing the HIN; **(ii)** identity (*e.g.*, unique identifier) of individual or system, if applicable, accessing the Message Content; **(iii)** the date and time the access occurred; **(iv)** the HL7 segments accessed **(v)** the source IP address of the Message Content request; **(vi)** the destination IP address of the Message Content request; and **(vii)** any Notices, failures, or network events. Except as provided in the foregoing, HIN shall not be obligated to maintain and shall not be responsible for, either maintaining records of the content of any Message exchange between the Parties or inspecting the content of such Messages.

**8.3** **Production of Audit Logs.** Upon a good faith written request by a Party, the nonrequesting Party shall produce the requested audit logs within five (5) days from the date of the request to the requesting Party or a detailed written explanation of why the requested logs cannot be produced.

**8.4** **Retention of Audit Logs.** The Parties shall retain audit logs in accordance with any and all requirements set forth in Applicable Laws and Standards[1], including but not limited to the requirements under the Health Insurance Portability and Accountability Act of 1996, Public Law 104-191, and regulations at 45 CFR Part 160, Part 162, and Part 164, the Michigan Public Health Code, MCL 333.1101 *et seq*., the Data Sharing Agreement, and as otherwise necessary to comply with this Use Case.

## 9. RESPONSIBILITIES OF THE PARTIES.

### 9.1 Participating Organization's Responsibilities as ADT Senders.

9.1.1 Participating Organization shall transmit to HIN the Message Content and Notices on a Transactional Basis.

9.1.2 Participating Organization shall, on a Transactional Basis, transmit any Notices received from HIN to the Participating Organization participant that submitted the Message Content, as necessary (*e.g.*, transmitting an acknowledgment of submission received from HIN).

9.1.3 Participating Organization's shall transmit the data using HIN approved format, content and secure transport methods.

9.1.4 If the ADT transactions from the Participating Organization to HIN fail to transfer successfully in full, the Participating Organization shall retransmit, or make provisions to have the files retransmitted.

9.1.5 Participating Organization's shall transmit data to HIN only from organizations that have agreed to participate in this Use Case Agreement.

9.1.6 Participating Organizations agree that providers and payers who have an Active Care Relationship with this patient may receive the ADT messages. However, Participating Organizations shall have the ability to opt-out of sending ADT Notifications to specific ADT Recipient organizations.

9.1.7 Notice of unauthorized receipt. In the event Participating Organization sends or receives Message Content for which Participating Organization is not authorized to send or receive, Participating Organization will immediately inform HIN, delete such Message Content, and require its Participant Users to do so.

9.1.8 Participating Organizations shall work with HIN to schedule and

[1] "Applicable Laws and Standards" is a defined term in the QDSOA, VQDSOA, CQDSOA, SSOA and SSSOA.

coordinate any changes to the production systems or networks involved in ADT Message sending, filtering, translating, or forwarding activities so as to ensure the reliability and availability of the production environments.

### 9.2 Participating Organization's Responsibilities as ADT Receivers.

9.2.1 Participating Organization shall receive the Message Content and Notices from HIN on a Transactional Basis.

9.2.2 Participating Organization shall submit to HIN, on a Transactional Basis, any Notices received from Participating Organization participant that received the message content, as necessary (*e.g.*, transmitting an acknowledgment of submission received from Participating Organization).

9.2.3 Participating Organization's shall receive the data using one of the HIN approved secure transport methods, format and content.

9.2.4 Participating Organization's shall transmit data only to other participating organizations that have agreed to participate in this Use Case Agreement and the prerequisite Use Case Agreements, as appropriate.

9.2.5 Participating Organizations and their participants shall work with HIN to update and maintain the associated Directories per the Active Care Relationship Service[SM] Submit Data Use Case Agreement and the Health Provider Directory Submit Data Use Case Agreement.

9.2.6 Participating Organizations and their participants shall provide and maintain correct Electronic Addresses and Electronic Service Information (ESI) within HIN Directories and/or Services.

9.2.7 If the Health Provider Directory and Active Care Relationship Service[SM] file transfers from the Participating Organization to HIN fail to transfer successfully in full, the Participating Organization shall retransmit or make provisions to have the files retransmitted.

9.2.8 Notice of unauthorized receipt. In the event Participating Organization sends or receives Message Content for which Participating Organization is not authorized to send or receive, Participating Organization will immediately inform HIN, delete such Message Content, and require its Participant Users to do so.

9.2.9 Participating Organizations shall work with HIN to schedule and coordinate any changes to the production systems or networks involved in ADT Message forwarding or receiving activities so as to ensure the reliability and availability of the production environments.

**9.3 HIN's Responsibilities.**

9.3.1 HIN shall transmit all Message Content and Notices on a Transactional Basis.

9.3.2 HIN shall transmit the ADT Messages it receives to those Participating Organizations as defined in the Active Care Relationship Service℠ (ACRS), which is populated by ADT Receiving Organizations.

9.3.3 HIN may send ADT Message Content containing a Health Plan designation within the ADT Message Content to a Health Plan Participating Organization.

9.3.4 HIN shall discard all Message Content that does not have attribution defined within the Active Care Relationship Service℠ (as described in 9.3.2) or is not a match based on other message content (as described in 9.3.3).

9.3.5 HIN shall not transmit Message Content to any Health Plan(s) if the Message Content indicates "SELF-PAY" as defined in the ADT Implementation Guide (accessible from the HIN website).

9.3.6 HIN shall be responsible for protecting ADT Message Content.

9.3.7 HIN shall work with Participating Organizations to schedule and coordinate any changes to the production systems or networks involved in ADT Message sending, filtering, translating, forwarding or receiving activities so as to ensure the reliability and availability of the production environments.

9.3.8 HIN shall work with Participating Organizations and/or their participants who are ADT Receivers to receive and process updates to the associated Directories per the Active Care Relationship Service℠ Submit Data Use Case Agreement and the Health Provider Directory Submit Data Use Case Agreement.

## 10. OTHER TERMS.

**10.1 Data Format, Validation and Transmission Specifications.**

10.1.1 The Message Content submitted into the HIE Platform must meet the HL7 2.5.1 Specifications for the Statewide ADT Notification Service implementation guide (the

"**Conforming Message**") set forth for this Use Case on the HIN web site and all Message Content submitted to HIN shall meet these specifications.

10.1.2 ADT Message Content submitted to the HIE Platform that does not meet the Specifications identified in 10.1.1 will be responded to with an HL7 NAK (Not Acknowledged) message.

10.1.3 HIN shall validate all Conforming Messages.

10.1.4 **Disclaimers**.

(a) Prior to transmitting Conforming Messages to HIN, Participating Organization shall ensure that each Conforming Message is from a participant that has entered into the appropriate Business, Data Sharing and Use Case Agreements.

(b) Participating Organization shall bear sole responsibility for ensuring that the Confirming Message meets the data integrity, format, security, and timeliness standards as identified in the Agreements.

[*Signature Page Follows*]

IN WITNESS WHEREOF, the undersigned have caused this Use Case Agreement to be accepted by their duly authorized representatives effective on the date written below, whichever is later.

| **MICHIGAN HEALTH INFORMATION NETWORK SHARED SERVICES** | **PARTICIPATING ORGANIZATION** |
|---|---|
| | _____<br>**Organization Name**<br>☐ ADT Sender<br>☐ ADT Recipient |
| By: _____ | By: _____ |
| Name: _____ | Name: _____ |
| Title: _____ | Title: _____ |
| Date: _____ | Date: _____ |

MiHIN Shared Services

# Michigan Health Information Network

## Implementation Guide for HL7 ADT Messages

Version 2.0

25 June 2014

## Document History

| Date | Description |
|---|---|
| 06/25/14 | Added Use Case Reminder |
| 06/17/14 | Changed IN1 RE to R |
| 06/12/14 | Changed DOC and SS# descriptions |
| 04/10/14 | Version 2.0 |
| 02/18/14 | Version 1.0 |
| 10/16/13 | Draft Version 0.6 |
| 10/05/13 | Draft Version 0.5 |
| 09/13/13 | Draft Version 0.4 |
| 07/29/13 | Draft Version 0.3 |
| 07/12/13 | Draft Version 0.2 |
| 07/05/13 | Draft Version 0.1 |

# Executive Summary

This document contains specifications for electronic data interchange between qualified data sharing organizations (referred to in this document as QOs) and Michigan Health Information Network (MiHIN) Shared Services. The purpose of this interchange is twofold. Data sharing between relevant organizations will support transitions of care initiatives across the state of Michigan. The data exchanged can also be used to support public health reporting requirements.

Information exchange specifications in this document use the Health Level Seven (HL7) data interchange standard. The current specification is intended to accommodate qualified organizations' existing base of HL7 transmitting applications, from Version 2.1 forward. Future revisions of this document, however, may include data elements from Version 2.5 of the HL7 Standard that were not defined in earlier HL7 versions.

This document represents an implementable conformance profile as defined in Chapter 2B of the Health Level Seven Standard, Version 2.5. As such, its requirements are fully amenable to quantitative testing. Senders using this document are encouraged to adopt automated validation mechanisms for outgoing messages to maximize data quality and minimize the risk of data acceptance issues at MiHIN Shared Services or destination QOs.

Comments and suggestions on this document may be sent via email to help@mihin.org.

# Table of Contents



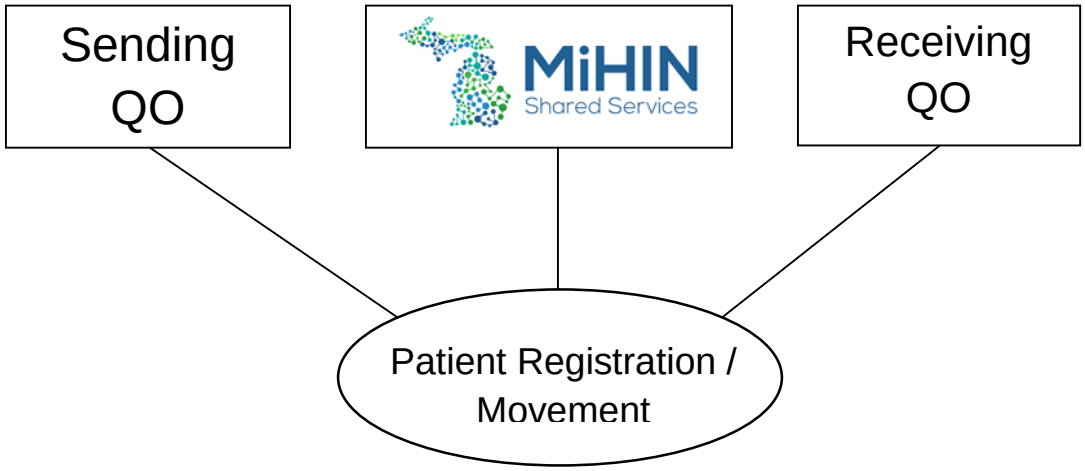
 

# 1 Use Case

## 1.1 Scope

Electronic data interchange messages in Health Level Seven (HL7) format that communicate patient registrations and movements (referred to here as ***HL7 ADT messages***) are sent via secure TCP/IP connection to MiHIN Shared Services by qualified data sharing organizations (referred to here as ***Sending QOs***) and distributed via secure TCP/IP connection to other qualified data sharing organizations (referred to here as ***Receiving QOs***) for the primary purpose of supporting transitions of care initiatives across the State of Michigan and other secondary uses such as public health reporting.

Patient registration and movement transactions convey demographic, visit, provider, procedure, diagnosis, observation and insurance information current as of the time of the transaction. These transactions are used both for inpatients (*i.e.*, those who are assigned a bed at the facility) and outpatients (*i.e.*, those who are not assigned a bed at the facility).




## 1.2 Actors and Roles

**Actor**: Sending QO

**Role**: Collects patient registration information and information about patient movements within healthcare institutions. Forwards this information to MiHIN Shared Services.

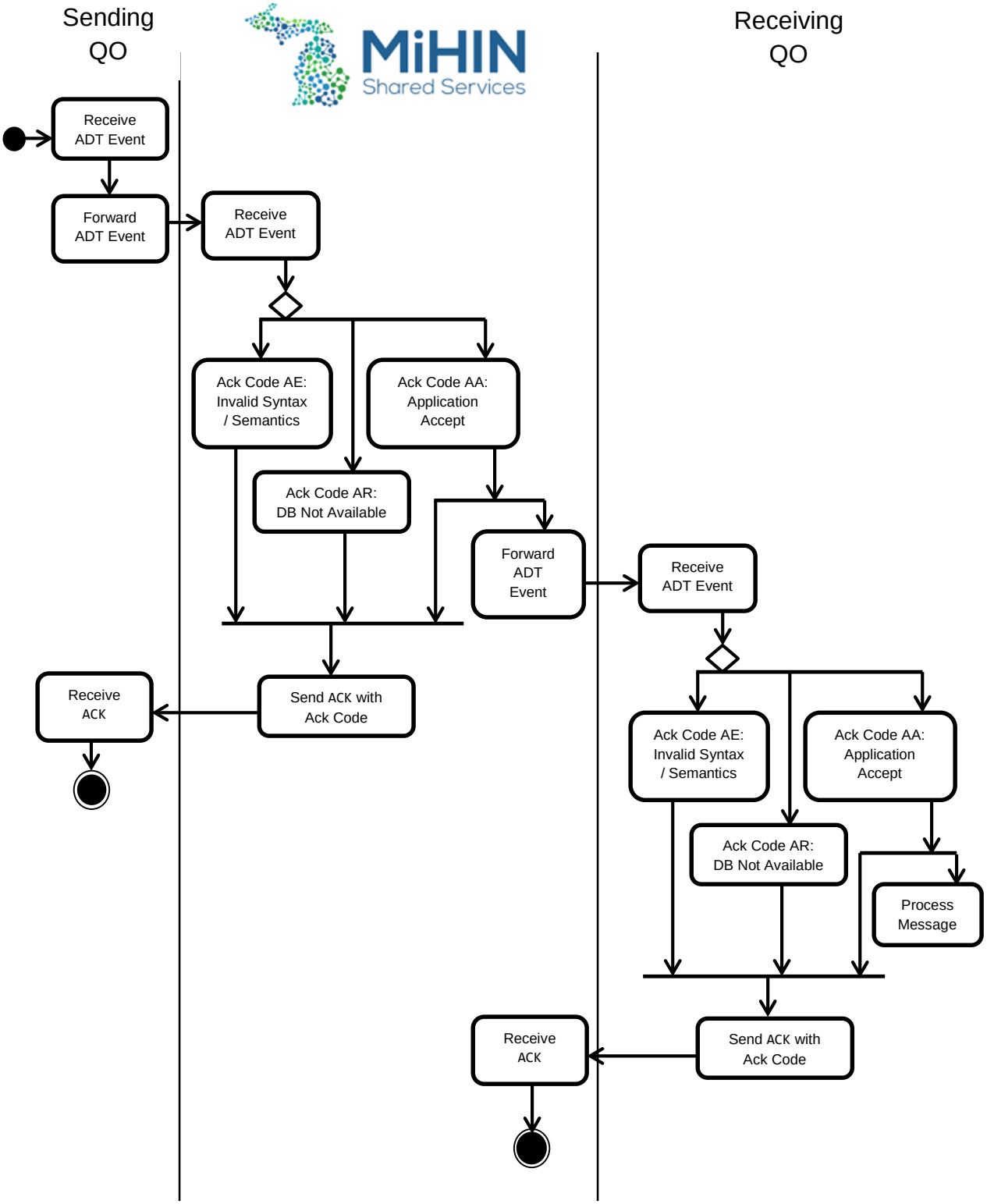
**Actor**: MiHIN Shared Services

**Role**: Receives patient registration and movement information from Sending QOs. Forwards this information to Receiving QOs.

**Actor:** Receiving QOs

**Role**: Receives patient registration and movement information forwarded by MiHIN Shared Services from Sending QOs. Uses this information for treatment, payment and operations.

# 2 Interactions



# 3. Use Case - Reminder

This reminder applies to all Use Cases covering the exchange of electronic health information:

The Data Sharing Agreement ("DSA") establishes the legal framework under which Participating Organizations can exchange messages through the HIN Platform, and sets forth the following approved reasons for which messages may be exchanged:

(a) By health care providers for Treatment, Payment and/or Health Care Operations consistent with the requirements set forth in HIPAA;

(b) Public health activities and reporting as permitted by HIPAA and other Applicable Laws and Standards;

(c) To facilitate the implementation of "meaningful use" criteria as specified in the American Recovery and Reinvestment Act of 2009 and as permitted by HIPAA;

(d) Uses and disclosures pursuant to an Authorization provided by the individual who is the subject of the Message or such individual's personal representative in accordance with HIPAA;

(e) By Data Sharing Organizations for any and all purposes, including but not limited to pilot programs and testing, provided that such purposes are consistent with Applicable Laws and Standards; and

(f) **For any additional purposes as specified in any Use Case, provided that such purposes are consistent with Applicable Laws and Standards**.

Under the DSA, "***Applicable Laws and Standards***" means all applicable federal, state, and local laws, statutes, acts, ordinances, rules, codes, standards, regulations and judicial or administrative decisions promulgated by any governmental or self-regulatory agency, including the State of Michigan, the Michigan Health Information Technology Commission, or the Michigan Health and Hospital Association, as any of the foregoing may be amended, modified, codified, reenacted, promulgated or published, in whole or in part, and in effect from time to time. "Applicable Laws and Standards" includes but is not limited to HIPAA; the federal Confidentiality of Alcohol and Drug Abuse Patient Records statute, section 543 of the Public Health Service Act, 42 U.S.C. 290dd-2, and its implementing regulation, 42 CFR Part 2; the Michigan Mental Health Code, at MCLA §§ 333.1748 and 333.1748a; and the Michigan Public Health Code, at MCL § 333.5131, 5114a.

**It is each QO's obligation and responsibility to ensure that it is aware of Applicable Laws and Standards as they pertain to the content of each message sent, and that its delivery of each message complies with the Applicable Laws and Standards. This means, for example, that if a Use Case is directed to the exchange of physical health information that may be exchanged without patient authorization under HIPAA, the QO must not deliver any message containing health information for which an express patient authorization or consent is required (e.g., mental or behavioral health information).**

# 4 Dynamic Definition

The following guidelines describe the way in which segment and field requirements apply to conformant messages.

## 4.1 *Sending QO Requirements*

MiHIN's role in the context of this Implementation Guide requires that, at a minimum, facility identifying information (MSH-3) and patient identifying information (PID-5, PID-7, and PID-8, plus one or more of PID-2, PID-3, and PID-4) be present and populated according to the requirements of this document. Messages not containing this minimum information will cause the return of an error acknowledgment message with acknowledgment code AE. Other messages will be passed through to receivers even if nonconformant.

### *4.1.1 Segment Requirements for Sending QO*

Each HL7 message sent to MiHIN Shared Services shall conform to the static definition given in the subsection of Section 4, "Static Definition – Message Level," corresponding to the trigger event of the message.

### *4.1.2 Segment Usage Requirements for Sending QO*

Conformant sending QOs shall adhere to the following usage requirements for message segments.

- Segments with usage code R shall always be sent.
- Segments with usage code C shall be sent conditionally, based upon fulfillment of the condition contained in the "Comments" column.
- Segments with usage code RE shall be sent if information corresponding to the segment definition exists on the sending system.
- Segments with usage code CE shall be sent conditionally, based upon fulfillment of the condition contained in the "Comments" column, if information corresponding to the segment definition exists on the sending system.
- Segments with usage code X, or whose segment ID does not appear in the static definition corresponding to the trigger event of the message, will be ignored.

