



# Ambulatory C-CDAs Implementation Guide for Senders

*Version 2*  
*December 1<sup>st</sup>, 2025*

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# Document History

Date	Version	Sections Revised	Description	Modifier
7/21/2025	v1	All	Initial Draft	M. Allen
8/27/2025	v1	All	Updated all sections with review edits and additional specification information.	M. Allen
9/3/2025	V1	All	General Editing	S. Denhof
10/1/2025	V1	All	Application of review updates and final review.	M. Allen
12/1/2025	V2	Section 2.2	Updated Onboarding workflow diagram to reflect removal of account manager meeting and added clarification around IHE steps.	M. Allen, M. Gibbs

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# 1. Introduction

## 1.1 Purpose of Data Exchange Solution

*The purpose of the Ambulatory CCDA Sender data exchange solution is to help healthcare providers share a summary of a patient's treatment information at the time of discharge with other care team members and organizations.*

Statewide coordination in sharing patient information helps minimize adverse drug events (ADEs) and maximize cost benefits.

The purpose of the Ambulatory C-CDA Sender Data Exchange Solution (DES) is to help healthcare providers share a summary of a patient's treatment information at the time of discharge with other care team members and organizations. This could include physicians, practices, pharmacies, hospitals, and transitional facilities such as outpatient and skilled nursing facilities.

Additionally, this data exchange solution leverages the Michigan Health Information Network Shared Services (MiHIN) Active Care Relationship Service® (ACRS®) for notifying appropriate providers of changes to a patient's medication status.

## 1.2 Message Content

For the purposes of implementing this data exchange solution, message content refers to a document conforming to Clinical Document Architecture (CDA) standards.

# 1.3 Data Flow

## 1.3.1 Functional Data Flow

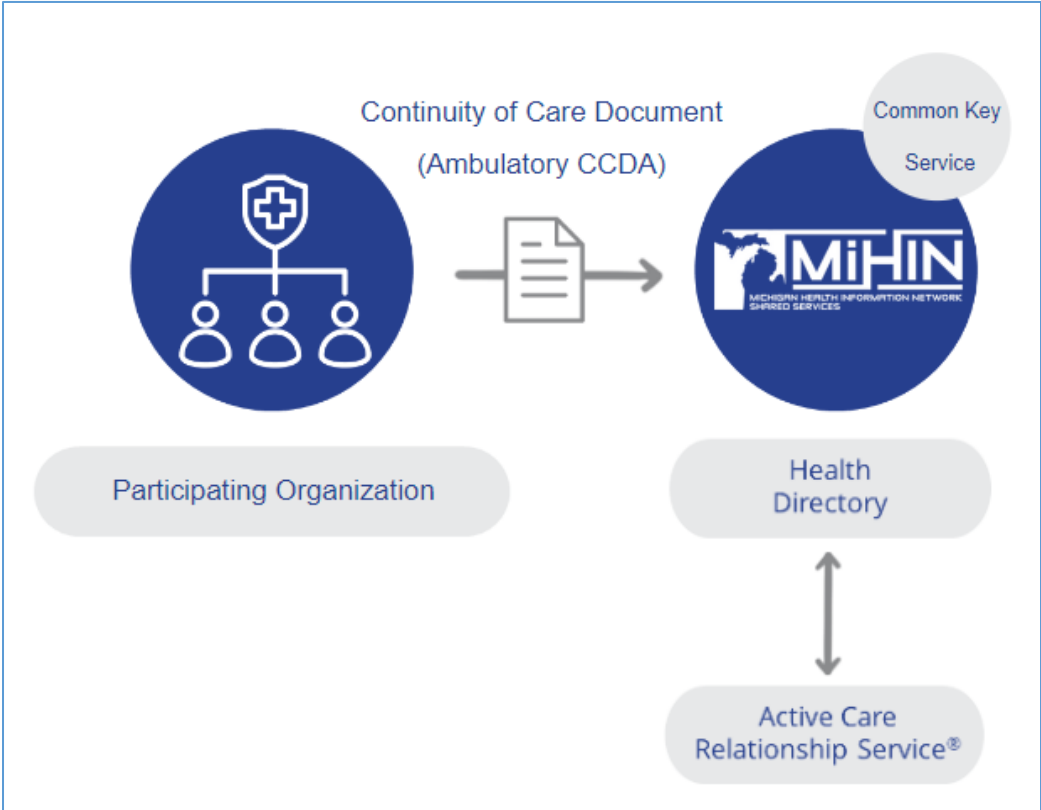


Figure 11. Ambulatory C-CDA Data Flow Diagram

1. Participating organization generates and sends an Ambulatory C-CDA to MiHIN via established transport
2. MiHIN receives ambulatory C-CDA and identity resolves message via the Active Care Relationship Service (ACRS®) and Common Key Service (CKS)

