Disease Surveillance
Implementation Guide

Version 20
November 11th, 2025

Document History

Date	Version	Sections Revised	Description	Modifier
04/08/19	15	All	Revise and updated to new style	S. Southard
04/12/24	16	All	Added required fields, revised table of contents	T. Fite
10/15/25	17	All	Updated to new template	T. Fite
10/29/25	18	All	Peer Review and Final Update	M. Allen
11/11/25	19	All	General Editing	S. Denhof
11/11/25	20	All	Final Update	T. Fite

Table of Contents

1. Introduction

1.1 Purpose of the Data Exchange Solution

Offers a standard, consistent method to automatically and electronically send lab results regarding reportable diseases to the State of Michigan.

The State of Michigan requires physicians, clinical laboratories, primary and secondary schools, childcare centers, and camps to report the occurrence (or suspected occurrence) of any disease, condition, or infection described in the Michigan Communicable Disease Rules. Any laboratory test result that indicates one of these occurrences is known as a reportable lab result and must be sent to the state. Examples of required submissions can include rabies, chicken pox, HIV, hepatitis, Lyme disease, measles, and influenza. The public health system depends on these reportable lab results for many reasons:

- To identify outbreaks and epidemics. If an unusual number of cases are reported for any condition, local health authorities can investigate and take appropriate action.
- To encourage preventive treatment and/or education when needed.
- To help target prevention programs and identify care needs so resources can be used efficiently.
- To evaluate the success of long-term control efforts.
- To facilitate research for finding a preventable cause.
- To assist with national and international disease monitoring efforts. If an unusual disease or condition is detected in a region, the federal government is contacted to determine whether national or international investigation is needed.

1.2 Message Content

For the purposes of implementation of this data exchange solution (DES), message content means a conforming HL7® 2.5.1 message with a message type of ORU^R01.

1.3 Data Flow

1.3.1 Functional Data Flow

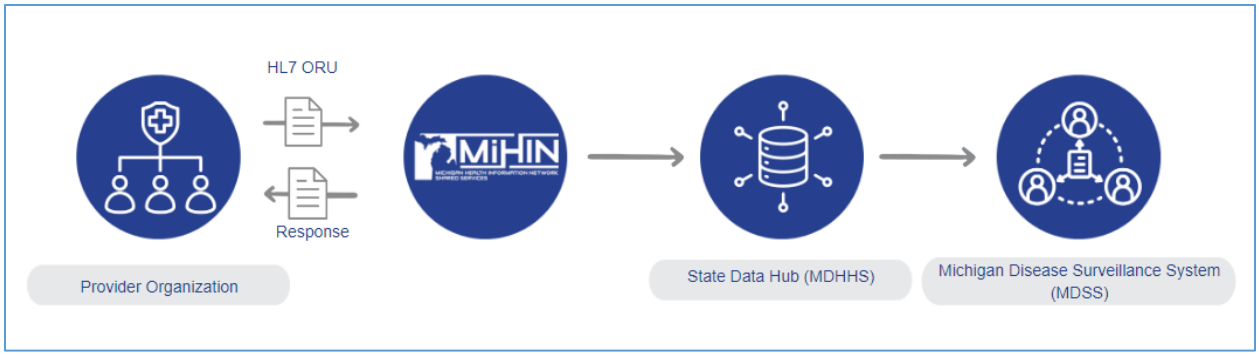

Figure 1.1 Disease Surveillance Data Flow Diagram

1. The participating sending organization sends MiHIN an HL7 ORU^R01 containing the lab result.
2. MiHIN routes the HL7 ORU^R01 message to the State of Michigan's Data Hub. Depending on the type of transport, MiHIN returns an applicable response message confirming receipt.
3. Data Hub forwards the lab message to the Michigan Disease Surveillance System (MDSS).