## 4.2 Segment Cardinality Requirements for Sending QO

Conformant sending QDSOs shall adhere to the following cardinality requirements for message segments.

- No fewer occurrences of each segment shall be sent than the number indicated by the minimum cardinality of the segment in the message-level static definition corresponding to the trigger event of the message.
- Occurrences of each segment exceeding the number indicated by the maximum cardinality of the segment in the message-level static definition corresponding to the trigger event of the message will be ignored.

### 4.2.2 Field and Subfield Requirements for Sending QO

Each segment of each HL7 message sent to MiHIN Shared Services shall conform to the static definition given in the subsection of Section 5, "Static Definition – Segment Level," corresponding to the trigger event of the message.

#### 4.2.3.1 Field and Subfield Usage Requirements for Sending QO

Conformant sending QOs shall adhere to the following usage requirements for message fields, components, and subcomponents.

- Fields and subfields with usage code R shall always be sent.
- Fields and subfields with usage code C shall be sent conditionally, based upon fulfillment of the condition contained in the "Comments" column.
- Fields and subfields with usage code RE shall be sent if information corresponding to the field or subfield definition exists on the sending system.
- Fields and subfields with usage code CE shall be sent conditionally, based upon fulfillment of the condition contained in the "Comments" column, if information corresponding to the field or subfield definition exists on the sending system.
- Fields and subfields with usage code X, or whose field or subfield sequence number does not appear in the static definition of the field or subfield, will be ignored.

#### 4.2.3.2 Field and Subfield Cardinality Requirements for Sending QO

Conformant sending QOs shall adhere to the following cardinality requirements for message fields, components, and subcomponents.

- No fewer occurrences of each field or subfield shall be sent than the number indicated by the minimum cardinality of the field in the static definition of the segment in which the field or subfield occurs.
- Occurrences of each field or subfield above the number indicated by the maximum cardinality of the field or subfield in the static definition of the segment in which the field or subfield occurs will be ignored.

## 4.3 Receiving QO Requirements

### 4.3.1 Segment Requirements for Receiving QO

Each HL7 message sent by MiHIN Shared Services will conform to the static definition given in the subsection of Section 4, "Static Definition – Message Level," corresponding to the trigger event of the message.

#### 4.3.1.1 Segment Usage Requirements for Receiving QO

Conformant receiving QOs shall adhere to the following usage requirements for message segments.

- Segments with usage code R or C shall always be accepted and stored.

- Segments with usage code RE or CE shall always be accepted and stored if received. Failure to receive a segment with usage code RE or CE shall not be treated as an error by the receiving system.
- Segments with usage code X, or whose segment ID does not appear in the static definition corresponding to the trigger event of the message, may be ignored if received.

#### *4.3.1.2 Segment Cardinality Requirements for Receiving QO*

Conformant receiving QOs shall adhere to the following cardinality requirements for message segments.

- No fewer occurrences of each segment should be expected than the number indicated by the minimum cardinality of the segment in the message-level static definition corresponding to the trigger event of the message.
- No more occurrences of each segment should be expected than the number indicated by the maximum cardinality of the segment in the message-level static definition corresponding to the trigger event of the message. Occurrences in excess of the maximum may be ignored if received.

### *4.3.2 Field and Subfield Requirements for Receiving QO*

Each segment of each HL7 message sent by MiHIN Shared Services will conform to the static definition given in the subsection of Section 5, "Static Definition – Segment Level," corresponding to the trigger event of the message.

#### *4.3.2.1 Field and Subfield Usage Requirements for Receiving QO*

Conformant receiving QOs shall adhere to the following usage requirements for message fields and subfields.

- Fields and subfields with usage code R and C shall always be accepted and stored.
- Fields and subfields with usage code RE and CE shall always be accepted and stored if received. Failure to receive a field or subfield with usage code RE shall not be treated as an error by the receiving system.
- Fields and subfields with usage code X, or whose field or subfield sequence number does not appear in the static definition of the field or subfield, may be ignored if received.

#### *4.3.2.2 Field Cardinality Requirements for Sending QO*

Conformant receiving QOs shall adhere to the following cardinality requirements for message fields. (Cardinality requirements for subfields – components and subcomponents – are covered by the field usage requirements in the previous section; by the HL7 Version 2 encoding rules, subfields may not have cardinality greater than 1.)

- No fewer occurrences of each field should be expected than the number indicated by the minimum cardinality of the field in the static definition of the segment in which the field occurs.

- No more occurrences of each field will be sent than the number indicated by the maximum cardinality of the field in the static definition of the segment in which the field occurs. Occurrences in excess of the maximum may be ignored if received.

### *4.3.3 Acknowledgment Message Requirements for Receiving QO*

For each message received, a receiving QO shall return an HL7 acknowledgment message formatted according to the requirements in Sections 4, 5, and 6 below. An ERR segment shall be returned for each usage and cardinality error recorded as a result of applying the rules in Section 3.2, "Receiving QO Requirements."

# 5 Static Definition – Message Level

Each HL7 message sent to MiHIN shall conform to the static definition given in the subsection below corresponding to the trigger event of the message. Specific requirements for conformant messages from sending and receiving systems are listed in Section 3, "Dynamic Definition."

## 5.1 ADT (Patient Administration) Message – Trigger Events A01, A04, A05, A08, A13, A14, A28, A31

The definitions in the table below shall be conformed to by all HL7 source messages communicating the following ADT trigger events:

- A01 (admit/visit notification)
- A04 (register a patient)
- A05 (pre-admit a patient)
- A08 (update patient information)
- A13 (cancel discharge / end visit)
- A14 (pending admit)
- A28 (add person information)
- A31 (update person information)

| Segment | Description | Usage | Cardinality | HL7 Chapter | Comments |
|---|---|---|---|---|---|
| MSH | Message header | R | 1..1 | 2 | |
| [ { SFT } ] | Software segment | RE | 0..99 | 2 | Implemented beginning in HL7 V2.5 |
| EVN | Event type | R | 1..1 | 3 | |
| PID | Patient identification | R | 1..1 | 3 | |
| [ PD1 ] | Additional demographics | RE | 0..1 | 3 | |
| [ { NK1 } ] | Next of kin / associated parties | X | 0..0 | 3 | |
| PV1 | Patient visit | R | 1..1 | 3 | |
| [ PV2 ] | Patient visit - additional info. | X | 0..0 | 3 | |
| [ { DB1 } ] | Disability information | X | 0..0 | 3 | |
| [ { OBX } ] | Observation / result | RE | 0..2 | 7 | Patient height and weight |
| [ { AL1 } ] | Allergy information | X | 0..0 | 3 | |
| [ { DG1 } ] | Diagnosis information | RE | 0..99 | 6 | |

| Segment | Description | Usage | Cardinality | HL7 Chapter | Comments |
|---|---|---|---|---|---|
| [ DRG ] | Diagnosis related group | X | 0..0 | 6 | |
| [ { PR1 | Procedures | RE | 0..99 | 6 | |
| [ { ROL } ] | Role | X | 0..0 | 12 | |
| } ] | | | | | |
| [ { GT1 } ] | Guarantor | X | 0..0 | 6 | |
| [ | | | | | |
| { IN1 | Insurance | R | 0..99 | 6 | |
| [ IN2 ] | Insurance additional info. | X | 0..0 | 6 | |
| [ { IN3 } ] | Insurance add'l info - cert. | X | 0..0 | 6 | |
| } | | | | | |
| ] | | | | | |
| [ ACC ] | Accident information | X | 0..0 | 6 | |
| [ UB1 ] | Universal bill information | X | 0..0 | 6 | |
| [ UB2 ] | Universal bill 92 information | X | 0..0 | 6 | |

## 5.2 ADT (Patient Administration) Message – Trigger Events A02,A21, A22, A23, A25, A26, A27, A29, A32, A33

The definitions in the table below shall be conformed to by all HL7 source messages communicating the following ADT trigger events:

- A02 (transfer a patient)
- A21 (patient goes on a "leave of absence")
- A22 (patient returns from a "leave of absence")
- A23 (delete a patient record)
- A25 (cancel pending discharge)
- A26 (cancel pending transfer)
- A27 (cancel pending admit)
- A29 (delete person information)
- A32 (cancel patient arriving – tracking)
- A33 (cancel patient departing – tracking)

| Segment | Description | Usage | Cardinality | HL7 Chapter | Comments |
|---|---|---|---|---|---|
| MSH | Message header | R | 1..1 | 2 | |
| [ { SFT } ] | Software segment | RE | 0..99 | 2 | Implemented beginning in HL7 V2.5 |
| EVN | Event type | R | 1..1 | 3 | |
| PID | Patient identification | R | 1..1 | 3 | |
| [ PD1 ] | Additional demographics | RE | 0..1 | 3 | |
| PV1 | Patient visit | R | 1..1 | 3 | |
| [ PV2 ] | Patient visit - additional info. | X | 0..0 | 3 | |
| [ { DB1 } ] | Disability information | X | 0..0 | 3 | |
| [ { OBX } ] | Observation / result | RE | 0..2 | 7 | Patient height and weight |

## 5.3 ADT (Patient Administration) Message – Trigger Event A03

The definitions in the table below shall be conformed to by all HL7 source messages communicating ADT trigger event A03 (discharge / end visit).

| Segment | Description | Usage | Cardinality | HL7 Chapter | Comments |
|---|---|---|---|---|---|
| MSH | Message header | R | 1..1 | 2 | |
| [ { SFT } ] | Software segment | RE | 0..99 | 2 | Implemented beginning in HL7 V2.5 |
| EVN | Event type | R | 1..1 | 3 | |
| PID | Patient identification | R | 1..1 | 3 | |
| [ PD1 ] | Additional demographics | RE | 0..1 | 3 | |
| PV1 | Patient visit | R | 1..1 | 3 | |
| [ PV2 ] | Patient visit - additional info. | X | 0..0 | 3 | |
| [ { DB1 } ] | Disability information | X | 0..0 | 3 | |
| [ { DG1 } ] | Diagnosis information | RE | 0..99 | 6 | |
| [ DRG ] | Diagnosis related group | X | 0..0 | 6 | |
| [ { PR1 | Procedures | RE | 0..99 | 6 | |
| [ { ROL } ] | Role | X | 0..0 | 12 | |
| } ] | | | | | |
| [ { OBX } ] | Observation / result | RE | 0..2 | 7 | Patient height and weight |
| [ | | | | | |
| { IN1 | Insurance | R | 0..99 | 6 | |
| [ IN2 ] | Insurance additional info. | X | 0..0 | 6 | |
| [ { IN3 } ] | Insurance add'l info - cert. | X | 0..0 | 6 | |
| } | | | | | |
| ] | | | | | |

## 5.4 ADT (Patient Administration) Message – Trigger Events A06, A07

The definitions in the table below shall be conformed to by all HL7 source messages communicating ADT trigger events A06 (change an outpatient to an inpatient) and A07 (change an inpatient to an outpatient).

| Segment | Description | Usage | Cardinality | HL7 Chapter | Comments |
|---|---|---|---|---|---|
| MSH | Message header | R | 1..1 | 2 | |
| [ { SFT } ] | Software segment | RE | 0..99 | 2 | Implemented beginning in HL7 V2.5 |
| EVN | Event type | R | 1..1 | 3 | |
| PID | Patient identification | R | 1..1 | 3 | |
| [ PD1 ] | Additional demographics | RE | 0..1 | 3 | |
| [ MRG ] | Merge Information | RE | 0..1 | 3 | |
| [ { NK1 } ] | Next of kin / associated parties | X | 0..0 | 3 | |
| PV1 | Patient visit | R | 1..1 | 3 | |
| [ PV2 ] | Patient visit - additional info. | X | 0..0 | 3 | |
| [ { DB1 } ] | Disability information | X | 0..0 | 3 | |
| [ { OBX } ] | Observation / result | RE | 0..2 | 7 | Patient height and weight |
| [ { AL1 } ] | Allergy information | X | 0..0 | 3 | |
| [ { DG1 } ] | Diagnosis information | RE | 0..99 | 6 | |
| [ DRG ] | Diagnosis related group | X | 0..0 | 6 | |
| [ { PR1 | Procedures | RE | 0..99 | 6 | |
| [ { ROL } ] | Role | X | 0..0 | 12 | |
| } ] | | | | | |
| [ { GT1 } ] | Guarantor | X | 0..0 | 6 | |
| [ | | | | | |
| { IN1 | Insurance | R | 0..99 | 6 | |
| [ IN2 ] | Insurance additional info. | X | 0..0 | 6 | |
| [ { IN3 } ] | Insurance add'l info - cert. | X | 0..0 | 6 | |

| Segment | Description | Usage | Cardinality | HL7 Chapter | Comments |
|---|---|---|---|---|---|
| } | | | | | |
| ] | | | | | |
| [ ACC ] | Accident information | X | 0..0 | 6 | |
| [ UB1 ] | Universal bill information | X | 0..0 | 6 | |
| [ UB2 ] | Universal bill 92 information | X | 0..0 | 6 | |

## 5.5 ADT (Patient Administration) Message – Trigger Events A09, A10, A11, A15

The definitions in the table below shall be conformed to by all HL7 source messages communicating the following ADT trigger events:

A09 (patient departing – tracking)

A10 (patient arriving – tracking)

A11 (cancel admit / visit notification)

A15 (pending transfer)

| Segment | Description | Usage | Cardinality | HL7 Chapter | Comments |
|---|---|---|---|---|---|
| MSH | Message header | R | 1..1 | 2 | |
| [ { SFT } ] | Software segment | RE | 0..99 | 2 | Implemented beginning in HL7 V2.5 |
| EVN | Event type | R | 1..1 | 3 | |
| PID | Patient identification | R | 1..1 | 3 | |
| [ PD1 ] | Additional demographics | RE | 0..1 | 3 | |
| PV1 | Patient visit | R | 1..1 | 3 | |
| [ PV2 ] | Patient visit - additional info. | X | 0..0 | 3 | |
| [ { DB1 } ] | Disability information | X | 0..0 | 3 | |
| [ { OBX } ] | Observation / result | RE | 0..2 | 7 | Patient height and weight |
| [ { DG1 } ] | Diagnosis information | RE | 0..99 | 6 | |

## 5.6 ADT (Patient Administration) Message – Trigger Event A12

The definitions in the table below shall be conformed to by all HL7 source messages communicating ADT trigger event A12 (cancel transfer).

| Segment | Description | Usage | Cardinality | HL7 Chapter | Comments |
|---|---|---|---|---|---|
| MSH | Message header | R | 1..1 | 2 | |
| [ { SFT } ] | Software segment | RE | 0..99 | 2 | Implemented beginning in HL7 V2.5 |
| EVN | Event type | R | 1..1 | 3 | |
| PID | Patient identification | R | 1..1 | 3 | |
| [ PD1 ] | Additional demographics | RE | 0..1 | 3 | |
| PV1 | Patient visit | R | 1..1 | 3 | |
| [ PV2 ] | Patient visit - additional info. | X | 0..0 | 3 | |
| [ { DB1 } ] | Disability information | X | 0..0 | 3 | |
| [ { OBX } ] | Observation / result | RE | 0..2 | 7 | Patient height and weight |
| [ DG1 ] | Diagnosis information | RE | 0..1 | 6 | |

## 5.7 ADT (Patient Administration) Message – Trigger Event A17

The definitions in the table below shall be conformed to by all HL7 source messages communicating ADT trigger event A17 (swap patients).

| Segment | Description | Usage | Cardinality | HL7 Chapter | Comments |
|---|---|---|---|---|---|
| MSH | Message header | R | 1..1 | 2 | |
| [ { SFT } ] | Software segment | RE | 0..99 | 2 | Implemented beginning in HL7 V2.5 |
| EVN | Event type | R | 1..1 | 3 | |
| PID | Patient identification | R | 1..1 | 3 | 1st patient ("swap-from") information |
| [ PD1 ] | Additional demographics | RE | 0..1 | 3 | |
| PV1 | Patient visit | R | 1..1 | 3 | |
| [ PV2 ] | Patient visit - additional info. | X | 0..0 | 3 | |
| [ { DB1 } ] | Disability information | X | 0..0 | 3 | |
| [ { OBX } ] | Observation / result | RE | 0..2 | 7 | Patient height and weight |
| PID | Patient identification | R | 1..1 | 3 | 2nd patient ("swap-to") information |
| [ PD1 ] | Additional demographics | RE | 0..1 | 3 | |
| PV1 | Patient visit | R | 1..1 | 3 | |
| [ PV2 ] | Patient visit - additional info. | X | 0..0 | 3 | |
| [ { DB1 } ] | Disability information | X | 0..0 | 3 | |
| [ { OBX } ] | Observation / result | RE | 0..2 | 7 | Patient height and weight |

## 5.8 ADT (Patient Administration) Message – Trigger Event A20

The definitions in the table below shall be conformed to by all HL7 source messages communicating ADT trigger event A20 (bed status update).

| Segment | Description | Usage | Cardinality | HL7 Chapter | Comments |
|---|---|---|---|---|---|
| MSH | Message header | R | 1..1 | 2 | |
| [ { SFT } ] | Software segment | RE | 0..99 | 2 | Implemented beginning in HL7 V2.5 |
| EVN | Event type | R | 1..1 | 3 | |
| NPU | Non-patient update | R | 1..1 | 3 | |

## 5.9 ADT (Patient Administration) Message – Trigger Events A24, A37

The definitions in the table below shall be conformed to by all HL7 source messages communicating ADT trigger event A24 (link patient information) and A37 (unlink patient information).

| Segment | Description | Usage | Cardinality | HL7 Chapter | Comments |
|---|---|---|---|---|---|
| MSH | Message header | R | 1..1 | 2 | |
| [ { SFT } ] | Software segment | RE | 0..99 | 2 | Implemented beginning in HL7 V2.5 |
| EVN | Event type | R | 1..1 | 3 | |
| PID | Patient identification | R | 1..1 | 3 | Patient's first ID to link (A24) or unlink (A37) (same person as that of second patient ID) |
| [ PD1 ] | Additional demographics | RE | 0..1 | 3 | |
| [ PV1 ] | Patient visit | RE | 1..1 | 3 | Linkage may take place outside a visit context |
| [ { DB1 } ] | Disability information | X | 0..0 | 3 | |
| PID | Patient identification | R | 1..1 | 3 | Patient's second ID to link (A24) or unlink (A37) (same person as that of first patient ID) |
| [ PD1 ] | Additional demographics | RE | 0..1 | 3 | |
| [ PV1 ] | Patient visit | RE | 1..1 | 3 | Linkage may take place outside a visit context |
| [ { DB1 } ] | Disability information | X | 0..0 | 3 | |

## 5.10 ACK (Acknowledgment) Message

Receiving QDSOs shall send an acknowledgment message reply to each message received from MiHIN. The definitions in the table below shall be conformed to by all HL7 acknowledgment messages.

| Segment | Description | Usage | Cardinality | HL7 Chapter | Comments |
|---|---|---|---|---|---|
| MSH | Message header | R | 1..1 | 2 | |
| MSA | Message acknowledgment | R | 1..1 | 2 | |
| [ { ERR } ] | Error | RE | 0..99 | 2 | |

# 6 Static Definition – Segment Level

Each segment of an HL7 message sent to MiHIN shall conform to the static definition given in the corresponding subsection below. The definitions of each field are given in Section 6, "Static Definition – Field Level."