## 1.3.2 Actors

- **Actor:** Participating Organization
  - *Role:* Generates Ambulatory C-CDA based on information collected during a patient visit and sends it to MiHIN Depending on transport, they will also receive and ingest returned response messages. May also receive Ambulatory C-CDAs if also onboarded as an Ambulatory C-CDA Receiver.

■ **Actor:** HIN (MiHIN)

- *Role:* Receives Ambulatory C-CDAs from participating sending organizations and processes messages through ACRS, resolving patient identity and identifying care team members. May also send response messages back to sending organizations confirming receipt, depending on the transport method.

You can contact MiHIN at [www.mihin.org/requesthelp](http://www.mihin.org/requesthelp) for more information.

For more information on the HL7® C-CDA documents, please refer to the following link: <http://www.healthit.gov/policy-researchers-implementers/consolidated-cda-overview>.

## 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), here applicable
- MiHIN's Exhibit A Agreement (Found on the MiHIN Legal Portal)
- Participant Agreement (Found on the MiHIN Legal Portal)
- Must select the appropriate data exchange solution on the MiHIN Legal Portal in addition to the above agreements.

To initiate the legal onboarding contact, email [help@mihin.org](mailto:help@mihin.org).

#### 2.1.2 Technical Requirements

The following data exchange solution implementations and technical requirements will need to be conducted for the Ambulatory C-CDA Data Exchange Solution to function.

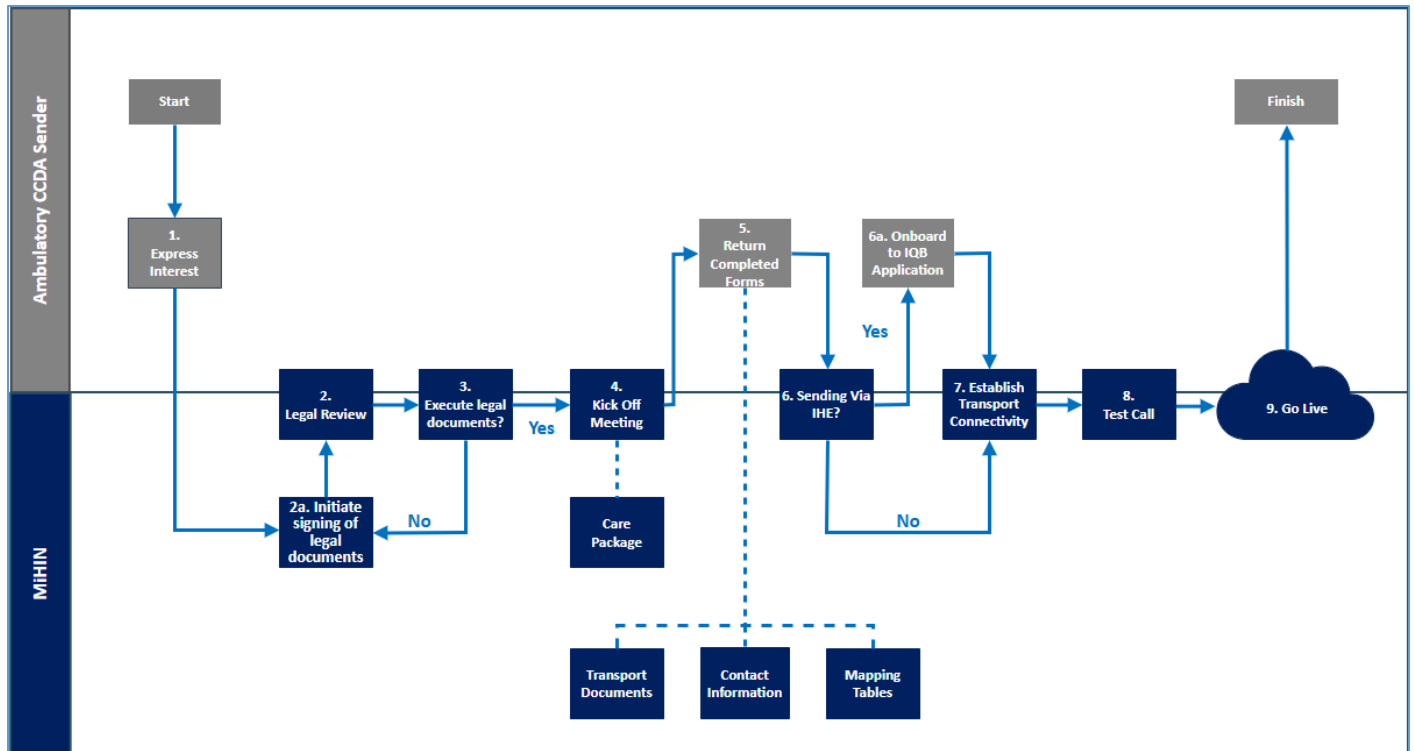
##### 2.1.2.1 Required Data Exchange Solution Implementations