For more information about this data exchange solution, refer to the following link: https://mihin.org/wp-content/uploads/2023/07/MiHIN-UCIG-Disease-Surveillance-v19-05-26-20.pdf

1.3.2 Actors

- **Actor:** Provider Organization
  - *Role:* Generates ORU^R01 messages with lab result data and sends it to MiHIN via the chosen transport method. Is also responsible for receiving response messages from MiHIN, if applicable, and ingesting those messages into their electronic health record (EHR).
- **Actor:** Health Information Network (MiHIN)
  - *Role:* Receives the ORU^R01 message containing lab result data from the provider organization and then generates and returns response, where applicable, via the chosen transport method. Routes messages to the MDHHS State Data Hub via established transport.
- **Actor:** Michigan Department of Health and Human Services (MDHHS)/Michigan Disease Surveillance System (MDSS)
  - *Role:* Receives ORU^R01 message containing lab result data from MiHIN along established transport and sends the message and its lab

data to the Michigan Disease Surveillance System (MDSS) for processing.

You can contact MiHIN at www.mihin.org/requesthelp for more information.

2. Onboarding

2.1 Prerequisites

Participating organizations will need to complete two onboarding tracks, in the following order:

1. Obtain, review, and execute legal agreements, then
2. Establish technical transport and testing.

2.1.1 Universal Legal Prerequisites

The following legal documentation will need to be executed prior to kick-off or any connectivity being established between MiHIN and participating organizations.

- Statement of Work (SOW), where applicable.
- MiHIN's Exhibit A Agreement (Found on the MiHIN Legal Portal)
- Participant Agreement (Found on the MiHIN Legal Portal)
- Must select the appropriate on the MiHIN Legal Portal in addition to the above agreements.

To initiate legal onboarding, contact www.mihin.org/requesthelp.

2.1.2 Technical Requirements

The following implementations and technical requirements will need to be conducted for Disease Surveillance to function.

2.1.2.1 Data Exchange Solution Requirements

- No other data exchange solution implementations are required for participation in the Disease Surveillance Data Exchange Solution.

2.1.2.2 Other Technical Requirements

- MiHIN supports an HL7 over Lower Layer Protocol (LLP) via IPsec Virtual Private Network (VPN) and HL7 2.x messaging standards. HL7 v2.5.1 or newer versions are preferred, but HL7 v2.3.1 is still allowable. Participating organizations will need to adhere to these standards as a prerequisite.
- The participating organization is required to support two VPN connections if they already have an established connection with MiHIN's Integrated Technology Platform (ITP) and are new to participation in this data exchange solution:

- The first VPN connection to support their participation on the Integrated Technology Platform, and Rhapsody, which is specifically used for data exchange solutions for public health reporting

- Participating organizations will need the ability to generate ORU Messages that adhere to specifications listed in the state DSS Testing and Submission Guide and send them via one of the transport options listed in Section 2.3. The guide can be found here: https://michiganhealthit.org/data-and-reports/public-health/mdss/
- Organizations will need to be able to receive response messages from MiHIN via one of the transport options listed in Section 2.3 and ingest it into their EHR where applicable.