## 6.1 MSH (Message Header) Segment

The definitions in the table below shall be conformed to by all HL7 messages communicating the MSH (message header) segment.

Definitions of all fields, including components, subcomponents, and vocabularies of each field, are given in Section 6.1, "MSH (Message Header) Segment Fields."

| Seq | Len | DT | Usage | Cardinality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | ST | R | 1..1 | | 00001 | Field Separator | |
| 2 | 4 | ST | R | 1..1 | | 00002 | Encoding Characters | |
| 3 | 180 | HD | R | 1..1 | 0361 | 00003 | Sending Application | OID for sending hospital's or health system's application |
| 4 | 180 | HD | R | 1..1 | 0362 | 00004 | Sending Facility | OID / NPI for sending hospital and OID for sending health system |
| 5 | 180 | HD | R | 1..1 | 0361 | 00005 | Receiving Application | OID for MiHIN ToC service |
| 6 | 180 | HD | R | 1..1 | 0362 | 00006 | Receiving Facility | OID for MiHIN enterprise |
| 7 | 26 | TS | R | 1..1 | | 00007 | Date/Time of Message | |
| 8 | 40 | ST | X | 0..0 | | 00008 | Security | |
| 9 | 7 | CM | R | 1..1 | 0076 0003 | 00009 | Message Type | |
| 10 | 20 | ST | R | 1..1 | | 00010 | Message Control ID | Should be repopulated (rather than pass-through) for outbound message header |
| 11 | 3 | PT | R | 1..1 | | 00011 | Processing ID | Should always be **P** when in production |
| 12 | 60 | VID | R | 1..1 | 0104 | 00012 | Version ID | |
| 13 | 15 | NM | X | 0..0 | | 00013 | Sequence Number | |
| 14 | 180 | ST | X | 0..0 | | 00014 | Continuation Pointer | |
| 15 | 2 | ID | X | 0..0 | 0155 | 00015 | Accept Acknowledgment Type | |

| Seq | Len | DT | Usage | Cardinality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 16 | 2 | ID | X | 0..0 | 0155 | 00016 | Application Acknowledgment Type | |
| 17 | 2 | ID | X | 0..0 | | 00017 | Country Code | |
| 18 | 16 | ID | X | 0..0 | | 00692 | Character Set | |
| 19 | 60 | CE | X | 0..0 | | | Principal Language of Message | |
| 20 | 20 | ID | X | 0..0 | | 00356 | Alternate Character Set Handling Scheme | |

## 6.2 SFT (Software) Segment

The definitions in the table below shall be conformed to by all HL7 messages communicating the SFT (software) segment. Systems using HL7 versions previous to Version 2.5 shall not be expected to send the SFT segment.

Definitions of all fields, including components, subcomponents, and vocabularies of each field, are given in Section 6.2, "SFT (Software) Segment Fields."

| Seq | Len | DT | Usage | Cardinality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 567 | XON | R | 1..1 | | 01834 | Software Vendor Organization | |
| 2 | 15 | ST | R | 1..1 | | 01835 | Software Certified Version or Release Number | |
| 3 | 20 | ST | R | 1..1 | | 01836 | Software Product Name | |
| 4 | 20 | ST | R | 1..1 | | 01837 | Software Binary ID | |
| 5 | 1024 | TX | X | 0..0 | | 01838 | Software Product Information | |
| 6 | 26 | TS | X | 0..0 | | 01839 | Software Install Date | |

## 6.3 EVN (Event Type) Segment

The definitions in the table below shall be conformed to by all HL7 messages communicating the EVN (event type) segment. Systems using HL7 versions previous to Version 2.4 shall not be expected to send field *EVN-7-event facility*.

Definitions of all fields, including components, subcomponents, and vocabularies of each field, are given in Section 6.3, "EVN (Event Type) Segment Fields."

| Seq | Len | DT | Usage | Cardinality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 3 | ID | X | 0..0 | 0003 | 00099 | Event Type Code | |
| 2 | 26 | TS | R | 1..1 | | 00100 | Recorded Date/Time | |
| 3 | 26 | TS | X | 0..0 | | 00101 | Date/Time Planned Event | |
| 4 | 3 | IS | X | 0..0 | 0062 | 00102 | Event Reason Code | |
| 5 | 60 | XCN | X | 0..0 | 0188 | 00103 | Operator ID | |
| 6 | 26 | TS | X | 0..0 | | 01278 | Event Occurred | |
| 7 | 180 | HD | R | 1..1 | | 01534 | Event Facility | Implemented beginning in HL7 V2.4 |

## 6.4 PID (Patient Identification) Segment

The definitions in the table below shall be conformed to by all HL7 messages communicating the PID (patient identification) segment.

Definitions of all fields, including components, subcomponents, and vocabularies of each field, are given in Section 6.4, "PID (Patient Identification) Segment Fields."

| Seq | Len | DT | Usage | Cardi-nality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 4 | SI | X | 0..0 | | 00104 | Set ID - PID | |
| 2 | 20 | CX | RE | 0..1 | | 00105 | Patient ID | |
| 3 | 20 | CX | R | 1..99 | | 00106 | Patient Identifier List | |
| 4 | 20 | CX | RE | 0..99 | | 00107 | Alternate Patient ID - PID | |
| 5 | 48 | XPN | R | 1..99 | | 00108 | Patient Name | |
| 6 | 48 | XPN | X | 0..0 | | 00109 | Mother's Maiden Name | |
| 7 | 26 | TS | R | 1..1 | | 00110 | Date/Time of Birth | |
| 8 | 1 | IS | R | 1..1 | 0001 | 00111 | Sex | |
| 9 | 48 | XPN | X | 0..0 | | 00112 | Patient Alias | |
| 10 | 80 | CE | RE | 0..19 | 0005 | 00113 | Race | |
| 11 | 106 | XAD | RE | 0..19 | | 00114 | Patient Address | |
| 12 | 4 | IS | X | 0..0 | 0289 | 00115 | County Code | |
| 13 | 40 | XTN | RE | 0..9 | | 00116 | Phone Number - Home | |
| 14 | 40 | XTN | RE | 0..9 | | 00117 | Phone Number - Business | |
| 15 | 60 | CE | X | 0..0 | 0296 | 00118 | Primary Language | |
| 16 | 80 | CE | X | 0..0 | 0002 | 00119 | Marital Status | |
| 17 | 80 | CE | X | 0..0 | 0006 | 00120 | Religion | |
| 18 | 20 | CX | X | 0..0 | | 00121 | Patient Account Number | |
| 19 | 4 | ST | R | 1..1 | | 00122 | SSN Number - Patient | Last four digits only are required to increase the strength of patient match |
| 20 | 25 | DLN | RE | 0..1 | | 00123 | Driver's License Number - Patient | |

| Seq | Len | DT | Usage | Cardi-nality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 21 | 20 | CX | C | 0..1 | | 00124 | Mother's Identifier | Populated if the age of the patient is less than 1 month |
| 22 | 80 | CE | RE | 0..19 | 0189 | 00125 | Ethnic Group | |
| 23 | 60 | ST | X | 0..0 | | 00126 | Birth Place | |
| 24 | 1 | ID | RE | 0..1 | 0136 | 00127 | Multiple Birth Indicator | |
| 25 | 2 | NM | C | 0..1 | | 00128 | Birth Order | Populated if and only if PID-24 is **Y** |
| 26 | 80 | CE | X | 0..0 | 0171 | 00129 | Citizenship | |
| 27 | 60 | CE | X | 0..0 | 0172 | 00130 | Veterans Military Status | |
| 28 | 80 | CE | X | 0..0 | 0212 | 00739 | Nationality | |
| 29 | 26 | TS | RE | 0..1 | | 00740 | Patient Death Date and Time | |
| 30 | 1 | ID | RE | 0..1 | 0136 | 00741 | Patient Death Indicator | |

## 6.5 PD1 (Additional Demographics) Segment

The definitions in the table below shall be conformed to by all HL7 messages communicating the PD1 (additional demographics) segment.

Definitions of all fields, including components, subcomponents, and vocabularies of each field, are given in Section 6.5, "PD1 (Additional Demographics) Segment Fields."

| Seq | Len | DT | Usage | Cardinality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | IS | X | 0..0 | 0223 | 00755 | Living Dependency | |
| 2 | 2 | IS | X | 0..0 | 0220 | 00742 | Living Arrangement | |
| 3 | 90 | XON | X | 0..0 | | 00756 | Patient Primary Facility | |
| 4 | 90 | XCN | RE | 0..19 | | 00757 | Patient Primary Care Provider Name & ID No. | |
| 5 | 2 | IS | X | 0..0 | 0231 | 00745 | Student Indicator | |
| 6 | 2 | IS | X | 0..0 | 0295 | 00753 | Handicap | |
| 7 | 2 | IS | X | 0..0 | 0315 | 00759 | Living Will | |
| 8 | 2 | IS | X | 0..0 | 0316 | 00760 | Organ Donor | |
| 9 | 1 | ID | X | 0..0 | 0136 | 00761 | Separate Bill | |
| 10 | 20 | CX | X | 0..0 | | 00762 | Duplicate Patient | |
| 11 | 80 | CE | X | 0..0 | 0215 | 00743 | Publicity Code | |
| 12 | 1 | ID | X | 0..0 | 0136 | 00744 | Protection Indicator | |

## 6.6 PV1 (Patient Visit) Segment

The definitions in the table below shall be conformed to by all HL7 messages communicating the PV1 (patient visit) segment.

Definitions of all fields, including components, subcomponents, and vocabularies of each field, are given in Section 6.6, "PV1 (Patient Visit) Segment Fields."

| Seq | Len | DT | Usage | Cardinality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 4 | SI | X | 0..0 | | 00131 | Set ID - PV1 | |
| 2 | 1 | IS | R | 1..1 | 0004 | 00132 | Patient Class | |
| 3 | 80 | PL | RE | 0..1 | | 00133 | Assigned Patient Location | |
| 4 | 2 | IS | RE | 0..1 | 0007 | 00134 | Admission Type | |
| 5 | 20 | CX | X | 0..0 | | 00135 | Preadmit Number | |
| 6 | 80 | PL | X | 0..0 | | 00136 | Prior Patient Location | |
| 7 | 60 | XCN | RE | 0..19 | 0010 | 00137 | Attending Doctor | |
| 8 | 60 | XCN | RE | 0..19 | 0010 | 00138 | Referring Doctor | |
| 9 | 60 | XCN | RE | 0..19 | 0010 | 00139 | Consulting Doctor | Deprecated in V2.3.1 in favor of **ROL** |
| 10 | 3 | IS | RE | 0..1 | 0069 | 00140 | Hospital Service | |
| 11 | 80 | PL | X | 0..0 | | 00141 | Temporary Location | |
| 12 | 2 | IS | X | 0..0 | 0087 | 00142 | Preadmit Test Indicator | |
| 13 | 2 | IS | RE | 0..1 | 0092 | 00143 | Re-admission Indicator | |
| 14 | 3 | IS | RE | 0..1 | 0023 | 00144 | Admit Source | |
| 15 | 2 | IS | X | 0..0 | 0009 | 00145 | Ambulatory Status | |
| 16 | 2 | IS | X | 0..0 | 0099 | 00146 | VIP Indicator | |
| 17 | 60 | XCN | RE | 0..19 | 0010 | 00147 | Admitting Doctor | |
| 18 | 2 | IS | RE | 0..1 | 0018 | 00148 | Patient Type | |
| 19 | 20 | CX | X | 0..0 | | 00149 | Visit Number | |
| 20 | 50 | FC | X | 0..0 | 0064 | 00150 | Financial Class | |
| 21 | 2 | IS | X | 0..0 | 0032 | 00151 | Charge Price Indicator | |
| 22 | 2 | IS | X | 0..0 | 0045 | 00152 | Courtesy Code | |
| 23 | 2 | IS | X | 0..0 | 0046 | 00153 | Credit Rating | |
| 24 | 2 | IS | X | 0..0 | 0044 | 00154 | Contract Code | |
| 25 | 8 | DT | X | 0..0 | | 00155 | Contract Effective Date | |
| 26 | 12 | NM | X | 0..0 | | 00156 | Contract Amount | |
| 27 | 3 | NM | X | 0..0 | | 00157 | Contract Period | |

| Seq | Len | DT | Usage | Cardinality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 28 | 2 | IS | X | 0..0 | 0073 | 00158 | Interest Code | |
| 29 | 1 | IS | X | 0..0 | 0110 | 00159 | Transfer to Bad Debt Code | |
| 30 | 8 | DT | X | 0..0 | | 00160 | Transfer to Bad Debt Date | |
| 31 | 10 | IS | X | 0..0 | 0021 | 00161 | Bad Debt Agency Code | |
| 32 | 12 | NM | X | 0..0 | | 00162 | Bad Debt Transfer Amount | |
| 33 | 12 | NM | X | 0..0 | | 00163 | Bad Debt Recovery Amount | |
| 34 | 1 | IS | X | 0..0 | 0111 | 00164 | Delete Account Indicator | |
| 35 | 8 | DT | X | 0..0 | | 00165 | Delete Account Date | |
| 36 | 3 | IS | RE | 0..1 | 0112 | 00166 | Discharge Disposition | |
| 37 | 25 | CM | RE | 0..1 | 0113 | 00167 | Discharged to Location | |
| 38 | 80 | CE | X | 0..0 | 0114 | 00168 | Diet Type | |
| 39 | 2 | IS | X | 0..0 | 0115 | 00169 | Servicing Facility | |
| 40 | 1 | IS | X | 0..0 | 0116 | 00170 | Bed Status | |
| 41 | 2 | IS | X | 0..0 | 0117 | 00171 | Account Status | |
| 42 | 80 | PL | X | 0..0 | | 00172 | Pending Location | |
| 43 | 80 | PL | X | 0..0 | | 00173 | Prior Temporary Location | |
| 44 | 26 | TS | RE | 0..1 | | 00174 | Admit Date/Time | |
| 45 | 26 | TS | RE | 0..1 | | 00175 | Discharge Date/Time | |
| 46 | 12 | NM | X | 0..0 | | 00176 | Current Patient Balance | |
| 47 | 12 | NM | X | 0..0 | | 00177 | Total Charges | |
| 48 | 12 | NM | X | 0..0 | | 00178 | Total Adjustments | |
| 49 | 12 | NM | X | 0..0 | | 00179 | Total Payments | |
| 50 | 20 | CX | X | 0..0 | 0203 | 00180 | Alternate Visit ID | |
| 51 | 1 | IS | X | 0..0 | 0326 | 01226 | Visit Indicator | |
| 52 | 60 | XCN | X | 0..0 | 0010 | 01274 | Other Healthcare Provider | |

## 6.7 OBX (Observation / Result) Segment

The definitions in the table below shall be conformed to by all HL7 messages communicating the OBX (observation / result) segment.

Definitions of all fields, including components, subcomponents, and vocabularies of each field, are given in Section 6.7, "OBX (Observation / Result) Segment Fields."

| Seq | Len | DT | Usage | Cardinality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 4 | SI | RE | 0..1 | | 00569 | Set ID - OBX | |
| 2 | 3 | ID | R | 1..1 | 0125 | 00570 | Value Type | Always **NM** for patient height and weight |
| 3 | 80 | CE | R | 1..1 | | 00571 | Observation Identifier | Always a LOINC code for patient height and weight. LOINC coding is strongly recommended for other observations. |
| 4 | 20 | ST | X | 0..0 | | 00572 | Observation Sub-ID | |
| 5 | 65536 | | RE | 0..1 | | 00573 | Observation Value | Must be sent unless OBX-11 = **X** |
| 6 | 60 | CE | R | 1..1 | | 00574 | Units | |
| 7 | 60 | ST | X | 0..0 | | 00575 | References Range | |
| 8 | 5 | ID | X | 0..0 | 0078 | 00576 | Abnormal Flags | |
| 9 | 5 | NM | X | 0..0 | | 00577 | Probability | |
| 10 | 2 | ID | X | 0..0 | 0080 | 00578 | Nature of Abnormal Test | |
| 11 | 1 | ID | R | 1..1 | 0085 | 00579 | Observation Result Status | |
| 12 | 26 | TS | X | 0..0 | | 00580 | Date Last Obs Normal Values | |
| 13 | 20 | ST | X | 0..0 | | 00581 | User Defined Access Checks | |
| 14 | 26 | TS | R | 1..1 | | 00582 | Date/Time of the Observation | |
| 15 | 60 | CE | X | 0..0 | | 00583 | Producer's ID | |
| 16 | 80 | XCN | X | 0..0 | | 00584 | Responsible Observer | |
| 17 | 60 | CE | X | 0..0 | | 00936 | Observation Method | |

## 6.8 DG1 (Diagnosis Information) Segment

The definitions in the table below shall be conformed to by all HL7 messages communicating the DG1 (diagnosis information) segment.

Definitions of all fields, including components, subcomponents, and vocabularies of each field, are given in Section 6.8, "DG1 (Diagnosis Information) Segment Fields."

| Seq | Len | DT | Usage | Cardinality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 4 | SI | X | 0..0 | | 00375 | Set ID - DG1 | |
| 2 | 2 | ID | C | 0..1 | 0053 | 00376 | Diagnosis Coding Method | Deprecated in V2.3.1 in favor of **DG1-3.3** / **DG1-3.6**. To be populated only when those components are not used. |
| 3 | 60 | CE | R | 1..1 | 0051 | 00377 | Diagnosis Code - DG1 | |
| 4 | 40 | ST | R | 1..1 | | 00378 | Diagnosis Description | |
| 5 | 26 | TS | R | 1..1 | | 00379 | Diagnosis Date/Time | |
| 6 | 2 | IS | R | 1..1 | 0052 | 00380 | Diagnosis Type | |
| 7 | 60 | CE | X | 0..0 | 0118 | 00381 | Major Diagnostic Category | |
| 8 | 60 | CE | X | 0..0 | 0055 | 00382 | Diagnosis Related Group | |
| 9 | 1 | ID | X | 0..0 | 0136 | 00383 | DRG Approval Indicator | |
| 10 | 2 | IS | X | 0..0 | 0056 | 00384 | DRG Grouper Review Code | |
| 11 | 60 | CE | X | 0..0 | 0083 | 00385 | Outlier Type | |
| 12 | 3 | NM | X | 0..0 | | 00386 | Outlier Days | |
| 13 | 12 | CP | X | 0..0 | | 00387 | Outlier Cost | |
| 14 | 4 | ST | X | 0..0 | | 00388 | Grouper Version And Type | |
| 15 | 2 | ID | X | 0..0 | 0359 | 00389 | Diagnosis Priority | |
| 16 | 60 | XCN | X | 0..0 | | 00390 | Diagnosing Clinician | |
| 17 | 3 | IS | X | 0..0 | 0228 | 00766 | Diagnosis Classification | |
| 18 | 1 | ID | X | 0..0 | 0136 | 00767 | Confidential Indicator | |
| 19 | 26 | TS | X | 0..0 | | 00768 | Attestation Date/Time | |

## 6.9 PR1 (Procedures) Segment

The definitions in the table below shall be conformed to by all HL7 messages communicating the PR1 (procedures) segment.