There are no data exchange solution implementations required for an organization to be able to participate as an Ambulatory C-CDA Sender.

##### 2.1.2.2 Technical Capability Requirements

- Organizations must be able to generate a clinical care document (CCD) that meets established specifications as laid out in [Section 3](#).
- Participating organizations must be able to establish a connection with MiHIN via one of the transport methods laid out in [Section 2.3](#).
- Organizations that will be contributing Ambulatory C-CDAs via IHE transactions must have onboarded to the Intelligent Query Broker application and have access to an application or engine that can perform provide and register transactions.

## 2.2 Ambulatory C-CDA Sender Onboarding Process



**Figure 2. Ambulatory CCDA Sender Onboarding Process Workflow**

- Express interest in participating in the Ambulatory C-CDA Data Exchange Solution
- Execute legal documents
- Customer Success Team distributes Ambulatory C-CDA care package
- Kick-off meeting with the Customer Success Team
- Exchange required documents
  - Onboarding Contact Form (if not already collected)
  - Transport Document
  - Completed Mapping Documents
    - OID Mapping Table Template
    - Subtype OID Mapping Template (If using DSM Transport)
- Establish transport method/connectivity
  - REST API
  - DSM
  - SFTP
  - IHE Provide and Register
- Test Call
- 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 the HIN. 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](http://www.mihin.org/requesthelp) early in the onboarding process. Currently the ONLY transport methods the HIN accepts are:

- **REST API** - Representational State Transfer Application Programming Interface
- **DSM** - Direct Secure Messaging
- **SFTP** - Secure File Transfer Protocol
- **IHE PnR** - IHE “XDS.b Provide and Register Document Set” transaction

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

1. Prior to setting up the selected transport or sending any messages— test or otherwise— onboarding organizations will need to provide the following information so MiHIN can update its internal tables to recognize and properly process and route messages from the sending organization. This information is as follows:
  - a. Source connectivity information for the sending organizations
    - i. Source IP if sending via REST API
    - ii. Source DSM address(es) if sending via Direct Secure Messaging
    - iii. IHE Protocol URL and Endpoints, and onboarding organization’s certificate if using IHE Provide and Register (PnR) connections
  - b. Facility name(s) and the associated OID(s) that will be sending Ambulatory C-CDAs
  - c. OID for the managing organization that the sending facility belongs to; can be multiple facilities
  - d. Xpath to facility OID mapping relationship
  - e. ACRS population name (optional if using an Ambulatory C-CDA to generate Real-Time ACRS relationships)
  - f. Subtype and Xpath mapping relationship
    - i. ambulatory