2.2 Disease Surveillance Onboarding Process

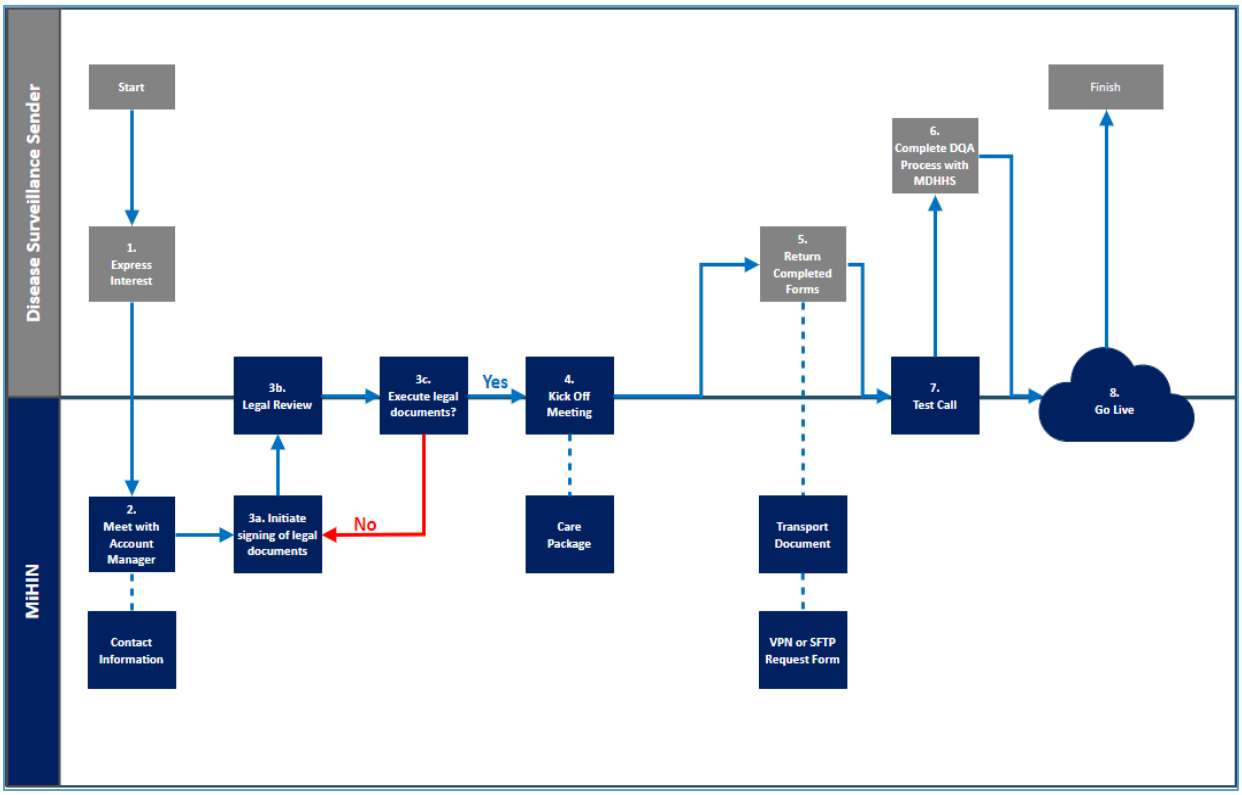

Figure 2. Disease Surveillance Onboarding Workflow

- Express interest in participating in the Disease Surveillance Data Exchange Solution
- Execute legal documents
- Distribute care package documents
- Participate in a kick-off meeting with MiHIN's Customer Success Team
- Exchange required documents

- Onboarding Contact Form (if not already collected)
- Transport Document
  - VPN Request Form
  - SFTP Account Request Form

- Establish transport method/connectivity:
  - Virtual Private Network (VPN)
  - Secure File Transfer Protocol (SFTP)
- Test ORU HL7 Messages
- Complete Data Quality Assurance (DQA) with MDHHS
- Go live

2.3 Technical Connectivity Process

MiHIN considers itself "transport agnostic" and offers multiple options for organizations to establish technical connectivity to transport data to MiHIN. Organizations should select one or more connectivity methods for message transport based on their technical capabilities and should communicate the selection(s) to www.mihin.org/requesthelp early in the onboarding process. Currently the ONLY transport methods MiHIN accepts are:

- **LLP over IPsec VPN-** Lower-Layer Protocol over Internet Protocol Security Virtual Private Network
- **SFTP-** MiHIN-Hosted Secure File Transfer Protocol

For VPN connectivity, two VPNs are required. A primary VPN will facilitate regular traffic. A secondary will be established for fail-over purposes.

The following steps describe the technical onboarding process. However, MiHIN typically conducts onboarding kick-off meetings with new organizations to go through each of these steps in detail and answer any questions.