Definitions of all fields, including components, subcomponents, and vocabularies of each field, are given in Section 6.9, "PR1 (Procedures) Segment Fields."

| Seq | Len | DT | Usage | Cardinality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 4 | SI | X | 0..0 | | 00391 | Set ID - PR1 | |
| 2 | 2 | IS | C | 1..1 | 0089 | 00392 | Procedure Coding Method | Deprecated in V2.3.1 in favor of **PR1-3.3** / **PR1-3.6**. To be populated only when those components are not used. |
| 3 | 80 | CE | R | 1..1 | 0088 | 00393 | Procedure Code | |
| 4 | 40 | ST | C | 1..1 | | 00394 | Procedure Description | Deprecated in V2.3.1 in favor of **PR1-3.2** / **PR1-3.5**. To be populated only when those components are not used. |
| 5 | 26 | TS | R | 1..1 | | 00395 | Procedure Date/Time | |
| 6 | 2 | IS | X | 0..0 | 0230 | 00396 | Procedure Functional Type | |
| 7 | 4 | NM | X | 0..0 | | 00397 | Procedure Minutes | |
| 8 | 120 | XCN | RE | 1..19 | 0010 | 00398 | Anesthesiologist | Deprecated in V2.3.1 in favor of **ROL** |
| 9 | 2 | IS | X | 0..0 | 0019 | 00399 | Anesthesia Code | |
| 10 | 4 | NM | X | 0..0 | | 00400 | Anesthesia Minutes | |
| 11 | 120 | XCN | RE | 1..19 | 0010 | 00401 | Surgeon | Deprecated in V2.3.1 in favor of **ROL** |
| 12 | 230 | XCN | X | 0..0 | 0010 | 00402 | Procedure Practitioner | |
| 13 | 60 | CE | X | 0..0 | 0059 | 00403 | Consent Code | |
| 14 | 2 | NM | X | 0..0 | | 00404 | Procedure Priority | |
| 15 | 80 | CE | X | 0..0 | 0051 | 00772 | Associated Diagnosis Code | |
| 16 | 80 | CE | X | 0..0 | 0340 | 01316 | Procedure Code Modifier | |

## 6.10 IN1 (Insurance) Segment

The definitions in the table below shall be conformed to by all HL7 messages communicating the IN1 (insurance) segment.

Definitions of all fields, including components, subcomponents, and vocabularies of each field, are given in Section 6.10, "IN1 (Insurance) Segment Fields."

| Seq | Len | DT | Usage | Cardinality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 4 | SI | R | 1..1 | | 00426 | Set ID - IN1 | |
| 2 | 60 | CE | R | 1..1 | 0073 | 00368 | Insurance Plan ID | |
| 3 | 59 | CX | R | 1..9 | | 00428 | Insurance Company ID | |
| 4 | 130 | XON | R | 1..9 | | 00429 | Insurance Company Name | |
| 5 | 106 | XAD | X | 0..0 | | 00430 | Insurance Company Address | |
| 6 | 48 | XPN | X | 0..0 | | 00431 | Insurance Co Contact Person | |
| 7 | 40 | XTN | X | 0..0 | | 00432 | Insurance Co Phone Number | |
| 8 | 12 | ST | X | 0..0 | | 00433 | Group Number | |
| 9 | 130 | XON | X | 0..0 | | 00434 | Group Name | |
| 10 | 12 | CX | X | 0..0 | | 00435 | Insured's Group Emp ID | |
| 11 | 130 | XON | X | 0..0 | | 00436 | Insured's Group Emp Name | |
| 12 | 8 | DT | X | 0..0 | | 00437 | Plan Effective Date | |
| 13 | 8 | DT | X | 0..0 | | 00438 | Plan Expiration Date | |
| 14 | 55 | CM | X | 0..0 | | 00439 | Authorization Information | |
| 15 | 3 | IS | X | 0..0 | 0086 | 00440 | Plan Type | |
| 16 | 48 | XPN | X | 0..0 | | 00441 | Name Of Insured | |
| 17 | 80 | CE | X | 0..0 | 0063 | 00442 | Insured's Relationship To Patient | |
| 18 | 26 | TS | X | 0..0 | | 00443 | Insured's Date Of Birth | |
| 19 | 106 | XAD | X | 0..0 | | 00444 | Insured's Address | |
| 20 | 2 | IS | X | 0..0 | 0135 | 00445 | Assignment Of Benefits | |
| 21 | 2 | IS | X | 0..0 | 0173 | 00446 | Coordination Of Benefits | |
| 22 | 2 | ST | X | 0..0 | | 00447 | Coord Of Ben. Priority | |
| 23 | 1 | ID | X | 0..0 | 0136 | 00448 | Notice Of Admission Flag | |
| 24 | 8 | DT | X | 0..0 | | 00449 | Notice Of Admission Date | |
| 25 | 1 | ID | X | 0..0 | 0136 | 00450 | Report Of Eligibility Flag | |
| 26 | 8 | DT | X | 0..0 | | 00451 | Report Of Eligibility Date | |
| 27 | 2 | IS | X | 0..0 | 0093 | 00452 | Release Information Code | |
| 28 | 15 | ST | X | 0..0 | | 00453 | Pre-Admit Cert (PAC) | |

| Seq | Len | DT | Usage | Cardinality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 29 | 26 | TS | X | 0..0 | | 00454 | Verification Date/Time | |
| 30 | 60 | XCN | X | 0..0 | | 00455 | Verification By | |
| 31 | 2 | IS | X | 0..0 | 0098 | 00456 | Type Of Agreement Code | |
| 32 | 2 | IS | X | 0..0 | 0022 | 00457 | Billing Status | |
| 33 | 4 | NM | X | 0..0 | | 00458 | Lifetime Reserve Days | |
| 34 | 4 | NM | X | 0..0 | | 00459 | Delay Before L.R. Day | |
| 35 | 8 | IS | X | 0..0 | 0042 | 00460 | Company Plan Code | |
| 36 | 15 | ST | RE | 0..1 | | 00461 | Policy Number | |
| 37 | 12 | CP | X | 0..0 | | 00462 | Policy Deductible | |
| 38 | 12 | CP | X | 0..0 | | 00463 | Policy Limit - Amount | |
| 39 | 4 | NM | X | 0..0 | | 00464 | Policy Limit - Days | |
| 40 | 12 | CP | X | 0..0 | | 00465 | Room Rate - Semi-Private | |
| 41 | 12 | CP | X | 0..0 | | 00466 | Room Rate - Private | |
| 42 | 60 | CE | X | 0..0 | 0066 | 00467 | Insured's Employment Status | |
| 43 | 1 | IS | X | 0..0 | 0001 | 00468 | Insured's Sex | |
| 44 | 106 | XAD | X | 0..0 | | 00469 | Insured's Employer's Address | |
| 45 | 2 | ST | X | 0..0 | | 00470 | Verification Status | |
| 46 | 8 | IS | X | 0..0 | 0072 | 00471 | Prior Insurance Plan ID | |
| 47 | 3 | IS | X | 0..0 | 0309 | 01227 | Coverage Type | |
| 48 | 2 | IS | X | 0..0 | 0295 | 00753 | Handicap | |
| 49 | 12 | CX | X | 0..0 | | 01230 | Insured's ID Number | |

## 6.11 NPU (Non-Patient Update) Segment

The definitions in the table below shall be conformed to by all HL7 messages communicating the NPU (non-patient update) segment.

Definitions of all fields, including components, subcomponents, and vocabularies of each field, are given in Section 6.11, "NPU (Non-Patient Update) Segment Fields."

| Seq | Len | DT | Usage | Cardinality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 80 | PL | R | 1..1 | | 00209 | Bed Location | |
| 2 | 1 | IS | RE | 0..1 | 0116 | 00170 | Bed Status | |

## 6.12 MSA (Message Acknowledgment) Segment

The definitions in the table below shall be conformed to by all HL7 messages communicating the MSA (message acknowledgment) segment.

Definitions of all fields, including components, subcomponents, and vocabularies of each field, are given in Section 6.12, "MSA (Message Acknowledgment) Segment Fields."

| Seq | Len | DT | Usage | Cardinality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | ID | R | 1..1 | 0008 | 00018 | Acknowledgment Code | |
| 2 | 20 | ST | R | 1..1 | | 00010 | Message Control ID | |
| 3 | 80 | ST | X | 0..0 | | 00020 | Text Message | |
| 4 | 15 | NM | X | 0..0 | | 00021 | Expected Sequence Number | |
| 5 | 1 | ID | X | 0..0 | 0102 | 00022 | Delayed Acknowledgment Type | |
| 6 | 100 | CE | X | 0..0 | | 00023 | Error Condition | |

## 6.13 ERR (Error) Segment

The definitions in the table below shall be conformed to by all HL7 messages communicating the ERR (error) segment.

Definitions of all fields, including components, subcomponents, and vocabularies of each field, are given in Section 6.13, "ERR (Error) Segment Fields."

| Seq | Len | DT | Usage | Cardinality | TBL# | Item # | Element Name | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 493 | ELD | C | 0..99 | | 00024 | Error Code and Location | Deprecated by HL7 V2.5 in favor of ERR-2 through ERR-12. If HL7 version is prior to V2.5, must be present. |
| 2 | 18 | ERL | CE | 0.99 | | 01812 | Error Location | If HL7 version is 2.5 or later, must be present if error code in ERR-3 relates to a message location. |
| 3 | 705 | CWE | C | 0..1 | 0357 | 01813 | HL7 Error Code | If HL7 version is 2.5 or later, must be present. |
| 4 | 2 | ID | C | 0..1 | 0516 | 01814 | Severity | If HL7 version is 2.5 or later, must be present. |
| 5 | 705 | CWE | X | 0..0 | 0533 | 01815 | Application Error Code | |
| 6 | 80 | ST | X | 0..0 | | 01816 | Application Error Parameter | |
| 7 | 2048 | TX | X | 0..0 | | 01817 | Diagnostic Information | |
| 8 | 250 | TX | X | 0..0 | | 01818 | User Message | |
| 9 | 20 | IS | X | 0..0 | 0517 | 01819 | Inform Person Indicator | |
| 10 | 705 | CWE | X | 0..0 | 0518 | 01820 | Override Type | |
| 11 | 705 | CWE | X | 0..0 | 0519 | 01821 | Override Reason Code | |
| 12 | 652 | XTN | X | 0..0 | | 01822 | Help Desk Contact Point | |

# 7 Static Definition – Field Level

## 7.1 MSH (Message Header) Segment Fields

The detailed field definitions below shall be conformed to by all HL7 messages communicating the MSH (message header) segment.

A summary table of usages, cardinalities and element names of all fields in the MSH segment is provided in Section 5.1, "MSH (Message Header) Segment."

**MSH-1 Field Separator**

This field, whose data type is ST (string), contains the top-level delimiter for HL7 elements within segments. HL7 Version 2.x processing rules require that the field separator be a single unique printable character, and that the field separator not be duplicated by any of the encoding characters in MSH-2 (see below).

**MSH-2 Encoding Characters**

This field, whose data type is ST (string), contains the component separator (secondary element delimiter), repetition separator, escape character, and subcomponent separator (tertiary element delimiter). HL7 Version 2.x processing rules require that each of the four encoding characters be a single unique printable character, and that none of the encoding characters duplicate the field separator.

**MSH-3 Sending Application**

This field contains the identifier of the application that generated the current message instance. The data type of *MSH-3-sending application* is HD, whose components are defined as follows:

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | IS | R | 0361 | Namespace ID | A string containing the name and/or other distinguishing information about the application instance. |
| 2 | ST | RE | | Universal ID | MiHIN expects the sender to use a registered OID for this component. The OID used in this component should represent the application instance (*e.g.*, the installation and version of a particular vendor's ADT or clinical departmental system) that is generating the message. |
| 3 | ID | CE | 0301 | Universal ID Type | If Component 2 is defined, this component shall contain **ISO**. |

**MSH-4 Sending Facility**

This field contains the identifiers of the facility and system that generated the current message instance. The data type of *MSH-4-sending facility* is HD, whose components are defined as follows:

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | IS | R | 0362 | Namespace ID | MiHIN expects the sender to use a registered OID for this component. The OID used in this component should represent the hospital that is sending the message. For example, if a patient is seen at Lansing Central Hospital and it is part of the Lansing Hospital System which has a unified EHR, the Lansing Central Hospital OID would go here. |
| 2 | ST | RE | | Universal ID | MiHIN expects the sender to use a registered OID for this component. The OID used in this component should represent the system containing the hospital that is sending the message. For example, if a patient is seen at Lansing Central Hospital and it is part of the Lansing Hospital System which has a unified EHR, the Lansing Hospital System OID would go here. |
| 3 | ID | CE | 0301 | Universal ID Type | If either Component 1 or Component 2 is defined, this component shall contain **ISO**. |

### MSH-5 Receiving Application

This field contains the identifier of the application to which the current message instance is directed. The data type of *MSH-5-receiving application* is HD, whose components are defined as follows:

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | IS | R | 0361 | Namespace ID | A string containing the name and/or other distinguishing information about the application instance. When sending to MiHIN, use the literal string **Transitions of Care Notification**. |
| 2 | ST | RE | | Universal ID | MiHIN expects the sender to use a registered OID for this component. When sending production messages to MiHIN, use the OID value **2.16.840.1.113883.3.1481.1.2.2**.<br><br>When sending test messages to MiHIN, use the OID value **2.16.840.1.113883.3.1481.2.2.2**.<br><br>When sending development messages to MiHIN, use the OID value **2.16.840.1.113883.3.1481.3.2.2**. |
| 3 | ID | CE | 0301 | Universal ID Type | If Component 2 is defined, this component shall contain **ISO**. |

### MSH-6 Receiving Facility

This field contains the identifier of the facility to which the current message instance is directed. The data type of *MSH-6-receiving facility* is HD, whose components are defined as follows:

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | IS | R | 0362 | Namespace ID | A string containing the name and/or other distinguishing information about the receiving facility. When sending to MiHIN, use the literal string **Michigan Health Information Network**. |
| 2 | ST | RE | | Universal ID | MiHIN expects the sender to use a registered OID for this component. When sending to MiHIN, use the value **2.16.840.1.113883.3.1481**. |
| 3 | ID | CE | 0301 | Universal ID Type | If Component 2 is defined, this component shall contain **ISO**. |

### MSH-7 Date/Time of Message

This field, whose data type is TS, contains the date and time when the sending system built the message.

### MSH-9 Message Type

This field, whose data type is CM, contains the message type and trigger event of the message. Its components are defined as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ID | R | 0076 | Message Type | Always **ADT** |
| 2 | ID | R | 0003 | Trigger Event | The three-character trigger event code for the current message instance |
| 3 | ID | X | 0301 | Message Structure | |

### MSH-10 Message Control ID

This field, whose data type is ST, contains a unique identifier for the message.

### MSH-11 Processing ID

This field is of data type PT. Its components are defined as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ID | R | 0103 | Processing ID | Must contain **P** for all production messages. May contain **D** for debugging messages or **T** for training messages. |
| 2 | ST | RE | 0207 | Universal ID | Must be empty, signifying current (real-time) processing. |

### MSH-12 Version ID

This field is of data type VID. Its components are defined as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ID | R | 0104 | Version ID | The HL7 version by whose rules the current message instance was generated. |
| 2 | CE | X | | Internationalization Code | |
| 3 | CE | X | | Internal Version ID | |

## 7.2 SFT (Software) Segment Fields

The detailed field definitions below shall be conformed to by all HL7 messages communicating the SFT (software) segment. Systems using HL7 versions previous to Version 2.5 shall not be expected to send the SFT segment.

A summary table of usages, cardinalities and element names of all fields in the SFT segment is provided in Section 5.2, "SFT (Software) Segment."

### SFT-1 Software Vendor Organization

This field, whose data type is XON, contains name and other identifying information for the vendor of the software that created the current message instance. Its components are defined as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | R | | Organization Name | Name of the vendor of the software that created the current message instance. |
| 2 | IS | X | 0204 | Organization Name Type Code | |
| 3 | NM | X | | ID Number | |
| 4 | NM | X | | Check Digit | |
| 5 | ID | X | 0061 | Code Identifying the Check Digit Scheme Employed | |
| 6 | HD | X | 0363 | Assigning Authority | |
| 7 | IS | X | 0203 | Identifier Type Code | |
| 8 | HD | X | | Assigning Facility ID | |
| 9 | ID | X | | Name Representation Code | |

### SFT-2 Software Certified Version or Release Number

This field, whose data type is ST, contains the latest version or release number of the software that created the current message instance.

### SFT-3 Software Product Name

This field, whose data type is ST, contains the name of the software that created the current message instance.

### SFT-4 Software Binary ID

This field, whose data type is ST, contains a unique checksum or other identifier that distinguishes the version of the software that created the current message instance from similar versions of the same software and from other products of the same vendor.

## 7.3 EVN (Event Type) Segment Fields

The detailed field definitions below shall be conformed to by all HL7 messages communicating the EVN (event type) segment.

A summary table of usages, cardinalities and element names of all fields in the EVN segment is provided in Section 5.3, "EVN (Event Type) Segment."

**EVN-2 Recorded Date/Time**

This field, whose data type is TS, contains the date and time when the event that triggered the creation of the current message instance was recorded in the creating system.

**EVN-7 Event Facility**

This field identifies the actual facility where the event occurred, as distinct from the facility identified in *MSH-4-sending facility*.

The data type of *EVN-7-event facility* is HD, whose components are defined as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | IS | R | 0362 | Namespace ID | The name of the originating facility. |
| 2 | ST | RE | | Universal ID | MiHIN expects the sender to use a registered OID for this component. The OID used in this component should represent the organization that is sending the message. For example, if a patient is seen at Lansing Central Hospital and it is part of the Lansing Hospital System which has a unified EHR, the Lansing Hospital System OID would go here. |
| 3 | ID | CE | 0301 | Universal ID Type | If Component 2 is defined, this component shall contain **ISO**. |

## 7.4 PID (Patient Identification) Segment Fields

The detailed field definitions below shall be conformed to by all HL7 messages communicating the MSH (message header) segment.

A summary table of usages, cardinalities and element names of all fields in the PID segment is provided in Section 5.4, "PID (Patient Identification) Segment."

### PID-2 Patient ID

The historical intent of this field is to contain an identifier for the patient at an institution or facility other than the institution or facility at which the event occurred. Previous to HL7 Version 2.3.1, it was referred to as "external ID." It is recommended that identifiers for the patient be sent in occurrences of *PID-3-patient identifier list* rather than in fields *PID-2-patient ID*, *PID-4-alternate patient ID-PID*, or *PID-19-SSN number-patient*, all of which were deprecated as of HL7 Version 2.3.1.

The data type of *PID-2-patient ID* is CX, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | R | | ID | The full, unique identifier value for the patient. |
| 2 | ST | X | | Check Digit | |
| 3 | ID | X | 0061 | Code Identifying the Check Digit Scheme Employed | |
| 4 | HD | RE | 0063 | Assigning Authority | The system, organization, agency or department that created this patient identifier. |
| 5 | IS | RE | 0203 | Identifier Type Code | What kind of identifier this is: local, facility, state or national, Social Security, Medicare, etc. |
| 6 | HD | RE | | Assigning Facility | The place or location where the identifier was first assigned to the patient. |

### PID-3 Patient Identifier List

This field, which allows for up to 99 occurrences, contains at least the identifier for the patient at the institution or facility at which the event occurred. It is recommended that any other identifiers for the patient be sent in additional occurrences of *PID-3-patient identifier list* rather than in fields *PID-2-patient ID*, *PID-4-alternate patient ID-PID*, or *PID-19-SSN number-patient*, all of which were deprecated as of HL7 Version 2.3.1.