2. The organization selects one or more supported transport methods and establishes connectivity with MiHIN. This step varies based on the method selected:
  - a. Representational State Transfer Application Programming Interface (REST API) – Organizations will need to provide their email address so that Cognito credentials can be created and distributed and their source IP can be whitelisted. Organizations connecting via this transport will need to contact MiHIN's OAuth2 endpoint, listed in [Section 3.1](#) and acquire a token that will be used to make a connection with the MiHIN's REST API URL endpoint, also listed in [Section 3.1](#). For more information on this process see [Section 3.2.4](#).
  - b. Direct Secure Messaging (DSM)– MiHIN accepts Direct Secure Messages from Health Internet Service Provider (HISPs) that have EHNAC-DTAAP (DirectTrust) accreditation. Test messages are sent to verify HISP connectivity (“ping pong”). The Message Header section in the test messages is verified for appropriate routing configuration.
  - c. Secure File Transfer Protocol (SFTP) – Organizations must have a MiHIN-SFTP account provisioned for them by MiHIN with the appropriate submission and return folders for the Ambulatory C-CDA Data Exchange Solution by submitting an SFTP request form containing their IP address, intended account holder email, and cell phone. MiHIN will configure file paths for all needed folders and provide login credentials for access.

IHE XDS.b Provide and Register Document Set (IHE PnR) – Organizations wishing to participate with IHE transactions must first be onboarded to the Intelligent Query Broker (IQB) application where they will specify which IHE protocols and associated transactions they will be participating in. Organizations will need to return the IQB onboarding form, install MiHIN's public certificate, and provide a public certificate of their own for exchange. For more information, please refer to the IQB documentation, which can be requested via the MiHIN Help Desk portal.

3. Testing will differ depending on the transport mechanism selected:
  - a. **DSM and SFTP** – Testing will be conducted by having the onboarding facility (or facilities) send a test message to the pre-production endpoint specified in [Section 3.1](#). MiHIN will monitor inbound messages and confirm receipt. For DSM and SFTP transport methods,

this is performed by internal MiHIN staff monitoring the DSM address or the SFTP submission folder and confirming the receipt of sent messages.

- b. **REST API** – For REST API transport, testing will be conducted by having the onboarding facility(or facilities) send a test message to the pre-production URL endpoint specified in [Section 3.1](#). MiHIN will monitor inbound traffic for sent messages, and return responses will be sent back to the organization upon receipt. For an example of the response format returned for REST API, please see [Appendix A](#).
  - c. **IHE Provide and Register Document Set** – Testing will be conducted by the onboarding facility by submitting a test CCD via IHE transaction. Test transactions will be monitored, and a Simple Object Access Protocol (SOAP) API response will be sent to the organization confirming receipt. For an example of this response, please refer to [Appendix A](#).
4. MiHIN will also confirm if the C-CDA is processed and stored in its Clinical Data Repository (CDR) correctly. Once Ambulatory C-CDAs have been received and confirmed, and messages are showing correctly in the CDR, testing is considered complete.
  5. Upon completion of testing, a go-live call will be conducted. During this process, configuration settings are promoted to the MiHIN production environment, and the onboarding facilities will generate and send production Ambulatory C-CDAs to the production endpoint specified in [Section 3.1](#). MiHIN will monitor inbound traffic and return an applicable response upon receipt. Once Ambulatory C-CDAs and responses have been received successfully, and production messages are accepted by the CDR and Longitudinal Record Viewer, the organization is considered live.

# 3 Specifications

## 3.1 Overview

### 3.1.1 Environments

#### ■ MiHIN Pre-Production

- Ambulatory C-CDA Rest API Endpoint: [https://messages.preprod.mihin.services/send?message\\_type=ccda](https://messages.preprod.mihin.services/send?message_type=ccda)
- Cognito oAuth2 Endpoint: <https://mitp-adt-hub-preprod.auth.us-east-1.amazoncognito.com/oauth2/token>
- Exchange C-CDA General DSM Address Endpoint: [ccd.preprod@direct.mihin.net](mailto:ccd.preprod@direct.mihin.net)
  - Subtype: ambulatory; [ccda\\_ambulatory.preprod@direct.mihin.net](mailto:ccda_ambulatory.preprod@direct.mihin.net)
- IHE Protocol Endpoint: Please refer to the Intelligent Query Broker (IQB) Implementation Guide for a complete list of URL/IP pre-prod endpoints
- SFTP Pre-Production Hostname:
  - Server: sftp.preprod.mihin.services
  - Folder Structure: *SenderOID*/ccda\_ambulatory/upload