1. The Participating Organization must register with the Michigan Disease Surveillance System (MDSS). https://mimu.michiganhealthit.org/
2. The Participating Organization must send their Clinical Laboratory Improvement Amendment (CLIA) number to MiHIN at http://mihin.org/requesthelp.
3. The participating organization selects one supported transport method and establishes connectivity with MiHIN. This step varies based on the method selected:

a. **LLP over IPsec VPN** – MiHIN's site-to-site VPN request form must be completed, sent to, and approved by MiHIN. Send a request via www.mihin.org/requesthelp to obtain the VPN request form. A pre-shared key is then exchanged between the organization and MiHIN to initialize the connection. The LLP over IPsec VPN is the most efficient transport for very high volumes of messages.

b. **MIHIN-Hosted Secure File Transfer Protocol** – MiHIN-Hosted Secure File Transfer Protocol on the Integrated Technology Platform. All connectivity testing flows are accomplished through the transfer of files via an SFTP folder and confirmation of receipt. Unless otherwise requested, all testing communications can be done via email.

4. Test messages are sent by the participating organization to MiHIN. Depending on the selected transport, MiHIN may return a response message, such as an Acknowledgement (ACK), upon successful receipt of the test message. Test messages must adhere to the following:
    a. All test messages must have a "T" in the Message Header – field 11
    b. Test traffic routes via MiHIN to the appropriate destination. For Disease Surveillance:
        i. MSH-5 = MDSS
        ii. MSH-6 = MDCH
    c. The end-destination monitors for inbound test traffic and confirms receipt with MiHIN, which confirms with the participating organization.
5. For the Disease Surveillance Data Exchange Solution, MDSS deems the sending facility to have entered Data Quality Assurance (DQA) status once they have successfully received a properly formatted message from the sending facility via the participating organization through MiHIN.
    a. Until completion of the DQA process, sending facilities that are already sending data to MDSS should dually send their disease surveillance messages through MiHIN as well as their current method.
6. MDSS declares the sending facility to be at production status after another period of successful testing and upon leaving DQA status.
    a. One in production, the sending facility will then send production messages through the participating organization to MiHIN. The

sending facility now places a “P” (for production) value in the MSH-11 instead of the “T” used during testing.

2.3.1 Onboarding Additional Sending Facilities

When a participating organization wishes to onboard additional sending facilities, those facilities must first register with MDSS. Once successful, registration information from MDSS, including the Facility CLIA number, must be requested through www.mihin.org/requesthelp. The new sending facility should then begin sending test messages to MDSS in the same fashion as the initial facility, as detailed in section 3.1.2, making sure that to place a “T” value in MSH-11. MDSS deems the sending facility to be in DQA and eventually production status.

3. Specifications

3.1 Overview

3.1.1 Environments

- MiHIN Pre-Production
  - Private: 172.16.5.95
  - Public: 23.20.140.197
- MiHIN Production
  - Private: 172.16.5.125
  - Public: 52.204.207.180
- Secure File Transfer Protocol (SFTP)
  - Hostname: ppqc.mihin.org
  - Port: 22

3.2 General Message Requirements

For general rules that apply to the entire message, refer to the MDSS Testing and Submission Guide, located at: https://michiganhealthit.org/data-and-reports/public-health/mdss/

3.2.1 Message Trigger Events

The HL7 message type for Disease Surveillance is an ORU and the trigger event is ORU^R01^ORU_R01.

3.2.2 Required Message Fields

- MSH-10: Message Control ID
- MSH-3.1: Sending Application Namespace ID
- MSH-4.1: Sending Facility Namespace ID
- MSH-4.2: Sending Facility Universal ID
- MSH-9.2: Trigger Event
- PID-10: Race
- PID-11.1: Street Address
- PID-11.5: ZIP
- PID-2: Patient ID or PID-3: Patient Identifier List will be accepted
- PID-5.1: Patient Family Name

- PID-5.2: Patient Given Name
- PID-7: DOB
- PID-8: Sex
- PV1-2: Patient Class
- OBR-16: Ordering Provider
- OBX-11: Observation Results Status
- OBX-2: Value Type
- OBX-3: Observation Identifier
- OBX-5: Observation Value