The data type of *PID-3-patient identifier list* is CX, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | R | | ID | The full, unique identifier value for the patient. |
| 2 | ST | X | | Check Digit | Restatement of the check digit portion, if any, of the ID number in component 1. |
| 3 | ID | X | 0061 | Code Identifying the Check Digit Scheme Employed | |
| 4 | HD | RE | 0063 | Assigning Authority | The system, organization, agency or department that created this patient identifier. |
| 5 | IS | RE | 0203 | Identifier Type Code | What kind of identifier this is: local, facility, state or national, Medicare, etc. |
| 6 | HD | RE | | Assigning Facility | The place or location where the identifier was first assigned to the patient. |

### PID-4 Alternate Patient ID – PID

The historical intent of this field is to contain one or more identifiers for the patient other than the principal patient identifier carried in PID-3. It is recommended that identifiers for the patient be sent in occurrences of *PID-3-patient identifier list* rather than in fields *PID-2-patient ID, PID-4-alternate patient ID-PID,* or *PID-19-SSN number-patient,* all of which were deprecated as of HL7 Version 2.3.1.

The data type of *PID-4-alternate patient ID-PID* is CX, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | R | | ID | The full, unique identifier value for the patient. |
| 2 | ST | X | | Check Digit | |
| 3 | ID | X | 0061 | Code Identifying the Check Digit Scheme Employed | |
| 4 | HD | RE | 0063 | Assigning Authority | The system, organization, agency or department that created this patient identifier. |
| 5 | IS | RE | 0203 | Identifier Type Code | What kind of identifier this is: local, facility, state or national, Social Security, Medicare, etc. |
| 6 | HD | RE | | Assigning Facility | The place or location where the identifier was first assigned to the patient. |

### PID-5 Patient Name

This field contains all of the names by which the patient is known in the system that generated the current message instance. Each name is sent in a separate repetition of *PID-5-patient name*.

If known, the patient's legal name is to be sent in the first repetition of *PID-5-patient name*. If the patient's legal name is not known, the first repetition of *PID-5-patient name* is to be left empty.

The data type of *PID-5-patient name* is XPN, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | R | | Family name & last name prefix | Last name of the patient. If the last name contains a prefix such as ***de*** or ***von*** that is excluded from alphabetization in the locale of the sending system, the last name prefix is restated in the second subcomponent of this component. |
| 2 | ST | R | | Given Name | First name of the patient. |
| 3 | ST | RE | | Middle Initial or Name | Multiple middle initials or names are separated by spaces. |
| 4 | ST | RE | | Suffix | *E.g.*, JR or III. |
| 5 | ST | RE | | Prefix | *E.g.*, DR. |
| 6 | IS | RE | 0360 | Degree | |
| 7 | ID | RE | 0200 | Name Type Code | |
| 8 | ID | X | 4000 | Name Representation Code | |

### PID-7 Date/Time of Birth

This field, whose data type is TS, contains the date and time of the patient's birth as precisely as is recorded on the system from which the current message instance was sent. Minimum required precision is YYYYMMDD or YYYYMMDDMMSS.

### PID-8 Sex

This field contains the administrative sex of the patient. Its value is taken from HL7 Table 0001, *Sex*.

### PID-10 Race

This field contains a code and text specifying the patient's race. The data type of this field is CE, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | Identifier | The standard code for the patient's race, preferably from the CDC race code set. |
| 2 | ST | RE | | Text | The human-readable term for the patient's race, which must correspond to the value in Component 1 (Identifier) if any. |
| 3 | ST | RE | | Name of Coding System | Name (usually abbreviated) of the code set from which the code in Component 1 and the text in Component 2 are taken. |
| 4 | ST | X | | Alternate Identifier | |
| 5 | ST | X | | Alternate Text | |
| 6 | ST | X | | Name of Alternate Coding System | |

### PID-11 Patient Address

This field contains the location of the patient's residence or mail delivery location. The data type of this field is XAD, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | Street Address | If the street address portion of the patient's address is one line, it is sent in this component. If the street address portion of the patient's address is two lines, the first line is sent in this component. |
| 2 | ST | RE | | Other Designation | If the street address portion of the patient's address is one line, this component is empty. If the street address portion of the patient's address is two lines, the second line is sent in this component. |
| 3 | ST | RE | | City | |
| 4 | ST | RE | | State or Province | |
| 5 | ST | RE | | ZIP or Postal Code | |

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 6 | ID | RE | | Country | If sent, this shall be a code from the ISO 3166 table of three-character country designators. |
| 7 | ID | RE | 0190 | Address Type | |
| 8 | ST | RE | | Other Geographic Designation | |
| 9 | IS | RE | 0289 | County/Parish Code | |
| 10 | IS | RE | 0288 | Census Tract | |
| 11 | ID | RE | 4000 | Address Representation Code | |

### PID-13 Phone Number – Home

This field contains the telephone number of the patient's residence. The data type of this field is XTN, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | R | | [NNN] [(999)]999-999 [X99999] [B99999] [C any text] | The body of the telephone number can be sent in this component. Preferred usage is to break out the components of the telephone number in components 5-9. |
| 2 | ID | RE | 0201 | Telecommunications use code | |
| 3 | ID | RE | 0202 | Telecommunications equipment type | |
| 4 | ST | RE | | Email Address | |
| 5 | NM | RE | | Country Code | |
| 6 | NM | RE | | Area/City Code | |
| 7 | NM | RE | | Phone Number | |
| 8 | NM | RE | | Extension | |

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 9 | ST | RE | | Any Text | |

**PID-14 Phone Number – Business**

This field contains the telephone number of the patient's workplace. The data type of this field is XTN, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | R | | [NNN] [(999)]999-999 [X99999] [B99999] [C any text] | The body of the telephone number can be sent in this component. Preferred usage is to break out the components of the telephone number in components 5-9. |
| 2 | ID | RE | 0201 | Telecommunications use code | |
| 3 | ID | RE | 0202 | Telecommunications equipment type | |
| 4 | ST | RE | | Email Address | |
| 5 | NM | RE | | Country Code | |
| 6 | NM | RE | | Area/City Code | |
| 7 | NM | RE | | Phone Number | |
| 8 | NM | RE | | Extension | |
| 9 | ST | RE | | Any Text | |

**PID-19 SSN Number - Patient**

This field contains the last four digits of the patient's Social Security number. Data in this field are used to improve the quality of matching between records containing similar patient identification criteria. This can be the last four of the SS# or in full nine digit format XXX-XX-XXXX.

**PID-20 Driver's License Number – Patient**

This field contains the patient's driver's license number if available. The data type of this field is DLN, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | License Number | |
| 2 | IS | RE | 0333 | Issuing State, Province, Country | If a country code is sent, this shall be a code from the ISO 3166 table of three-character country designators. |
| 3 | DT | RE | | Expiration Date | |

**PID-21 Mother's Identifier**

This field contains identifiers for the patient's mother. It must be populated if the age of the patient is 1 month or less.

The data type of *PID-21-mother's identifier* is CX, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | R | | ID | The full, unique identifier value for the patient. |
| 2 | ST | X | | Check Digit | Restatement of the check digit portion, if any, of the ID number in component 1. |
| 3 | ID | X | 0061 | Code Identifying the Check Digit Scheme Employed | |
| 4 | HD | RE | 0063 | Assigning Authority | The system, organization, agency or department that created this patient identifier. |
| 5 | IS | RE | 0203 | Identifier Type Code | What kind of identifier this is: local, facility, state or national, Medicare, etc. |
| 6 | HD | RE | | Assigning Facility | The place or location where the identifier was first assigned to the patient. |

**PID-22 Ethnic Group**

This field contains a code and text specifying the patient's membership, or lack thereof, in a particular ethnic group. The data type of this field is CE, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | Identifier | The standard code specifying the patient's membership, or lack thereof, in an ethnic group, preferably from the CDC race code set. |
| 2 | ST | RE | | Text | The human-readable term for the patient's ethnic group, which must correspond to the value in Component 1 (Identifier) if any. |
| 3 | ST | RE | | Name of Coding System | Name (usually abbreviated) of the code set from which the code in Component 1 and the text in Component 2 are taken. |
| 4 | ST | X | | Alternate Identifier | |
| 5 | ST | X | | Alternate Text | |
| 6 | ST | X | | Name of Alternate Coding System | |

**PID-24 Multiple Birth Indicator**

If it is known whether the patient (generally a neonate) is one of a number of multiple concurrent births (*e.g.*, twins or triplets), this field, whose data type is ID, contains a value from HL7 Table 0136, *Yes/No Indicator*: **Y** if the patient is part of a multiple birth or **N** if the patient is not part of a multiple birth.

**PID-25 Birth Order**

If the value of *PID-24-multiple birth indicator* is **Y**, this field, whose data type is NM, contains an integer indicating the order of this patient in the multiple birth: **1** if the first born, **2** if the second born, etc.

**PID-29 Patient Death Date and Time**

If the patient is deceased, this field, whose data type is TS, contains the date and time of the patient's death as precisely as is recorded on the system from which the current message instance was sent.

**PID-30 Patient Death Indicator**

This field, whose data type is ID, indicates whether the patient is deceased. Its value is taken from HL7-defined Table 0136, *Yes/no indicator*.

## 7.5 PD1 (Additional Demographics) Segment Fields

The detailed field definitions below shall be conformed to by all HL7 messages communicating the PD1 (additional demographics) segment.

A summary table of usages, cardinalities and element names of all fields in the PD1 segment is provided in Section 5.5, "PD1 (Additional Demographics) Segment."

**PD1-4 Patient Primary Care Provider Name & ID No.**

If the patient's primary care provider is known, identifying information for that provider is sent in this field.

The data type of this field is XCN, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | ID Number | The full, unique identifier value for the provider. Use of NPI is recommended. |
| 2 | ST | R | | Family name & last name prefix | Last name of the provider. If the last name contains a prefix such as ***de*** or ***von*** that is excluded from alphabetization in the locale of the sending system, the last name prefix is restated in the second subcomponent of this component. |
| 3 | ST | RE | | Given Name | First name of the provider. |
| 4 | ST | RE | | Middle Initial or Name | Multiple middle initials or names are separated by spaces. |
| 5 | ST | RE | | Suffix | *E.g.*, JR or III. |
| 6 | ST | RE | | Prefix | *E.g.*, DR. |
| 7 | IS | RE | 0360 | Degree | |
| 8 | IS | RE | 0297 | Source Table | |
| 9 | HD | RE | 0363 | Assigning Authority | The creator of the authoritative identification record from which this provider's ID number and name data are derived. |
| 10 | ID | RE | 0200 | Name Type Code | |
| 11 | ST | RE | | Identifier Check Digit | Restatement of the check digit portion, if any, of the ID number in component 1. |

## 7.6 PV1 (Patient Visit) Segment Fields

The detailed field definitions below shall be conformed to by all HL7 messages communicating the PV1 (patient visit) segment.

A summary table of usages, cardinalities and element names of all fields in the PV1 segment is provided in Section 5.6, "PV1 (Patient Visit) Segment."

### PV1-2 Patient Class

This field designates the type of visit, such as inpatient (**I**) or outpatient (**O**) for which the patient is registered.

The data type of field *PV1-2-patient class* is IS. It contains a value from user-defined Table 0004, *Patient Class*.

### PV1-3 Assigned Patient Location

For an inpatient, this field designates the patient's location in the medical center. The data type of this field is PL, which is defined as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | IS | RE | 0302 | Point of Care | Entries in user-defined Table 0302 are defined at the medical center. No suggested values are provided by HL7. |
| 2 | IS | RE | 0303 | Room | Entries in user-defined Table 0303 are defined at the medical center. No suggested values are provided by HL7. |
| 3 | IS | RE | 0304 | Bed | Entries in user-defined Table 0304 are defined at the medical center. No suggested values are provided by HL7. |
| 4 | HD | RE | | Facility | |
| 5 | IS | RE | 0306 | Location Status | |
| 6 | IS | RE | 0305 | Person Location Type | |
| 7 | IS | RE | 0307 | Building | Entries in user-defined Table 0307 are defined at the medical center. No suggested values are provided by HL7. |
| 8 | IS | RE | 0308 | Floor | Entries in user-defined Table 0308 are defined at the medical center. No suggested values are provided by HL7. |

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 9 | ST | RE | | Location Description | |

### PV1-4 Admission Type

For an inpatient, this field indicates the circumstances under which the patient was or will be admitted.

The data type of field *PV1-4-admission type* is IS. It contains a value from user defined Table 0007, *Admission Type*.

### PV1-7 Attending Doctor

This field contains information for a single attending physician. Repetitions of this field may contain identifying information for the same physician in different master files or source systems. However, this field is not to be used to transmit information for multiple attending physicians.

The data type of this field is XCN, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | ID Number | The full, unique identifier value for the provider. Use of NPI is recommended. |
| 2 | ST | R | | Family name & last name prefix | Last name of the provider. If the last name contains a prefix such as ***de*** or ***von*** that is excluded from alphabetization in the locale of the sending system, the last name prefix is restated in the second subcomponent of this component. |
| 3 | ST | RE | | Given Name | First name of the provider. |
| 4 | ST | RE | | Middle Initial or Name | Multiple middle initials or names are separated by spaces. |
| 5 | ST | RE | | Suffix | *E.g.*, JR or III. |
| 6 | ST | RE | | Prefix | *E.g.*, DR. |
| 7 | IS | RE | 0360 | Degree | |
| 8 | IS | R | 0297 | Source Table | Always valued **0010** to designate user-defined Table 0010, *Physician ID,* as the source of values for this field. |

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 9 | HD | RE | 0363 | Assigning Authority | The creator of the authoritative identification record from which this provider's ID number and name data are derived. |
| 10 | ID | RE | 0200 | Name Type Code | |
| 11 | ST | RE | | Identifier Check Digit | Restatement of the check digit portion, if any, of the ID number in component 1. |

### PV1-8 Referring Doctor

This field contains information for a single referring physician. Repetitions of this field may contain identifying information for the same physician in different master files or source systems. However, this field is not to be used to transmit information for multiple referring physicians.

The data type of this field is XCN, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | ID Number | The full, unique identifier value for the provider. Use of NPI is recommended. |
| 2 | ST | R | | Family name & last name prefix | Last name of the provider. If the last name contains a prefix such as ***de*** or ***von*** that is excluded from alphabetization in the locale of the sending system, the last name prefix is restated in the second subcomponent of this component. |
| 3 | ST | RE | | Given Name | First name of the provider. |
| 4 | ST | RE | | Middle Initial or Name | Multiple middle initials or names are separated by spaces. |
| 5 | ST | RE | | Suffix | *E.g.*, JR or III. |
| 6 | ST | RE | | Prefix | *E.g.*, DR. |
| 7 | IS | RE | 0360 | Degree | |
| 8 | IS | R | 0297 | Source Table | Always valued **0010** to designate user-defined Table 0010, *Physician ID,* as the source of values for this field. |
| 9 | HD | RE | 0363 | Assigning Authority | The creator of the authoritative identification record from which this provider's ID number and name data are derived. |

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 10 | ID | RE | 0200 | Name Type Code | |
| 11 | ST | RE | | Identifier Check Digit | Restatement of the check digit portion, if any, of the ID number in component 1. |

### PV1-9 Consulting Doctor

This field contains information for one or more consulting physicians. Repetitions of this field may contain identifying information for the same or different physicians in different master files or source systems.

The data type of this field is XCN, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | ID Number | The full, unique identifier value for the provider. Use of NPI is recommended. |
| 2 | ST | R | | Family name & last name prefix | Last name of the provider. If the last name contains a prefix such as ***de*** or ***von*** that is excluded from alphabetization in the locale of the sending system, the last name prefix is restated in the second subcomponent of this component. |
| 3 | ST | RE | | Given Name | First name of the provider. |
| 4 | ST | RE | | Middle Initial or Name | Multiple middle initials or names are separated by spaces. |
| 5 | ST | RE | | Suffix | *E.g.*, JR or III. |
| 6 | ST | RE | | Prefix | *E.g.*, DR. |
| 7 | IS | RE | 0360 | Degree | |
| 8 | IS | R | 0297 | Source Table | Always valued **0010** to designate user-defined Table 0010, *Physician ID,* as the source of values for this field. |
| 9 | HD | RE | 0363 | Assigning Authority | The creator of the authoritative identification record from which this provider's ID number and name data are derived. |
| 10 | ID | RE | 0200 | Name Type Code | |

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 11 | ST | RE | | Identifier Check Digit | Restatement of the check digit portion, if any, of the ID number in component 1. |

### PV1-10 Hospital Service

This field, whose data type is IS, contains a code for the treatment or type of surgery that was assigned to the patient with the most recent patient movement. When present, it is populated with a value from user-defined Table 0069, *Hospital Service*.

### PV1-14 Admit Source

This field, whose data type is IS, contains a code indicating from where the patient intake occurred. When present, it is populated with a value from user-defined Table 0023, *Admit Source*.

### PV1-17 Admitting Doctor

This field contains information for a single admitting physician. Repetitions of this field may contain identifying information for the same physician in different master files or source systems. However, this field is not to be used to transmit information for multiple admitting physicians.

The data type of this field is XCN, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | ID Number | The full, unique identifier value for the provider. Use of NPI is recommended. |
| 2 | ST | R | | Family name & last name prefix | Last name of the provider. If the last name contains a prefix such as ***de*** or ***von*** that is excluded from alphabetization in the locale of the sending system, the last name prefix is restated in the second subcomponent of this component. |
| 3 | ST | RE | | Given Name | First name of the provider. |
| 4 | ST | RE | | Middle Initial or Name | Multiple middle initials or names are separated by spaces. |
| 5 | ST | RE | | Suffix | *E.g.*, JR or III. |
| 6 | ST | RE | | Prefix | *E.g.*, DR. |

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 7 | IS | RE | 0360 | Degree | |
| 8 | IS | R | 0297 | Source Table | Always valued **0010** to designate user-defined Table 0010, *Physician ID,* as the source of values for this field. |
| 9 | HD | RE | 0363 | Assigning Authority | The creator of the authoritative identification record from which this provider's ID number and name data are derived. |
| 10 | ID | RE | 0200 | Name Type Code | |
| 11 | ST | RE | | Identifier Check Digit | Restatement of the check digit portion, if any, of the ID number in component 1. |

### PV1-18 Patient Type

This field, whose data type is IS, contains a site-specific code specifying the patient type. When present, it is populated with a value from user-defined Table 0018, *Patient Type*.

### PV1-36 Discharge Disposition

This field, whose data type is IS, contains a site-specific code indicating the status and/or location (*e.g.*, home, expired) applicable to the patient at the time of discharge. When present, it is populated with a value from user-deined Table 0112, *Discharge Disposition*.

### PV1-37 Discharged to Location

This field, when populated, contains the identifier of the facility to which the patient was discharged.

The data type of field *PV1-37-discharged to location* is CM. Its components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | IS | RE | 0113 | Discharge Location | |
| 2 | TS | RE | | Effective Date | |

**PV1-44 Admit Date/Time**

When present, this field, whose data type is TS, contains the date and time when the patient was admitted (if the patient is an inpatient) or when the current encounter began (if the patient is an outpatient).

**PV1-45 Discharge Date/Time**

When present, this field, whose data type is TS, contains the date and time when the patient was discharged (if the patient was an inpatient and has been discharged) or when the current encounter ended (if the patient was an outpatient and the current encounter is complete).

## 7.7 OBX (Observation / Result) Segment Fields

The detailed field definitions below shall be conformed to by all HL7 messages communicating the OBX (observation / result) segment.

A summary table of usages, cardinalities and element names of all fields in the OBX segment is provided in Section 5.7, "OBX (Observation / Result) Segment."