#### ■ MiHIN Production

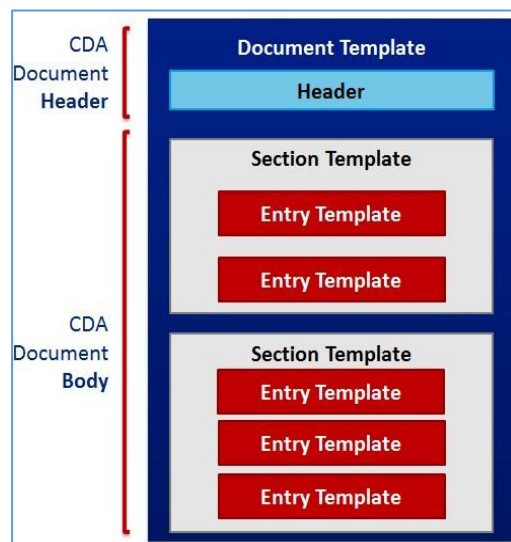
- Ambulatory C-CDA Rest API Endpoint: [https://messages.mihin.services/send?message\\_type=ccda](https://messages.mihin.services/send?message_type=ccda)
- Cognito oAuth2 Endpoint: <https://mitp-adt-hub-prod.auth.us-east-1.amazoncognito.com/oauth2/token>
- Exchange C-CDA General DSM Endpoint: [ccd@direct.mihin.net](mailto:ccd@direct.mihin.net)
  - Subtype: ambulatory; [ccda\\_ambulatory.prod@direct.mihin.net](mailto:ccda_ambulatory.prod@direct.mihin.net)
- IHE Protocol Endpoint: Please refer to the Intelligent Query Broker (IQB) Implementation Guide for a complete list of URL/IP production endpoints
- SFTP Production Hostname:
  - Server: sftp.mihin.services
  - Folder Structure: *SenderOID*/ccda\_ambulatory/upload

## 3.2 General Message Requirements

### 3.2.1 C-CDA File Structure and Specifications

Organizations provide summary documents via a C-CDA upon discharge to MiHIN. A care summary should be sent for visits upon discharge. Specifications are outlined below:

- C-CDA should be sent in .xml format. Style sheet format is **not** required. Recipients will develop custom style sheet based on individual requirements.
- To reduce customization, sending facilities may send the entire care summary record, ensuring that the information in [section 3.2.2](#) is captured.
- C-CDA message must be sent as an XDM.zip file.
  - **Note:** This encoding occurs automatically with most HISP vendors upon sending.
- C-CDA must contain an indicator specifying organization type in the following valid xpath:
  - /ClinicalDocument/componentOf/encompassingEncounter/code/@code
  - Ambulatory code = AMB



**Figure 3. C-CDA File Structure**

### 3.2.2 C-CDA Required Fields

#### 3.2.2.1 Clinical Data Repository Field Specifications

Organizations submitting C-CDAs must adhere to the following specifications for documents to be ingested properly in the clinical data repository (CDR).

- The combination of the MRN and OID must be the very first line in the PatientRole xpath
  - MRN = Unique Identifier from the facility/managing organizations.
    - Alphanumeric
    - Anything the organization consistently uses to identify their patients
  - OID = Organization Identifier
- Properly Formatted Patient ID in patientRole xpath
  - Example:
 

```
<id assigningAuthorityName="SHCPI"
root="1.2.840.114350.1.13.200.2.7.5.737384.49" extension="xxxxxxxx" />
```
- For senders only sending a social security number:
  - If a C-CDA has the below root OID only, it will be rejected:
 

```
<id assigningAuthorityName="Social Security Administration"
root="2.16.840.1.113883.4.1" extension="xxxxxxxx" />
```

### 3.2.2.2 TOC Viewer Message Specifications

For C-CDAs, both Ambulatory and Med Rec, to be linked to ADTs and displayed in the MIGateway TOC Viewer, the following specifications must be met:

- Specific fields between the ADT and C-CDA in question must be linked. This link is indicated in the ADT Table by the medrec\_id column being the primary key of the Med Rec Table and has medrec = 1. The matching criteria are shown below:
  1. Patient First Name - (ADT)PID-5.2  
(CCD)/patient/name/given[not(@\*)][1]/text()
  2. Patient Last Name - (ADT)PID-5.1 (CCD)/patient/name/family/text()
  3. Patient DOB - (ADT)PID-7 (CCD)/patient/birthTime/@value
  4. Patient Gender - (ADT)PID-8  
(CCD)/patient/administrativeGenderCode/@code
  5. Encounter Id - (ADT)PV1.19  
(CCD)/ClinicalDocument/componentOf/encompassingEncounter/id/@extension

## 3.3 Transport Specifications

### 3.3.1 Sending via Direct Secure Messaging

C-CDA files that are sent to MiHIN via DSM as email attachments must adhere to the following specifications:

1. There shall be only one CDA file attached per email.
2. The appropriate MiHIN DSM email address must be in the “To” line. An error will occur if it is in the carbon-copy (cc) line of the outgoing message.

### 3.3.2 Sending via REST API

Those senders interested in the REST API method should follow these steps:

1. Onboarding organizations will need to provide an email address that Cognito credentials can be provided to. They will also need to provide their source IP so it may be whitelisted.
2. MiHIN will have the CognitoUser configured on their end of the connection.
3. MiHIN will send the Cognito credentials— specifically the *clientId* and *secret*— to the authorized user via the provided email address. Each will be sent via a separate email for security purposes.
4. Organization will participate in the Rest API Server Test scheduled with MiHIN to ensure conformity to these specifications and connectivity. The organization will need to make a call to MiHIN’s OAuth2 endpoint and have a token assigned to be used for the forthcoming API call. OAuth2 endpoints for pre-production and production are listed in [section 3.1](#).

These tokens are acquired through making a call to the following URLs and must make sure they are using tokens from the appropriate environments to make calls to the appropriate environment end point, specifically:

a. **Pre-Production** –

- i. Token: <https://mitp-adt-hub-preprod.auth.us-east-1.amazoncognito.com/oauth2/token> used for:
- ii. Endpoint:  
[https://messages.preprod.mihin.services/send?message\\_type=ccda](https://messages.preprod.mihin.services/send?message_type=ccda)

b. **Production** –

- i. Token: <https://mitp-adt-hub-prod.auth.us-east-1.amazoncognito.com/oauth2/token> used for:

- ii. Endpoint:  
[https://messages.mihin.services/send?message\\_type=ccda](https://messages.mihin.services/send?message_type=ccda)
5. During testing, organizations will request the appropriate token and then send test Ambulatory C-CDAs to the specified endpoint. Response messages will be returned based on confirmation of receipt. Examples of these responses are listed in [Appendix A](#).

### 3.3.2.1 Ambulatory C-CDA Sender REST API Specifications

#### *Authentication*

- CognitoUser is hosted by MiHIN
- Use MiHIN-provided Cognito Credentials
  - *ClientID*
  - *Secret*
- Credentials will be used to make a call to MiHIN's OAuth2 endpoint to get a token assigned which will be used for the REST API call.

#### *Expected Payload*

- HL7 C-CDA in XML (Extended Mark-Up Language) format

### 3.3.3 Sending via IHE Protocol

#### 3.3.3.1 Ambulatory C-CDA Sender IHE Protocol Specifications

For IHE Protocol specifications, please refer to the Intelligent Query Broker (IQB) Implementation Guide.

## 4. Production Support

	Severity Levels			
	1	2	3	4
<b>Description</b>	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: <ul style="list-style-type: none"> <li>High impact risk or actual occurrence of patient care affected or operational impairment</li> <li>Business critical service has a partial failure for multiple TDSOs</li> <li>A critical service is online however, operating in a degraded state and having a significant impact on multiple TDSOs</li> </ul>	Service component restricted in one of the following ways: <ul style="list-style-type: none"> <li>A component is not performing as documented or there are unexpected results</li> <li>Business critical service has failed two or more TDSOs</li> <li>Critical service is usable however, a workaround is available, or less significant features are unavailable</li> </ul>	No operational impact to MiHIN. A non-critical service component is malfunctioning, causing minimal impact, or a test system is down.
<b>Initiation Method</b>	<i>Call (844) 454-2443 and submit a ticket online at <a href="http://www.mihin.org/requesthelp">www.mihin.org/requesthelp</a></i>	<i>Call (844) 454-2443 and submit a ticket online at <a href="http://www.mihin.org/requesthelp">www.mihin.org/requesthelp</a></i>	<b>Submit</b> a ticket online at <a href="http://www.mihin.org/requesthelp">www.mihin.org/requesthelp</a>	<b>Submit</b> a ticket online at <a href="http://www.mihin.org/requesthelp">www.mihin.org/requesthelp</a>
<b>Initial Response</b>	Within <b>30 minutes</b>	Within <b>30 minutes</b>	Within <b>3 business hours</b>	Within <b>6 business hours</b>
<b>Resolution Goal</b>	<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 <b>5 business days</b>