3.3 Specific Segment and Field Definitions

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

Sequence	Length	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	
4	180	HD	R	1..1	0362	00004	Sending Facility	CLIA number
5	180	HD	R	1..1	0361	00005	Receiving Application	MDSS
6	180	HD	R	1..1	0362	00006	Receiving Facility	MDCH
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	ORU^R01^0 RU_R01
10	20	ST	R	1..1		00010	Message Control ID	
11	3	PT	R	1..1		00011	Processing ID	**P** when in production, **T** for testing

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	
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	

3.3.1 All Remaining Segments

The message header is the only segment which MiHIN requires to be formatted in a certain way. MiHIN does not evaluate or verify any other part of the message. For all remaining segments and field, follow MDSS standards, which can be retrieved here: https://michiganhealthit.org/data-and-reports/public-health/mdss/

4. Production Support

	Severity Levels			
	1	***2***	***3***	***4***
Description	A critical production system is down or does not function at all, and there is no circumvention or workaround for the problem; a significant number of users are affected, and a production business system is inoperable.	More than 90% of messages received and delivered successfully, but some messages are not delivered/received with required accuracy. Service component severely restricted in one of the following ways: • High impact risk or actual occurrence of patient care affected or operational impairment • Business critical service has a partial failure for multiple TDSOs • A critical service is online however, operating in a degraded state and having a significant impact on multiple TDSOs	Service component restricted in one of the following ways: • A component is not performing as documented or there are unexpected results • Business critical service has failed two or more TDSOs • Critical service is usable however, a workaround is available, or less significant features are unavailable .	No operational impact to MiHIN. A non-critical service component is malfunctioning, causing minimal impact, or a test system is down.
Initiation Method	***Call (844) 454-2443 and submit a ticket online at www.mihin.org/requesthelp***	***Call (844) 454-2443 and submit a ticket online at www.mihin.org/requesthelp***	**Submit** a ticket online at www.mihin.org/requesthelp	**Submit** a ticket online at www.mihin.org/requesthelp
Initial Response	Within **30 minutes**	Within **30 minutes**	Within **3 business hours**	Within **6 business hours**
Resolution Goal	**<2** hours Restore Time from 7 am – 6 pm EST Monday-Friday and **<4** hours nights, weekends and holidays	**<4** hours Restore Time from 7 am- 6 pm EST Monday-Friday and **<8** hours nights, weekends and holidays	**<12** hours Restore Time from 7 am -6 pm EST Monday –Friday and **<24** hours nights, weekends and holidays.	Within **5 business days**

If you have questions, please contact the MiHIN Help Desk:

- www.mihin.org/requesthelp
- Phone: (844) 454-2443
- Monday – Friday 8:00 AM – 5:00 PM (Eastern)

5. Legal Advisory Language

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 MiHIN 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
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 participating organization'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 data exchange solution is directed to the exchange of physical health information that may be exchanged without patient authorization under HIPAA, the participating organization 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).

Disclaimer: The information contained in this implementation guide was current as of the date of the latest revision in the Document History in this guide. However, Medicare and Medicaid policies are subject to change and do so frequently. HL7 versions and formatting are also subject to updates. Therefore, links to any source documents have been provided within this guide for reference. MiHIN applies its best efforts to keep all information in this guide up-to-date. It is ultimately the responsibility of the participating organization and sending facilities to be knowledgeable of changes outside of MiHIN's control.