### OBX-2 Value Type

This field, whose data type is ID, contains the data type of the information carried in field *OBX-5-observation value*.

When present, field *OBX-2-value type* is populated with a value from HL7 Table 0125, *Value Type*. This field shall be populated in all occurrences of the OBX segment except those in which field *OBX-11-Observation Result Status* is valued **X**, indicating that no value was obtained for the observation.

### OBX-3 Observation Identifier

This field contains a code that classifies the information carried in field *OBX-5-observation value*. The data type of field *OBX-3-observation identifier* is CE, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | Identifier | The standard code specifying the kind of information, preferably from the LOINC code set. For height and weight, this **must** be a LOINC code (either for reported or measured). |
| 2 | ST | RE | | Text | The human-readable term for the kind of information, which must correspond to the value in Component 1 (Identifier) if any. |
| 3 | ST | RE | | Name of Coding System | Name (usually abbreviated) of the code set from which the code in Component 1 and the text in Component 2 are taken. |
| 4 | ST | X | | Alternate Identifier | |
| 5 | ST | X | | Alternate Text | |
| 6 | ST | X | | Name of Alternate Coding System | |

### OBX-5 Observation Value

This field contains the actual value whose data type is given in field *OBX-2-value type* and whose classification is given in field *OBX-3-observation identifier*. Its formatting follows the

rules of the HL7 standard for the data type carried in OBX-2 and the HL7 version carried in field *MSH-12-version ID*.

### OBX-6 Units

This field contains the units of measure for the observation carried in field *OBX-5-observation value*. The data type of field *OBX-6-units* is CE, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | Identifier | The standard code specifying the units of measure, preferably from ISO Standard 2955-1983. |
| 2 | ST | RE | | Text | The human-readable term for the units of measure, which must correspond to the value in Component 1 (Identifier) if any. |
| 3 | ST | RE | | Name of Coding System | Name (usually abbreviated) of the code set from which the code in Component 1 and the text in Component 2 are taken. |
| 4 | ST | X | | Alternate Identifier | |
| 5 | ST | X | | Alternate Text | |
| 6 | ST | X | | Name of Alternate Coding System | |

### OBX-11 Observation Result Status

This field, whose data type is ID, indicates the processing or release stage of the observation. It is populated with a value from HL7 Table 0085, *Observation Result Status Codes Interpretation*.

### OBX-14 Date/Time of the Observation

This field, whose data type is TS, indicates the date and time when the observation occurred, as precisely as available from the system that sent the current message instance.

## 7.8 DG1 (Diagnosis Information) Segment Fields

The detailed field definitions below shall be conformed to by all HL7 messages communicating the DG1 (diagnosis information) segment.

A summary table of usages, cardinalities and element names of all fields in the DG1 segment is provided in Section 5.8, "DG1 (Diagnosis Information) Segment."

### DG1-2 Diagnosis Coding Method

This field indicates the coding system from which the code in field *DG1-3-diagnosis code-DG1* was obtained.

Field *DG1-2-diagnosis coding method,* whose data type is ID, has been deprecated by HL7 in favor of the third component (Name of Coding System) of DG1-3. If present, DG1-2 is populated with a value from HL7 Table 0053, *Diagnosis Coding Method*.

### DG1-3 Diagnosis Code – DG1

This field contains the symbolic term, such as an ICD-9 code, assigned to this diagnosis.

The data type of *DG1-3-diagnosis code* is CE, whose components are defined as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | Identifier | The standard code specifying the diagnosis. |
| 2 | ST | RE | | Text | The human-readable term for the diagnosis, which must correspond to the value in Component 1 (Identifier) if any. Use this component in preference to field *DG1-4-diagnosis description*, which has been deprecated by HL7. |
| 3 | ST | RE | | Name of Coding System | Name (usually abbreviated) of the code set from which the code in Component 1 and the text in Component 2 are taken. Use this component in preference to field *DG1-2-diagnosis coding method*, which has been deprecated by HL7. |
| 4 | ST | X | | Alternate Identifier | |
| 5 | ST | X | | Alternate Text | |
| 6 | ST | X | | Name of Alternate Coding System | |

### DG1-4 Diagnosis Description

This field contains the human-readable term for the diagnosis.

Field *DG1-4-diagnosis description*, whose data type is ST, has been deprecated by HL7 in favor of the second component (Text) of DG1-3.

### DG1-5 Diagnosis Date/Time

This field, whose data type is TS, indicates the date and time when the diagnosis was determined, as precisely as available from the system that sent the current message instance.

### DG1-6 Diagnosis Type

This field, whose data type is IS, contains a code indicating the stage of the diagnosis, such as admitting (**A**), working (**W**) or final (**F**). When present, it is populated from user-defined Table 0052, *Diagnosis Type*.

## 7.9 PR1 (Procedures) Segment Fields

The detailed field definitions below shall be conformed to by all HL7 messages communicating the PR1 (procedures) segment.

A summary table of usages, cardinalities and element names of all fields in the PR1 segment is provided in Section 5.9, "PR1 (Procedures) Segment."

### PR1-2 Procedure Coding Method

This field indicates the coding system from which the code in field *PR1-3-procedure code* was obtained.

Field *PR1-2-procedure coding method,* whose data type is ID, has been deprecated by HL7 in favor of the third component (Name of Coding System) of PR1-3. If present, PR1-2 is populated with a value from HL7 Table 0089, *Procedure Coding*.

### PR1-3 Procedure Code

This field contains the symbolic term, such as a CPT code, assigned to this procedure.

The data type of *PR1-3-procedure code* is CE, whose components are defined as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | Identifier | The standard code specifying the procedure. Populated with a value from user-defined Table 0088, *Procedure Code*. |
| 2 | ST | RE | | Text | The human-readable term for the procedure, which must correspond to the value in Component 1 (Identifier) if any. Use this component in preference to field *PR1-4-procedure description*, which has been deprecated by HL7. |
| 3 | ST | RE | | Name of Coding System | Name (usually abbreviated) of the code set from which the code in Component 1 and the text in Component 2 are taken. Use this component in preference to field *PR1-2-procedure coding method*, which has been deprecated by HL7. |
| 4 | ST | X | | Alternate Identifier | |
| 5 | ST | X | | Alternate Text | |
| 6 | ST | X | | Name of Alternate Coding System | |

### PR1-4 Procedure Description

This field contains the human-readable term for the procedure.

Field *PR1-4-procedure description*, whose data type is ST, has been deprecated by HL7 in favor of the second component (Text) of PR1-3.

### PR1-5 Procedure Date/Time

This field, whose data type is TS, indicates the date and time when the procedure was performed, as precisely as available from the system that sent the current message instance.

### PR1-8 Anesthesiologist

This field contains information for a single anesthesiologist associated with the procedure. Repetitions of this field may contain identifying information for the same anesthesiologist in different master files or source systems. However, this field is not to be used to transmit information for multiple anesthesiologists.

Field *PR1-8-anesthesiologist* has been deprecated by HL7 in favor of the ROL segment.

The data type of this field is XCN, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | ID Number | The full, unique identifier value for the provider. |
| 2 | ST | R | | Family name & last name prefix | If the last name contains a prefix such as ***de*** or ***von*** that is excluded from alphabetization in the locale of the sending system, the last name prefix is restated in the second subcomponent of this component. |
| 3 | ST | RE | | Given Name | |
| 4 | ST | RE | | Middle Initial or Name | Multiple middle initials or names are separated by spaces. |
| 5 | ST | RE | | Suffix | *E.g.*, JR or III. |
| 6 | ST | RE | | Prefix | *E.g.*, DR. |
| 7 | IS | RE | 0360 | Degree | |
| 8 | IS | R | 0297 | Source Table | Always valued **0010** to designate user-defined Table 0010, *Physician ID,* as the source of values for this field. |

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 9 | HD | RE | 0363 | Assigning Authority | The creator of the authoritative identification record from which this provider's ID number and name data are derived. |
| 10 | ID | RE | 0200 | Name Type Code | |
| 11 | ST | RE | | Identifier Check Digit | Restatement of the check digit portion, if any, of the ID number in component 1. |

## PR1-11 Surgeon

This field contains information for a single surgeon associated with the procedure. Repetitions of this field may contain identifying information for the same surgeon in different master files or source systems. However, this field is not to be used to transmit information for multiple surgeons.

Field *PR1-8-surgeon* has been deprecated by HL7 in favor of the ROL segment.

The data type of this field is XCN, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | ID Number | The full, unique identifier value for the provider. |
| 2 | ST | R | | Family name & last name prefix | If the last name contains a prefix such as ***de*** or ***von*** that is excluded from alphabetization in the locale of the sending system, the last name prefix is restated in the second subcomponent of this component. |
| 3 | ST | RE | | Given Name | |
| 4 | ST | RE | | Middle Initial or Name | Multiple middle initials or names are separated by spaces. |
| 5 | ST | RE | | Suffix | *E.g.*, JR or III. |
| 6 | ST | RE | | Prefix | *E.g.*, DR. |
| 7 | IS | RE | 0360 | Degree | |
| 8 | IS | R | 0297 | Source Table | Always valued **0010** to designate user-defined Table 0010, *Physician ID,* as the source of values for this field. |

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 9 | HD | RE | 0363 | Assigning Authority | The creator of the authoritative identification record from which this provider's ID number and name data are derived. |
| 10 | ID | RE | 0200 | Name Type Code | |
| 11 | ST | RE | | Identifier Check Digit | Restatement of the check digit portion, if any, of the ID number in component 1. |

## 7.10 IN1 (Insurance) Segment Fields

The detailed field definitions below shall be conformed to by all HL7 messages communicating the IN1 (insurance) segment.

A summary table of usages, cardinalities and element names of all fields in the IN1 segment is provided in Section 5.10, "IN1 (Insurance) Segment."

### IN1-1 Set ID – IN1

This is the ordinal number of this occurrence of the AL1 segment within the current message instance. The first occurrence is labeled **1**, the second **2**, and so on.

*If the patient is paying out of pocket rather than using insurance, then, in the first occurrence of the IN1 segment, the term* **SELF-PAY** *must appear in the second component of IN1-2-Insurance Plan ID.* This is necessary to suppress the transmission of message information to insurance carriers.

### IN1-2 Insurance Plan ID

This field contains a unique identifier for the insurance plan.

The data type of this field is CE, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | Identifier | The symbolic identifier of the insurance plan. |
| 2 | ST | RE | | Text | The human-readable name of the insurance plan, which must correspond to the value in Component 1 (Identifier) if any. *If the patient is paying out of pocket rather than using insurance, then, in the first occurrence of the IN1 segment, the term* **SELF-PAY** *must appear in this component.* This is necessary to suppress the transmission of message information to insurance carriers. |
| 3 | ST | X | | Name of Coding System | |
| 4 | ST | X | | Alternate Identifier | |
| 5 | ST | X | | Alternate Text | |

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 6 | ST | X | | Name of Alternate Coding System | |

### IN1-3 Insurance Company ID

This field contains a unique identifier for the insurance company. MiHIN will work with the ADT sending organizations to map contents of *IN1-3-insurance company ID* to insurance companies across the state for accurate delivery.

The data type of this field is CX, whose components are as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | R | | ID | The full, unique identifier value for the insurance company. |
| 2 | ST | X | | Check Digit | Restatement of the check digit portion, if any, of the ID number in component 1. |
| 3 | ID | X | 0061 | Code Identifying the Check Digit Scheme Employed | |
| 4 | HD | RE | 0063 | Assigning Authority | The system, organization, agency or department that created this insurance company identifier. |
| 5 | IS | RE | 0203 | Identifier Type Code | Indicates that this is an insurance company identifier and, if applicable, more precisely indicates what kind of insurance company identifier this is: local, facility, state or national, Medicare, etc. |
| 6 | HD | RE | | Assigning Facility | The place or location where the identifier was first assigned to the patient. |

### IN1-4 Insurance Company Name

This field, whose data type is XON, contains name and other identifying information for the insurance company. MiHIN will work with the ADT sending organizations to map contents of *IN1-4-insurance company name* to insurance companies across the state for accurate delivery.

Its components are defined as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | R | | Organization Name | Name of the insurance company. |
| 2 | IS | X | 0204 | Organization Name Type Code | |
| 3 | NM | X | | ID Number | |
| 4 | NM | X | | Check Digit | |
| 5 | ID | X | 0061 | Code Identifying the Check Digit Scheme Employed | |
| 6 | HD | X | 0363 | Assigning Authority | |
| 7 | IS | X | 0203 | Identifier Type Code | |
| 8 | HD | X | | Assigning Facility ID | |
| 9 | ID | X | | Name Representation Code | |

**IN1-36 Policy Number**

This field, whose data type is ST, contains the individual policy number of the insured to uniquely identify this patient's plan. For special types of insurance numbers, there are also special fields in the IN2 segment for Medicaid, Medicare, Champus (i.e., *IN2-8-Medicaid case number*, *IN2-6-Medicare health ins card number*, *IN2-10-Military ID number*). But HL7 recommends that this field (*IN1-36-policy number*) be filled even when the patient's insurance number is also passed in one of these other fields.

## 7.11 NPU (Non-Patient Update) Segment Fields

The detailed field definitions below shall be conformed to by all HL7 messages communicating the NPU (non-patient update) segment.

A summary table of usages, cardinalities and element names of all fields in the NPU segment is provided in Section 5.11, "NPU (Non-Patient Update) Segment."

### NPU-1 Bed Location

This field designates the location of the bed in the medical center. The data type of this field is PL, which is defined as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | IS | RE | 0302 | Point of Care | Entries in user-defined Table 0302 are defined at the medical center. No suggested values are provided by HL7. |
| 2 | IS | RE | 0303 | Room | Entries in user-defined Table 0303 are defined at the medical center. No suggested values are provided by HL7. |
| 3 | IS | RE | 0304 | Bed | Entries in user-defined Table 0304 are defined at the medical center. No suggested values are provided by HL7. |
| 4 | HD | RE | | Facility | |
| 5 | IS | RE | 0306 | Location Status | |
| 6 | IS | RE | 0305 | Person Location Type | |
| 7 | IS | RE | 0307 | Building | Entries in user-defined Table 0307 are defined at the medical center. No suggested values are provided by HL7. |
| 8 | IS | RE | 0308 | Floor | Entries in user-defined Table 0308 are defined at the medical center. No suggested values are provided by HL7. |
| 9 | ST | RE | | Location Description | |

### NPU-2 Bed Status

This field, whose data type is IS, indicates the occupancy status of the bed. It is populated with a value from user-defined Table 0116, *Bed Status*.

## 7.12 MSA (Message Acknowledgment) Segment Fields

The detailed field definitions below shall be conformed to by all HL7 messages communicating the MSA (message acknowledgment) segment.

A summary table of usages, cardinalities and element names of all fields in the MSA segment is provided in Section 5.12, "MSA (Message Acknowledgment) Segment."

**MSA-1 Acknowledgment Code**

This field, whose data type is ID, indicates whether the receiver was able to persist and process the message successfully. It is populated with a value from HL7-defined Table 0008, *Acknowledgment Code*.

**MSA-2 Message Control ID**

This field, whose data type is ST, contains the value of *MSH-10-message control ID* in the message received from the originating system. It allows an association to be maintained between this acknowledgment response and the message it is acknowledging.

## 7.13 ERR (Error) Segment Fields

The detailed field definitions below shall be conformed to by all HL7 messages communicating the ERR (error) segment.

A summary table of usages, cardinalities and element names of all fields in the ERR segment is provided in Section 5.13, "ERR (Error) Segment."

### ERR-1 Error Code and Location

Each occurrence of this field designates at what segment, field, repetition and/or component in the originating message an error occurred, and the nature of the error.

Field *ERR-1-error code and location* was deprecated in HL7 Version 2.5 in favor of fields ERR-2 through ERR-12, which allow errors to be specified with greater precision and detail. However, ERR-1 must be present if the HL7 version as specified in *MSH-12-version ID* is prior to 2.5.

The data type of this field is ELD, which is defined as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | RE | | Segment ID | Present if and only if the error corresponded to an element of the originating message. |
| 2 | NM | CE | | Segment Sequence | If and only if component 1 is sent, this component indicates to what occurrence of the segment the error corresponded. It should contain the value of the Set ID field (if present, generally field 1) of the segment. |
| 3 | NM | CE | | Field Position | If and only if component 1 is sent, this component indicates to what field (if any) the error corresponded. |
| 4 | CE | R | 0357 | Code Identifying Error | This component is sent as three subcomponents, separated by the subcomponent separator. The first component is the appropriate code from Table 0357, *Message Error Condition Codes*; the second component is the corresponding description from Table 0357; the third component is the string literal **HL70357**. |

### ERR-2 Error Location

This field indicates the location(s) in the received message at which the indicated error occurred. For errors occurring at one or more specific locations, field *ERR-2-error location* must be present if the HL7 version as specified in field *MSH-12-version ID* is 2.5 or later.

The data type of this field is ERL, which is defined as follows.

| Cmp | DT | Usage | TBL# | Element Name | Comments |
|---|---|---|---|---|---|
| 1 | ST | R | | Segment ID | |
| 2 | NM | R | | Segment Sequence | This component indicates to what occurrence of the segment the error corresponded. It should contain the value of the Set ID field, if present. If the error corresponds to a segment that contains no Set ID field and occurs only once, this component should contain **1**. |
| 3 | NM | CE | | Field Position | This component indicates to what field (if any) the error corresponded. |
| 4 | NM | CE | | Field Repetition | If component 3 is populated and the element at the field position indicated by component 3 contains multiple occurrences, this component contains an integer corresponding to the ordinal occurrence in which the error occurred. |
| 5 | NM | CE | | Component Number | If component 3 is populated and the element at the field position indicated by component 3 contains multiple components, this component contains an integer corresponding to the ordinal position of the component in which the error occurred. |
| 6 | NM | CE | | Sub-Component Number | If component 5 is populated and the element at the component position indicated by component 5 contains multiple subcomponents, this component contains an integer corresponding to the ordinal position of the subcomponent in which the error occurred. |

### ERR-3 HL7 Error Code

This field, whose data type is CNE, contains a code specifying the nature of the error. It must be present if the HL7 version indicated in field *MSH-12-version ID* is 2.5 or later.

The value in this field is taken from HL7 Table 0357, *Message Error Condition Codes.*

### ERR-4 Severity

This field, whose data type is ID, contains a code specifying whether the error is informational, warning or fatal. It must be present if the HL7 version indicated in field MSH-12-version ID is 2.5 or later.

The value in this field is taken from HL7 Table 0516, *Error Severity*.

# Appendix A: HL7 Vocabulary Tables

The following tables are defined for use in fields, components and subcomponents of data types ID, IS and CE whose values are derived from HL7-defined tables or user-defined tables published by HL7. Each table below describes the value source for the table and the data elements to which the table applies, and lists values that shall be recognized by conformant sending and receiving applications. Values derived from tables not listed in this section shall be used according to the rules published in the HL7 standard for such tables and the data types of the elements in which they are transmitted.

Appendix B discusses the use of externally defined vocabularies not published by HL7.