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

- [www.mihin.org/requesthelp](http://www.mihin.org/requesthelp)
- Phone: (884) 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 use case 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

#### 6.1.1 REST API Response Example

*from log group*

*/aws/api-gateway/adt-hub-api-in-usqhin-prod*

*requestId: 05be2753-d197-4969-8697-165590a3957d, ip: 52.204.176.226, caller: -, user: -, requestTime: 27/Aug/2025:17:00:52 +0000, httpMethod: POST, resourcePath: /send, status: 200, protocol: HTTP/1.1, responseLength: 71*

#### 6.1.2 SOAP API Response Example

```
<?xml version="1.0" encoding="UTF-8"?>
<soap:Envelope
  xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
  xmlns:rs="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0">
<soap:Header/>
<soap:Body>
<rs:RegistryResponse status="urn:oasis:names:tc:ebxml-
regrep:ResponseStatusType:Success"/>
</soap:Body>
</soap:Envelope>
```

## 7. Acronyms and Abbreviations

<b>ACK</b>	Acknowledge	<b>JSON</b>	JavaScript Object Notation
<b>ACRS®</b>	Active Care Relationship Service®	<b>MiHIN</b>	Michigan Health Information Network
<b>ADE</b>	Adverse Drug Events	<b>NPI</b>	National Provider Identifier
<b>API</b>	Application Programming Interface	<b>OID</b>	Object Identifier
<b>ADE</b>	Adverse Drug Event	<b>PHI</b>	Protected Health Information
<b>C-CDA</b>	Consolidated – Clinical Document Architecture	<b>REST</b>	Representational State Transfer
<b>CDA</b>	Clinical Document Architecture	<b>SFTP</b>	Secure File Transfer Protocol
<b>DSM</b>	Direct Secure Messaging	<b>VPN</b>	Virtual Private Network
<b>EHNAC-DTAAP</b>	Electronic Healthcare Network Accreditation Commission Direct Trusted Agent Accreditation Program	<b>XCA</b>	Cross-Community Access
<b>EHR</b>	Electronic Health Record	<b>XDM</b>	Cross-Enterprise Document Media Interchange
<b>HISP</b>	Health Internet Service Provider	<b>XML</b>	Extensible Markup Language
<b>HL7®</b>	Health Level Seven®		

## 8. Definitions

**Active Care Relationship (ACR).** (a) For health providers, a patient who has been seen by a provider within the past 24 months, or is considered part of the health provider's active patient population they are responsible for managing, unless notice of termination of that treatment relationship has been provided to Michigan Health Information Network Shared Services (MiHIN); (b) for payers, an eligible member of a health plan; (c) an active relationship between a patient and a health provider for the purpose of treatment, payment and/or healthcare operations consistent with the requirements set forth in Health Insurance Portability and Accountability Act (HIPAA); (d) a relationship with a health provider asserted by a consumer and approved by the health provider; or (e) any person or Trusted Data Sharing Organization authorized to receive message content under an exhibit which specifies that an ACR may be generated by sending or receiving message content under that exhibit. ACR records are stored by MiHIN in the Active Care Relationship Service®.

**Active Care Relationship Service® (ACRS®).** The Michigan Health Information Network Shared Services infrastructure service that contains records for those Trusted Data Sharing Organizations, their participating organizations participants or any health providers who have an active care relationship with a patient.