6. Appendices

6.1 Appendix A – Message Examples

Please note that MIHIN only performs validation on the MSH (Message Header) segment of incoming HL7 messages as part of the onboarding process. Here is an example:

- MSH|^~\&|Lab1^1234^CLIA| Hospital X^23D0000000^CLIA|MDSS^ 2.16.840.1.114222.4.3.2.2.3.161.1.6377^ISO| MDSS^2.16.840.1.114222.4.3.2.2.3.161.1.6377^ISO |20160223134754-0500||ORU^R01^ORU_R01|20160223134754000008|P^T|2.5.1|||NE|NE|USA||||PHLabReportAck^^2.16.840.1.114222.4.10.3^ISO

7. Acronyms and Abbreviations

ACK	HL7 Acknowledgement Message
CLIA	Clinical Laboratory Improvement Amendments
DQA	Data Quality Assurance
DSA	Data Sharing Agreement
EHR	Electronic Health Record
ELR	Electronic Laboratory Result
FHIR	Fast Healthcare Interoperability Resources
HIE	Health Information Exchange
HIN	Health Information Network
HL7	Health Level Seven
MDCH	Michigan Department of Community Health
MDHHS	Michigan Department of Health and Human Services
MDSS	Michigan Disease Surveillance System
MiHIN	Michigan Health Information Network Shared Services
PHI	Protected Health Information
SFTP	Secure File Transfer Protocol
TDSO	Trusted Data Sharing Organization
VPN	Virtual Private Network

8. Definitions

Applicable Laws and Standards. In addition to the definition set forth in the Data Sharing Agreement, 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.

Conforming Message. A message that is in a standard format that strictly adheres to the implementation guide for its applicable use case.

Data Sharing Agreement. Any data sharing organization agreement signed by both MiHIN and a participating organization. Data sharing organization agreements include but are not limited to: 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, Direct Data Sharing Organization Agreement, Simple Data Sharing Organization Agreement, or other data sharing organization agreements developed by MiHIN.

Electronic Medical Record or Electronic Health Record (EMR/EHR). A digital version of a patient's paper medical chart.

Health Directory. The statewide shared service established by MiHIN contains contact information on health providers, electronic addresses, end points, and ESI, as a resource for authorized users to obtain contact information and to securely exchange health information.

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

Health Information. Any information, including genetic information, whether oral or recorded in any form or medium, that (a) is created or received by a health provider, public health authority, employer, life insurer, school or university, or healthcare clearinghouse; and (b) relates to the past, present, or future physical or mental health or condition of an individual; the provision of health care to an

individual; or the past, present, or future payment for the provision of health care to an individual.

Health Information Network (HIN). An organization or group of organizations responsible for coordinating the exchange of protected health information (PHI) in a region, state, or nationally.

Message. A mechanism for exchanging message content between the participating organization to MiHIN services, including query and retrieve.

Message Content. Information, as further defined in an Exhibit, which is sent, received, found or used by a participating organization to or from MiHIN services. Message content includes the message content header.

Message Header ("MSH") or Message Content Header. The MSH segment present in every HL7 message type that defines the Message's source, purpose, destination, and certain syntax specifics such as delimiters (separator characters) and character sets. It is always the first segment in the HL7 message, with the only exception being HL7 batch messages.

Michigan Health Information Network Shared Services. Michigan's state-designated, statewide Health Information Exchange.

MiHIN Infrastructure Service. Certain services that are shared by numerous use cases. MiHIN infrastructure services include, but are not limited to, Active Care Relationship Service (ACRS), Health Directory, and MIGateway®.

MiHIN Services. The MiHIN infrastructure services and additional services and functionality provided by MiHIN allowing the participating organizations to send, receive, find, or use information to or from MiHIN as further set forth in an exhibit.

Pilot Activity. The activities set forth in the applicable exhibit and typically include sharing message content through early trials of a new that is still being defined and is still under development and which may include participating organization feedback to MiHIN to assist in finalizing a and exhibit upon conclusion of the pilot activity.

Principal. A person or a system utilizing a federated identity through a federated organization.

Promoting Interoperability. Using certified EHR technology to improve quality, safety and efficiency of healthcare, and to reduce health disparities as further contemplated by title XIII of the American Recovery and Reinvestment Act of 2009.

Secure File Transfer Protocol (SFTP). The Secure File Transfer Protocol is a communication protocol for electronic mail transmission.

Trusted Data Sharing Organization (TDSO). An organization that has signed any form of agreement with MiHIN for data sharing.