## Table 1: Sex

Field *PID-8-sex* shall contain one of the following values.

| Value | Description | Comment |
|---|---|---|
| M | Male | |
| F | Female | |
| O | Other | |
| U | Unknown | |

## Table 0003: Event Type

This table provides HL7-defined values to be sent in component 2 of field *MSH-9-message type.*

| Value | Description | Comment |
|---|---|---|
| A01 | ADT/ACK – Admit/visit notification | |
| A02 | ADT/ACK – Transfer a patient | |
| A03 | ADT/ACK – Discharge/end visit | |
| A04 | ADT/ACK – Register a patient | |
| A05 | ADT/ACK – Pre-admit a patient | |
| A06 | ADT/ACK – Change an outpatient to an inpatient | |
| A07 | ADT/ACK – Change an inpatient to an outpatient | |
| A08 | ADT/ACK – Update patient information | |
| A09 | ADT/ACK – Patient departing – tracking | |
| A10 | ADT/ACK – Patient arriving – tracking | |
| A11 | ADT/ACK – Cancel admit/visit notification | |
| A12 | ADT/ACK – Cancel transfer | |
| A13 | ADT/ACK – Cancel discharge/end visit | |

| | |
|---|---|
| A14 | ADT/ACK – Pending admit |
| A15 | ADT/ACK – Pending transfer |
| A17 | ADT/ACK – Swap patients |
| A20 | ADT/ACK – Bed status update |
| A21 | ADT/ACK – Patient goes on a "leave of absence" |
| A22 | ADT/ACK – Patient returns from a "leave of absence" |
| A23 | ADT/ACK – Delete a patient record |
| A24 | ADT/ACK – Link patient information |
| A25 | ADT/ACK – Cancel pending discharge |
| A26 | ADT/ACK – Cancel pending transfer |
| A27 | ADT/ACK – Cancel pending admit |
| A29 | ADT/ACK – Delete person information |
| A32 | ADT/ACK – Cancel patient arriving – tracking |
| A33 | ADT/ACK – Cancel patient departing – tracking |
| A37 | ADT/ACK – Unlink patient information |

## Table 0004: Patient Class

This table provides HL7-suggested values to be sent in field *PV1-2-patient class*.

| Value | Description | Comment |
|---|---|---|
| E | Emergency | |
| I | Inpatient | |
| O | Outpatient | |
| P | Preadmit | |
| R | Recurring patient | |
| B | Obstetrics | |

## Table 0005: Race

This table provides CDC-defined values to be sent in field *PID-10-race*.

| Value | Description | Comment |
|---|---|---|
| 1002-5 | American Indian or Alaska Native | |
| 2028-9 | Asian | |
| 2054-5 | Black or African American | |
| 2076-8 | Native Hawaiian or Other Pacific Islander | |
| 2131-1 | Other Race | |
| 2106-3 | White | |

## Table 0007: Admission Type

This table provides HL7-suggested values to be sent in field *PV1-4-admission type*.

| Value | Description | Comment |
|---|---|---|
| A | Accident | |
| E | Emergency | |
| L | Labor and Delivery | |
| R | Routine | |

## Table 0008: Acknowledgment Code

This table provides HL7-defined values to be sent in field *MSA-1- acknowledgment code*.

| Value | Description | Comment |
|---|---|---|
| AA | Application Accept | No error. |
| AE | Application Error | An error having to do with the content of a segment, field, component or subcomponent of the message (except for those fields listed under AR below). |
| AR | Application Reject | An error having to do with the content of field *MSH-9-message type*, *MSH-11-processing ID*, or *MSH-12-version ID*; or an error unrelated to the message content, such as a system, program or queue failure. |

## Table 0010: Physician ID

Values to be sent in the following fields shall be defined by the sending site:

- *PD1-4-patient primary care provider name & ID no.*
- *PV1-7-attending doctor*
- *PV1-8-referring doctor*
- *PV1-9-consulting doctor*
- *PV1-17-admitting doctor*
- *PR1-8-anesthesiologist*
- *PR1-11-surgeon*

## Table 0018: Patient Type

Values to be sent in field *PV1-18-patient type* shall be defined by the sending site.

## Table 0023: Admit Source

This table provides HL7-suggested values to be sent in field *PV1-14-admit source*.

| Value | Description | Comment |
|---|---|---|
| 1 | Physician referral | |
| 2 | Clinic referral | |
| 3 | HMO referral | |
| 4 | Transfer from a hospital | |
| 5 | Transfer from a skilled nursing facility | |
| 6 | Transfer from another health care facility | |
| 7 | Emergency room | |
| 8 | Court/law enforcement | |
| 9 | Information not available | |

## Table 0051: Diagnosis Code

Neither HL7 nor MiHIN define values from Table 0051 to be sent in field *DG1-3-diagnosis code – DG1*. It is recommended that the applicable SNOMED-CT, ICD-9, or ICD-10 code be sent in component DG1-3.1 and the corresponding description in component DG1-3.2.

If and only if a SNOMED-CT code is sent in component DG1-3.1, the value `SNM` should be sent in component DG1-3.3.

If and only if an ICD-9 code is sent in component DG1-3.1, the value `I9` should be sent in component DG1-3.3.

If and only if an ICD-10 code is sent in component DG1-3.1, the value `I10` should be sent in component DG1-3.3.

## Table 0052: Diagnosis Type

This table provides HL7-suggested values to be sent in field *DG1-6-diagnosis type*.

| Value | Description | Comment |
|---|---|---|
| A | Admitting | |
| W | Working | |
| F | Final | |

## Table 0053: Diagnosis Coding Method

Values to be sent in field *DG1-2-diagnosis coding method* shall be defined by the sending site.

## Table 0069: Hospital Service

Values to be sent in field *PV1-10-hospital service* shall be defined by the sending site.

## Table 0072: Insurance Plan ID

Values to be sent in field *IN1-1-insurance plan ID* shall be defined by the sending site.

## Table 0076: Message Type

This table provides HL7-defined values to be sent in component 1 of field *MSH-9-message type*.

| Value | Description | Comment |
|---|---|---|
| ACK | General acknowledgment message | |
| ADT | ADT message | |

## Table 0085: Observation Result Status Codes Interpretation

This table provides HL7-defined values to be sent in field *OBX-11-observation result status*.

| Value | Description | Comment |
|---|---|---|
| C | Record coming over is a correction and thus replaces a final result | |
| D | Deletes the OBX record | |
| F | Final results; Can only be changed with a corrected result. | |
| I | Specimen in lab; results pending | |
| N | Not asked; used to affirmatively document that the observation identified in the OBX was not sought when the universal service ID in OBR-4 implies that it would be sought. | |
| O | Order detail description only (no result) | |
| P | Preliminary results | |
| R | Results entered – not verified | |
| S | Partial results | |
| X | Results cannot be obtained for this observation | |
| U | Results status change to final without retransmitting results already sent as 'preliminary'. *E.g.*, radiology changes status from preliminary to final | |
| W | Post original as wrong, *e.g.*, transmitted for wrong patient | |

## Table 0088: Procedure Code

Neither HL7 nor MiHIN define values from Table 0088 to be sent in field *PR1-3-procedure code*. It is recommended that the applicable CPT code be sent in component PR1-3.1 and the corresponding description in component PR1-3.2. If and only if a CPT code is sent in component PR1-3.1, the value C4 should be sent in component PR1-3.3.

## Table 0089: Procedure Coding Method

Values to be sent in field *PR1-2-procedure coding method* shall be defined by the sending site.

## Table 0104: Version ID

This table provides HL7-defined values to be sent in field *MSH-12-version ID*.

| Value | Description | Comment (Release Date) |
|---|---|---|
| 2.0 | Release 2.0 | September 1988 |
| 2.0D | Demo 2.0 | October 1988 |
| 2.1 | Release 2.1 | March 1990 |
| 2.2 | Release 2.2 | December 1994 |
| 2.3 | Release 2.3 | March 1997 |
| 2.3.1 | Release 2.3.1 | May 1999 |
| 2.4 | Release 2.4 | November 2000 |
| 2.5 | Release 2.5 | May 2003 |
| 2.5.1 | Release 2.5.1 | January 2007 |
| 2.6 | Release 2.6 | July 2007 |
| 2.7 | Release 2.7 | November 2010 |
| 2.7.1 | Release 2.7.1 | TBD |

## Table 0112: Discharge Disposition

This table provides HL7-suggested values to be sent in field *PV1-36-discharge disposition*.

| Value | Description | Comment |
|---|---|---|
| 01 | Discharged to home or self care (routine discharge) | |
| 02 | Discharged/transferred to another short term general hospital for inpatient care | |
| 03 | Discharged/transferred to skilled nursing facility (SNF) | |
| 04 | Discharged/transferred to an intermediate care facility (ICF) | |
| 05 | Discharged/transferred to another type of institution for inpatient care or referred for outpatient services to another institution | |
| 06 | Discharged/transferred to home under care of organized home health service organization | |
| 07 | Left against medical advice or discontinued care | |
| 08 | Discharged/transferred to home under care of Home IV provider | |
| 09 | Admitted as an inpatient to this hospital | |
| 20 | Expired | |
| 30 | Still patient or expected to return for outpatient services | |

| Value | Description | Comment |
|---|---|---|
| 40 | Expired at home | |
| 41 | Expired in a medical facility; *e.g.*, hospital, SNF, ICF, or free-standing hospice | |
| 42 | Expired – place unknown | |

### Table 0113: Discharged to Location

Values to be sent in field *PR1-37-discharge to location* shall be defined by the sending site.

### Table 0116: Bed Status

This table provides HL7-suggested values to be sent in field *NPU-2-bed status*.

| Value | Description | Comment |
|---|---|---|
| C | Closed | |
| H | Housekeeping | |
| O | Occupied | |
| U | Unoccupied | |
| K | Contaminated | |
| I | Isolated | |

### Table 0125: Value Type

This table provides HL7-defined values to be sent in field *OBX-2-value type*.

| Value | Description | Comment |
|---|---|---|
| NM | Numeric | |
| ST | String Data | |

### Table 0136: Yes/No Indicator

This table provides HL7-defined values to be sent in field *PID-30-patient death indicator*.

| Value | Description | Comment |
|---|---|---|
| Y | Yes | |
| N | No | |

### Table 0189: Ethnic Group

This table provides CDC-defined values to be sent in field *PID-22-ethnic group*.

| Value | Description | Comment |
|---|---|---|
| 2135-2 | Hispanic or Latino | |
| 2186-5 | Not Hispanic or Latino | |

### Table 0302: Point of Care

Values from Table 0302 to be sent in component 1 of fields of data type PL shall be defined and maintained by the sending site.

### Table 0303: Room

Values from Table 0303 to be sent in component 2 of fields of data type PL shall be defined and maintained by the sending site.

### Table 0304: Bed

Values from Table 0304 to be sent in component 3 of fields of data type PL shall be defined and maintained by the sending site.

### Table 0305: Person Location Type

Values from Table 0305 to be sent in component 6 of fields of data type PL shall be defined and maintained by the sending site.

### Table 0306: Location Status

Values from Table 0306 to be sent in component 5 of fields of data type PL are expected to be defined and maintained by the sending site. Alternatively, values from Table 0116, *Bed Status*, may be used.

### Table 0307: Building

Values from Table 0307 to be sent in component 7 of fields of data type PL shall be defined and maintained by the sending site.

### Table 0308: Floor

Values from Table 0308 to be sent in component 8 of fields of data type PL shall be defined and maintained by the sending site.

### Table 0357: Message Error Status Codes

This table provides HL7-defined values to be sent in component 4 of field *ERR-1-error code and location*.

| Value | Description | Comment |
|---|---|---|
| 100 | Segment sequence error | The message segments were not in the proper order, or required segments are missing. |
| 101 | Required field missing | A required field is missing from a segment. Used also for missing required components and subcomponents. |
| 102 | Data type error | The field contained data of the wrong data type, such as an alphabetic value in a field of type **NM**. |
| 103 | Table value not found | The value of a field of data type **ID** or **IS** was compared against the corresponding table, and no match was found. |
| 200 | Unsupported message type | The value of component 1 of field *MSH-9-message type* is not supported. |
| 201 | Unsupported event code | The value of component 2 of field *MSH-9-message type* is not supported. |
| 202 | Unsupported processing ID | The value of field *MSH-11-processing ID* is not supported. |
| 203 | Unsupported version ID | The value of field *MSH-12-version ID* is not supported. |
| 204 | Unknown key identifier | The ID of the patient was not found. Used for update and delete transactions. |
| 205 | Duplicate key identifier | The ID of the patient already exists. Used for create transactions. |
| 206 | Application record locked | The transaction could not be performed at the application storage level because of a lock on the database file or table. |
| 207 | Application internal error | An application error not explicitly covered by other codes. |

## Table 0361: Application

This table provides MiHIN-defined values to be sent in component 1 of fields *MSH-3-sending application* and *MSH-5-receiving application*.

| Value | Comment |
|---|---|
| Application Specific OID | To be used in MSH-3 |
| Transitions of Care Notification | To be used in MSH-5 by all organizations sending to MiHIN.<br>Other values will be defined for messages sent by MiHIN. |

## Table 0362: Facility

This table provides values to be sent in component 1 of fields *MSH-4-sending facility* and *MSH-6-receiving facility*.

| Value | Comment |
|---|---|
| Michigan Health Information Network | To be used in MSH-6 by all organizations sending to MiHIN. |
| Facility Specific OID | To be used in MSH-4 by all organizations sending to MiHIN. |

## Table 0516: Error Severity

This table provides HL7-defined values to be sent in field *ERR-4-severity*.

| Value | Description | Comment |
|---|---|---|
| E | Error | Transaction was unsuccessful |
| I | Information | Transaction was successful but includes additional information, such as a message to be communicated to the patient or provider |
| W | Warning | Transaction was successful, but unexpected issues or side effects (*e.g.*, an unexpected indeterminate state that requires additional action by the message generator) may exist |

Warner Norcross&Judd LLP
ATTORNEYS AT LAW

NATHAN W. STEED

616.752.2723
FAX 616.222.2723

nsteed@wnj.com

September 9, 2013

Dear Michigan Health Information Network Shared Services ("**MiHIN**"):

You have asked us to address whether a misdirected Admit, Discharge, Transfer notification ("**ADT Notification**") under the following scenario would trigger the breach notification requirements of the Health Insurance Portability and Accountability Act, Public Law 104-91, as amended ("**HIPAA**") for those entities participating in the Statewide ADT Notification Use Case Agreement.

**Scenario**: A patient is admitted, transferred or discharged from a Covered Entity (as defined under HIPAA) whether it is a hospital, physician organization or other similar health care provider. As part of the process an ADT Notification is generated and sent to the Covered Entity's health information exchange provider ("**Sending HIE**"). The Sending HIE transmits the ADT Notification to MiHIN. MiHIN then routs the ADT Notification to other Covered Entities with active care relationships with the patient either directly or through another health information exchange provider. MiHIN may also route the ADT Notification to a payor. However, due to an error within MiHIN's database or miscoding at the point of care, the ADT Notification is sent to an incorrect Covered Entity, either the wrong payor or health care provider. The recipient sees that the identifiers do not match a patient in their database, but does not otherwise read or open the file.

Under HIPAA, a Covered Entity has a duty to notify individuals of a breach of protected health information unless the Covered Entity can demonstrate that there is a low probability that the protected health information has been compromised based on a risk assessment centered on the following factors:

1. The nature and extent of the protected health information involved, including the types of identifiers and the likelihood of re-identification;
2. The unauthorized person who used the protected health information or to whom the disclosure was made;
3. Whether the protected health information was actually acquired or viewed; and
4. The extent to which the risk to the protected health information has been mitigated.

Note that this letter only addresses the situation of an ADT Notification received by the incorrect health care provider or payor. It is our understanding that if the electronic service information is inaccurate, the ADT Notification may fail in its transmission or be transmitted to the wrong destination. In the case of transmission failure, however, the protected health information would not be deemed disclosed as there was no recipient. In the case of

transmission to the wrong destination, we understand the recipient would be another health care provider or payor that is also a Covered Entity.

**The nature and extent of the protected health information involved, including the types of identifiers and the likelihood of re-identification**

Analysis under this factor includes a determination of the type of information disclosed – Social Security numbers, driver's license numbers, bank account/credit card numbers, insurance numbers or other protected health information that could be used for identity theft or identity fraud crimes. The risk analysis should also determine whether the ADT Notification included detailed information about medical treatment, diagnoses, diseases, or similar details about an individual's health. Finally, the Covered Entity must also analyze the likelihood that the protected health information could be re-identified based on the context and the ability to link the information to other available information (see 78 Fed. Reg. 5642-43 (Jan. 25, 2013)).

We understand that the Statewide ADT Notification does not contain the full Social Security number, driver's license number, or bank account/credit card numbers. It may contain insurance numbers and a brief description about medical treatment, diagnoses, or disease. Because the ADT Notification will also contain the patient's name, it would be relatively easy to link the information with other information about the patient. While the name and insurance number could be used for insurance fraud purposes, many care givers require additional verifying identification information at the time of service. Thus, a name and insurance number alone would create only a limited risk that the protected health information could be compromised.

**The unauthorized person who used the protected health information or to whom the disclosure was made**

Information under this factor includes determining whether the recipient is also a HIPAA Covered Entity with a legal duty not to misuse the information. Additionally, the Covered Entity must determine whether the recipient has a contractual relationship with the Covered Entity that prohibits the recipient from misusing the information. Finally, the Covered Entity must determine broadly whether there are other facts and circumstances that would indicate that the recipient of the information is unlikely to misuse the information (see 78 Fed. Reg. 5643 (Jan. 25, 2013)).

Under this factor, all points of analysis weigh in favor of a low probability that the protected health information will be compromised. As in the scenario described above, if an ADT Notification is directed to the incorrect health care provider or payor, both types of entities

would be Covered Entities under HIPAA and have the legal duty not to misuse or further disclose the information received in error.

Additionally, MiHIN maintains direct contractual relationships with the Covered Entities or business associates of the Covered Entities (Qualified Organizations). These contracts provide for notification to MiHIN in the event of receipt of a misdirected ADT Notification and other non-disclosure obligations consistent with HIPAA. Where MiHIN has a contractual relationship with the business associate, MiHIN has included contractual obligations on the business associates of the recipients, including a requirement that the business associate obligate the Covered Entity to notify the business associate in the event of the receipt of a misdirected ADT Notification. MiHIN also maintains the ability to audit or review audits of those business associates to ensure compliance with that requirement. In either case, upon receiving notice of a misdirected ADT Notification MiHIN is obligated to immediately notify the Covered Entity.

Finally, any recipients that are health care providers, must adhere to state law and ethical obligations to not further disclose the confidential information of patients (see e.g., MCL 333.20201).

**Whether the protected health information was actually acquired or viewed**

This factor typically applies in the context of a lost computer and a determination as to whether the protected health information was accessed, viewed, acquired, transferred or otherwise compromised (see 78 Fed. Reg. 5643 (Jan. 25, 2013)). Under the scenario described above, the recipient will likely see that the ADT Notification was misdirected and should then notify MiHIN directly or notify its business associate who will, in turn, notify MiHIN. Further, a recipient would be violating its contractual and statutory obligations if it were to compromise any protected health information.

**The extent to which the risk to the protected health information has been mitigated**

The general analysis includes determining whether there are past dealings with the recipient or other factors that would indicate that the recipient can be trusted not to use or further disclose the information (see 78 Fed. Reg. 5643 (Jan. 25, 2013)). As noted above, due to the notification and non-disclosure obligations between MiHIN and the recipient or MiHIN and the recipient's business associate, the HIPAA-imposed obligations on the Covered Entity recipient, and the state law and ethical obligations of confidentiality, a recipient is obligated to protect the information. We assume any behavior by a participant indicating they cannot be trusted to comply with their statutory and contractual obligations would be appropriately dealt with, including removal of the participant from the use case.