**Admission, Discharge, Transfer (ADT).** An event that occurs when a patient is admitted to, discharged from, or transferred from one care setting to another care setting or to the patient's home. For example, an Admission, Discharge, Transfer (ADT) event occurs when a patient is discharged from a hospital. An ADT event also occurs when a patient arrives in care setting such as a health clinic or hospital.

**ADT Message.** A type of Health Level Seven® (HL7®) message generated by healthcare systems based upon Admission, Discharge, Transfer (ADT) events and the HL7 *"Electronic Data Exchange in Healthcare"* standard. The HL7 ADT message type is used to send and receive patient demographic and healthcare encounter information, generated by source system(s). The ADT messages contain patient demographic, visit, insurance, and diagnosis information.

**ADT Notification.** An electronic notification that a given patient has undergone an Admission, Discharge, Transfer (ADT) event. An ADT Notification is not a complete ADT Message.

**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.

**Consolidated – Clinical Document Architecture (C-CDA).** A Health Level Seven (HL7) standard for structuring and exchanging clinical health information, typically in Extensible Markup Language (XML), to support interoperability and care transitions

**Clinical Document Architecture (CDA).** A Health Level Seven International (HL7) standard for creating and exchanging electronic clinical documents.

**Data Sharing Agreement.** Any data sharing organization agreement signed by both Michigan Health Information Network Shared Services (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.

**Exhibit.** Collectively, a use case exhibit or a pilot activity exhibit.

**Health Level Seven® (HL7®).** An interface standard and specifications for clinical and administrative healthcare data developed by the Health Level Seven (HL7) organization and approved by the American National Standards Institute. 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 healthcare to an individual; or the past, present, or future payment for the provision of healthcare to an individual.

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

**Health Plan.** An individual or group plan that provides, or pays the cost of medical care (as “group health plan” and “medical care” are defined in section 2791(a)(2) of the Public Health Service Act, 42 U.S.C. 300gg-91(a)(2)). Health plan further includes those entities defined as a health plan under HIPAA, 45 C.F.R 160.103.

**Health Professional.** Means (a) any individual licensed, registered, or certified under applicable Federal or State laws or regulations to provide healthcare services; (b) any person holding a nonclinical position within or associated with an organization that provides or coordinates healthcare or healthcare related services; and (c) 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, care managers, care coordinators, receptionists and clerks.

**Implementation Guide (IG).** The document providing technical specifications related to message content and transport of message content between participating organization, Michigan Health Information Network Shared Services, and other Trusted Data Sharing Organizations. Use case implementation guides are made available via URLs in exhibits.

**Integrating the Healthcare Enterprise (IHE).** Initiative by healthcare professionals and industry to improve how computer systems share information, promoting interoperability and better patient care.

**Message.** A mechanism for exchanging message content between the participating organization to Michigan Health Information Network Shared 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 Michigan Health

Information Network Shared Services. Message content includes the message content header.

**Message Header (“MSH”) or Message Content Header.** The Message Header (MSH) segment present in every Health Level Seven® (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.** The health information network for the state of Michigan.

**MiHIN Infrastructure Service.** Certain services that are shared by numerous use cases. Michigan Health Information Network Shared Services infrastructure services include, but are not limited to, Active Care Relationship Service® (ACRS®), Health Directory (HD), Statewide Consumer Directory (SCD), and the Medical Information Direct Gateway (MIDIGATE®).

**MiHIN Services.** The Michigan Health Information Network Shared Services (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.

**Patient Data.** Any data about a patient or a consumer that is electronically filed in a participating organization or participating organization participant’s systems or repositories. The data may contain protected health information (PHI), personal credit information (PCI), and/or personally identifiable information (PII).

**Promoting Interoperability.** Using certified electronic health record 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.

**Summary.** The document providing the executive summary, business justification and value proposition of a use case. Use case summaries are provided by Michigan Health Information Network Shared Services (MiHIN) upon request and via the MiHIN website at <https://mihin.org/use-case-categories/>.

**Cross-Community Access (XCA).** The Integrating the Healthcare Enterprise® standard for Cross-Community Access which provides specifications to query and retrieve patient relevant health information held by other communities.

**Cross-Enterprise Document Sharing (XDS.b).** IHE Integration Profile that focuses on providing a standards-based specification for managing the sharing of XDS documents across healthcare enterprises.