**Conclusion**

Based on the factors above, and subject to the assumptions in this letter, in the event of a misdirected ADT Notification to another health care provider or payor as described above, we believe that it would be reasonable for a participant to conclude that it could demonstrate that there was a low probability that the protected health information was compromised. As noted above, if a Covered Entity can demonstrate that there is a low probability that the protected health information has been compromised, it would not need to notify either the Department of Health and Human Services or the individuals. We assume there are no other material facts that would be relevant or inconsistent with a determination that the probability of compromise was low. All determinations need to be based on an analysis of the facts and circumstances at the time of the potential disclosure.

As to questions of fact relevant to our opinion, we have relied upon information obtained from the contractors and employees of MiHIN and other sources that we believe are reliable, and, we have assumed, without independent investigation, the accuracy of that information. Additionally, we are assuming that the physicians' offices and/or payors who receive the misdirected ADT Notification are complying with HIPAA and their contractual obligations in appropriately screening employees who have access to protected health information and appropriately securing the computer system that receives information transmitted by MiHIN.

The opinion expressed above is subject to the following qualifications:

1. Our opinion is a matter of professional judgment and is not a guaranty of results. We give this opinion solely for your benefit in connection with participation in the Statewide ADT Use Case Agreement. This opinion may not be relied upon by any person or entity other than MiHIN and participants in the ADT Use Case or for any other purpose.

2. Our opinion is based entirely upon, and limited to, our knowledge of HIPAA, laws of the state of Michigan as they apply to Covered Entities and Business Associates, and the form of agreement used by MiHIN and reviewed by us.

3. Our opinion is limited to the matters specifically referred to in this letter and is effective as of the date of this letter. No expansion of our opinion may be made by implication or otherwise. We do not undertake to advise you of any matter within the scope of this letter that comes to our attention after the date of this letter and disclaim any responsibility to advise you of any future changes in law or fact that may affect our opinion.

4. We express no opinion and assume no responsibility as to the effect of, or consequences resulting from, any fact or circumstance (including, without limitation, laws passed or court decisions decided) occurring after the date of this letter.

Very truly yours,

Nathan W. Steed

NWS/md
9437111

FOLEY

FOLEY & LARDNER LLP

ATTORNEYS AT LAW

ONE DETROIT CENTER
500 WOODWARD AVENUE, STE 2700
DETROIT, MI 48226-3489
WWW.FOLEY.COM

September 30, 2014

Michigan Health Information Network
Shared Services (MiHIN)
120 West Saginaw Highway
East Lansing, MI 48823

Re: ADT Notification Use Case Scenario

Dear MiHIN:

You have asked us to address whether a misdirected Admit, Discharge, Transfer notification message ("**ADT Notification**") under the following scenario would trigger the breach notification requirements of the Health Insurance Portability and Accountability Act, Public Law 104-91, as amended ("**HIPAA**") for those entities participating in the Statewide ADT Notification Use Case Agreement.

**Scenario**

A patient is admitted, transferred or discharged from a covered entity (as defined under HIPAA) whether it is a hospital, physician organization or other similar health care provider. As part of the process an ADT Notification is generated and sent to via covered entity's transport to MiHIN. The covered entities transport may be via any one of a number of Data Sharing Organizations (DSOs), all of which are signatories to a HIPAA-compliant BAA with MiHIN:

(a) Health Information Exchange Qualified Organizations (HIE-QOs) which may be a qualified sub-state HIE, RHIO, or HIE/HIN/RHIO in another state treating Michigan residents which has entered into the Statewide ADT Use Case Agreement;

(b) Virtual Qualified Organizations (VQOs) determined as being suitable for transmitting or receiving ADT messages through the MiHIN network and the Statewide ADT Use Case Agreement;

(c) Sponsored Sharing Organizations (SSOs) which are under the sponsorship of any QO and may participate in the Statewide ADT Use Case Agreement;

(d) State-Sponsored Sharing Organizations (SSSOs) which are sponsored by the Michigan Department of Community Health QO and which may participate in Public Health Reporting Use Cases such as sending ADTs to a Medicaid ADT Repository;

The DSO transmits the ADT Notification to MiHIN. MiHIN then routes the ADT Notification to other covered entities with Active Care Relationships with the patient either directly or through another Data Sharing Organization. MiHIN may also route the ADT Notification to a payer. In this scenario, if there hypothetically should be an error or mistake within MiHIN, or human data entry error at the point of care, the ADT Notification could be sent to an incorrect covered entity, either the wrong payer or health care provider(s). In this scenario and opinion, the recipient sees that the identifiers do not match any patient in their active care relationship database, but does not otherwise read or open the file.

This letter addresses the situation of an ADT Notification received by the incorrect health care provider or payer. It is our understanding that if the electronic service information is inaccurate, the ADT Notification may fail in its transmission or be transmitted to the wrong destination. In the case of transmission failure, however, the protected health information would not be deemed disclosed as there was no recipient. In the case of transmission to the wrong destination, we understand the recipient would be another health care provider or payer that is also a Covered Entity.

**DISCUSSION**

**HIPAA Factors**

Under HIPAA, a covered entity has a duty to notify individuals of a breach of protected health information unless the covered entity can demonstrate that there is a low probability that the protected health information has been compromised based on a risk assessment centered on the following factors:

1. The nature and extent of the protected health information involved, including the types of identifiers and the likelihood of re-identification;

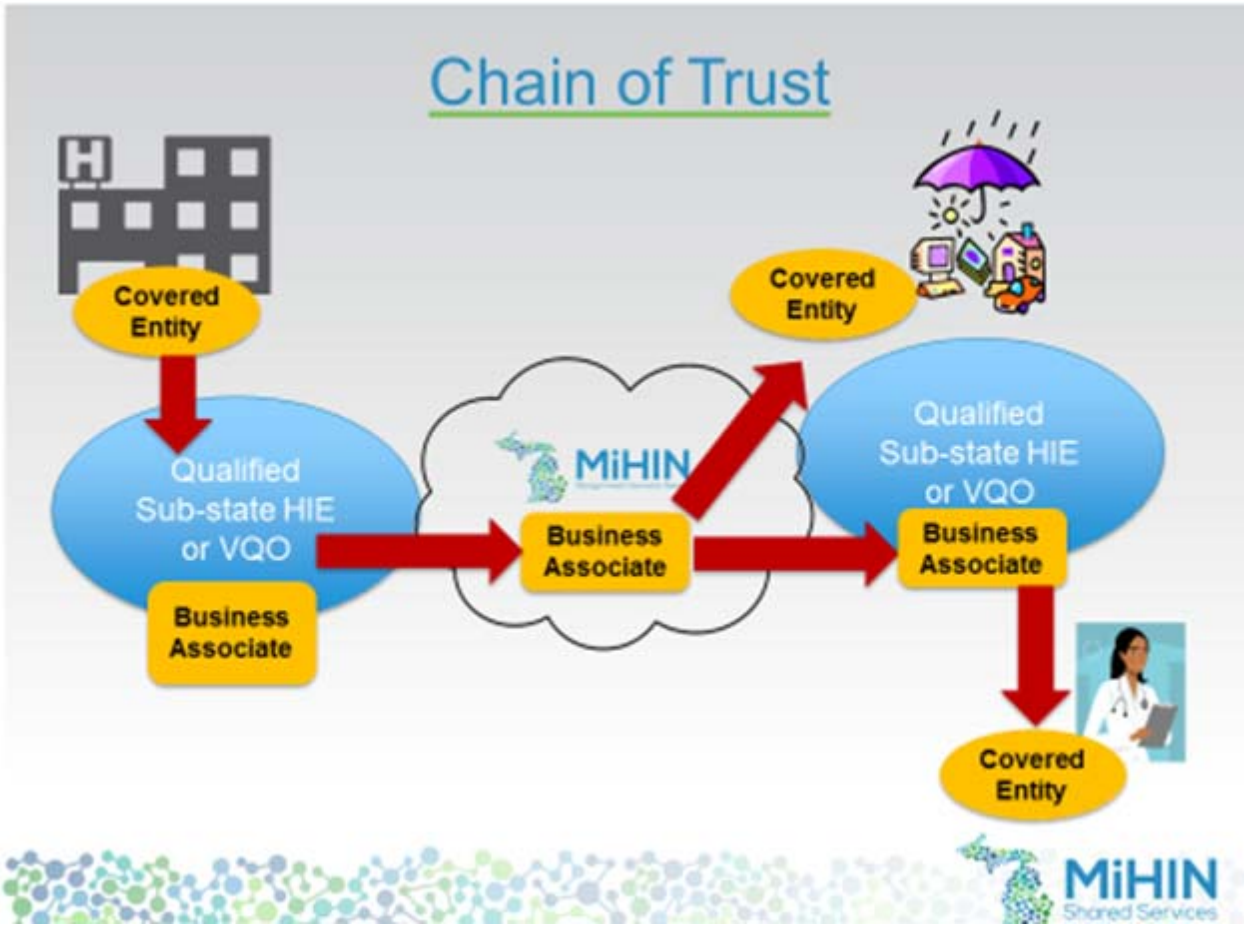
2. The unauthorized person who used the protected health information or to whom the disclosure was made;

3. Whether the protected health information was actually acquired or viewed; and

4. The extent to which the risk to the protected health information has been mitigated.

**The Legal Chain of Trust**

In evaluating this issue it is important to recognize and understand the chain of trust utilized by the MiHIN network structure. The Statewide ADT Notification system relies on a chain of trust comprised of the organizations that transmit, receive and have access to ADT Notifications. Each member in the chain of trust is bound by legal and contractual obligations to maintain the confidentiality of patient information. This chain of trust is depicted below.




*Source: Michigan Health Information Network Shared Services (MiHIN)*

As depicted above, in the chain of trust a hospital transmits the ADT message to a Data Sharing Organization (DSO). The DSO is a business associate under HIPAA, and has entered into appropriate agreements with the hospital protecting the privacy and security of PHI, including PHI and other personal information contained within the ADT message. The DSO then transmits the

ADT message to MiHIN, also a business associate and subject to reasonable and appropriate contractual protections governing the privacy and confidentiality of PHI. MiHIN then transmits the message either directly to another covered entity, such as a hospital, physician office or payer, or to another DSO for further transmission to a covered entity.

In this manner, all of the constituents in the chain of trust are governed under the privacy and security obligations of HIPAA and applicable state law, as well as agreements providing for the privacy and security of PHI.

We now turn to the four HIPAA factors to be considered in determining whether a breach has occurred. In the commentary to the final Omnibus Rule (the "Omnibus Rule") adopting the four factors, HHS stated, "We believe that the use of these factors, which are derived from the factors listed in the interim final rule as well as many of the factors suggested by commenters, will result in a more objective evaluation of the risk to the protected health information and a more uniform application of the rule." Accordingly, HHS's intent is that the factors be utilized to apply an objective, rather than subjective, analysis of whether a breach has occurred.

**1. The nature and extent of the protected health information involved, including the types of identifiers and the likelihood of re-identification**

As noted in the HHS commentary to the Omnibus Rule, "To assess this factor, entities should consider the type of protected health information involved in the impermissible use or disclosure, such as whether the disclosure involved information that is of a more sensitive nature." Thus, analysis under this factor includes a determination of the type and sensitivity of information disclosed. For example, with respect to financial information, this includes credit card numbers, Social Security numbers, or other information that increases the risk of identity theft or financial fraud. With respect to clinical information, one must consider not only the nature of the services or other information, but also the amount of detailed clinical information involved (e.g., treatment plan, diagnosis, medication, medical history information, test results). See 78 Fed. Reg. 5642-43 (Jan. 25, 2013).

The standard HL7 ADT message carries patient demographic information and information about certain triggering events, such as patient admit, discharge, transfer, registration, etc. The ADT message can also contain insurance information, including policy number and other identifying information. We understand that the Statewide ADT Notification does not contain the full Social Security number, driver's license number, or bank account/credit card numbers. It may contain insurance numbers and a brief description about medical treatment, diagnoses, or disease.

While the name and insurance number may be contained within the ADT message, we note the sensitivity of and risk associated with this information is significantly mitigated by the common

practice of providers requiring an actual health insurance card, as well as additional identifying information at the time of service. Thus, it appears that a name and insurance number alone would create only a limited risk that the protected health information could be used to commit medical identity theft or cause other harm to the patient.

**2. The unauthorized person who used the protected health information or to whom the disclosure was made**

This factor requires covered entities and business associates to consider the unauthorized person who impermissibly used the protected health information or to whom the impermissible disclosure was made. In this regard, entities should consider whether the unauthorized person who received the information has obligations to protect the privacy and security of the information. For example, as noted in the HHS commentary to the Omnibus Rule, "if protected health information is impermissibly disclosed to another entity obligated to abide by the HIPAA Privacy and Security Rules or to a Federal agency obligated to comply with the Privacy Act of 1974 and the Federal Information Security Management Act of 2002, there may be a lower probability that the protected health information has been compromised since the recipient of the information is obligated to protect the privacy and security of the information in a similar manner as the disclosing entity." Thus, inadvertent disclosure of PHI to a business associate or covered entity is less likely to result in misuse of the information or otherwise cause harm to the patient.

This obligation to protect the privacy and security of the information may arise from applicable laws and regulations, such as the HIPAA Privacy Rule and state health information privacy laws, as well as contractual and ethical obligations to maintain the privacy of information.

Under this factor, all points of analysis weigh in favor of a low probability that the protected health information will be compromised. As in the scenario described above, if an ADT Notification is directed to the incorrect health care provider or payor, both types of entities would be covered entities under HIPAA and have the legal obligation not to misuse or further disclose the information received in error. As described above, ADT Notification system is contained within a chain of trust involving trusted organizations and individuals. Each constituent within the chain is known to be a trusted and responsible organization, and is obligated to maintain the privacy of PHI and other personal information.

As illustrated in the chain of trust above, MiHIN maintains direct contractual relationships with the covered entities or business associates of the covered entities (the sub-state HIEs and VQOs). These contracts provide for notification to MiHIN in the event of receipt of a misdirected ADT Notification and other non-disclosure obligations consistent with HIPAA. Where MiHIN has a contractual relationship with the business associate, MiHIN has included contractual obligations on the business associates of the recipients, including a requirement that the business associate obligate the covered entity to notify the business associate in the event of the receipt of a misdirected ADT

Notification. MiHIN also maintains the ability to audit or review audits of those business associates to ensure compliance with that requirement. In either case, upon receiving notice of a misdirected ADT Notification MiHIN is obligated to immediately notify the covered entity.

Finally, any recipients that are health care providers, must adhere to state law and ethical obligations to not further disclose the confidential information of patients (see e.g., MCL 333.20201). For these reasons, we believe this factor weighs heavily in favor of the conclusion that a misdirected ADT Notification that was received by any of the CEs in the MiHIN network would not result in a breach under HIPAA in accordance with the Omnibus Rule.

**3. Whether the protected health information was actually acquired or viewed**

This factor typically applies in the context of a lost computer and a determination as to whether the protected health information was accessed, viewed, acquired, transferred or otherwise compromised (see 78 Fed. Reg. 5643 (Jan. 25, 2013)). Under the scenario described above, the recipient will likely see that the ADT Notification was misdirected and should then notify MiHIN directly or notify its business associate who will, in turn, notify MiHIN. Further, a recipient would be violating its contractual and statutory obligations if it were to compromise any protected health information.

Thus, we believe in the event of a misdirected ADT Notification a high likelihood exists that the contents of the message constituting PHI would not be viewed by unauthorized individuals, or in the alternative, if viewed would not be misused by the individual, particularly in light of the other three factors to be considered. This factor likewise supports the conclusion that a misdirected ADT notification would not result in a breach.

**4. The extent to which the risk to the protected health information has been mitigated**

The final factor to be considered requires covered entities and business associates to consider the extent to which the risk to the PHI has been mitigated. As noted by the HHS commentary to the Omnibus Rule, "covered entities and business associates should attempt to mitigate the risks to the protected health information following any impermissible use or disclosure, such as by obtaining the recipient's satisfactory assurances that the information will not be further used or disclosed (through a confidentiality agreement or similar means) or will be destroyed, and should consider the extent and efficacy of the mitigation when determining the probability that the protected health information has been compromised."

When this factor is considered in combination with factor two above (the identity of unauthorized recipient), may lead to different results in terms of the risk to PHI. For example, as noted in the HHS commentary, "a covered entity may be able to obtain and rely on the assurances of

an employee, affiliated entity, business associate, or another covered entity that the entity or person destroyed information it received in error, while such assurances from certain third parties may not be sufficient." (78 Fed. Reg. 5643 (Jan. 25, 2013)).

As discussed more fully above, in the MiHIN ADT Notification scenario, all participants are trusted organizations and individuals as part of a legal chain of trust resulting from legal, contractual and ethical obligations. Due to the notification and non-disclosure obligations between MiHIN and the recipient or MiHIN and the recipient's business associate, the HIPAA-imposed obligations on the covered entity recipient, and the state law and ethical obligations of confidentiality, a recipient is obligated to protect the information – including information received in error. We assume any behavior by a participant indicating they cannot be trusted to comply with their statutory and contractual obligations would be appropriately dealt with, including removal of the participant from the use case.

Accordingly, this factor likewise strongly supports the conclusion that a misdirected ADT Notification would not result in a breach.

**Conclusion**

Based upon and subject to the facts and representations set forth herein, upon which we are relying, with your permission, without independent investigation or verification, and subject to the assumptions, qualifications and limitations contained herein, and having regard to the legal considerations discussed herein, in the event of a misdirected ADT Notification to another health care provider or payer, we believe that it would be reasonable for a participant to conclude that it could demonstrate that there was a low probability that PHI was compromised. As noted above, if a covered entity can demonstrate that there is a low probability that the protected health information has been compromised, it would not need to notify either the Department of Health and Human Services or the individuals. We assume there are no other material facts that would be relevant or inconsistent with a determination that the probability of compromise was low. All determinations need to be based on an analysis of the facts and circumstances at the time of the potential disclosure.

As to questions of fact relevant to our opinion, we have relied upon information obtained from the contractors and employees of MiHIN and other sources that we believe are reliable, and, we have assumed, without independent investigation, the accuracy of that information. Additionally, we are assuming that the physicians' offices and/or payers who receive the misdirected ADT Notification comply with HIPAA and their contractual obligations in appropriately screening employees who have access to protected health information and appropriately securing the computer system that receives information transmitted by MiHIN.

The opinion expressed above is subject to the following qualifications:

1. Our opinion is a matter of professional judgment and is not a guaranty of results. We give this opinion solely for your benefit in connection with participation in the Statewide ADT Use Case Agreement. This opinion may not be relied upon by any person or entity other than MiHIN and participants in the ADT Use Case or for any other purpose.

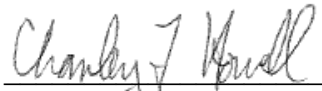
2. Our opinion is based entirely upon, and limited to, our knowledge of HIPAA, laws of the state of Michigan as they apply to covered entities and Business Associates, and the form of agreement used by MiHIN and reviewed by us.

3. Our opinion is limited to the matters specifically referred to in this letter and is effective as of the date of this letter. No expansion of our opinion may be made by implication or otherwise. We do not undertake to advise you of any matter within the scope of this letter that comes to our attention after the date of this letter and disclaim any responsibility to advise you of any future changes in law or fact that may affect our opinion.

4. We express no opinion and assume no responsibility as to the effect of, or consequences resulting from, any fact or circumstance (including, without limitation, laws passed or court decisions decided) occurring after the date of this letter.

Very truly yours,

FOLEY & LARDNER LLP



By: Chanley T. Howell