



# Discharge Medication Reconciliation Implementation Guide for Senders

*Version 12*  
*October 8<sup>th</sup>, 2025*

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# Document History

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# 1. Introduction

## 1.1 Purpose of Data Exchange Solution

*Helps healthcare providers share patient medication information at the time of discharge with other care team members and organizations, including physicians, practices, pharmacies, hospitals, and transitional facilities such as outpatient and skilled nursing facilities.*

When a patient's medications change it is critically important to check the patient's medication list to be sure there are no problems with new, different or missing medicines. "Medication reconciliation" is the detailed process of checking the accuracy of a patient's medications, particularly when those medications have changed. Finding and correcting medication discrepancies helps avoid errors such as omissions, duplications, dosing errors or negative drug interactions. Regular confirmation of a patient's medications can also help confirm the patient is correctly following a treatment plan.

Medication reconciliation becomes critical when a patient moves from one care setting to another, such as being admitted to or discharged from a hospital. These "transitions of care" very commonly involve prescription of new medications which may interact negatively with a patient's existing medications.

The medication reconciliation process includes a comparison of existing and previous medication regimens and should occur at:

- Every transition of care in which new medications are ordered
- When existing orders are rewritten or adjusted
- When patients add nonprescription medications to their self-care

## 1.2 Message Content

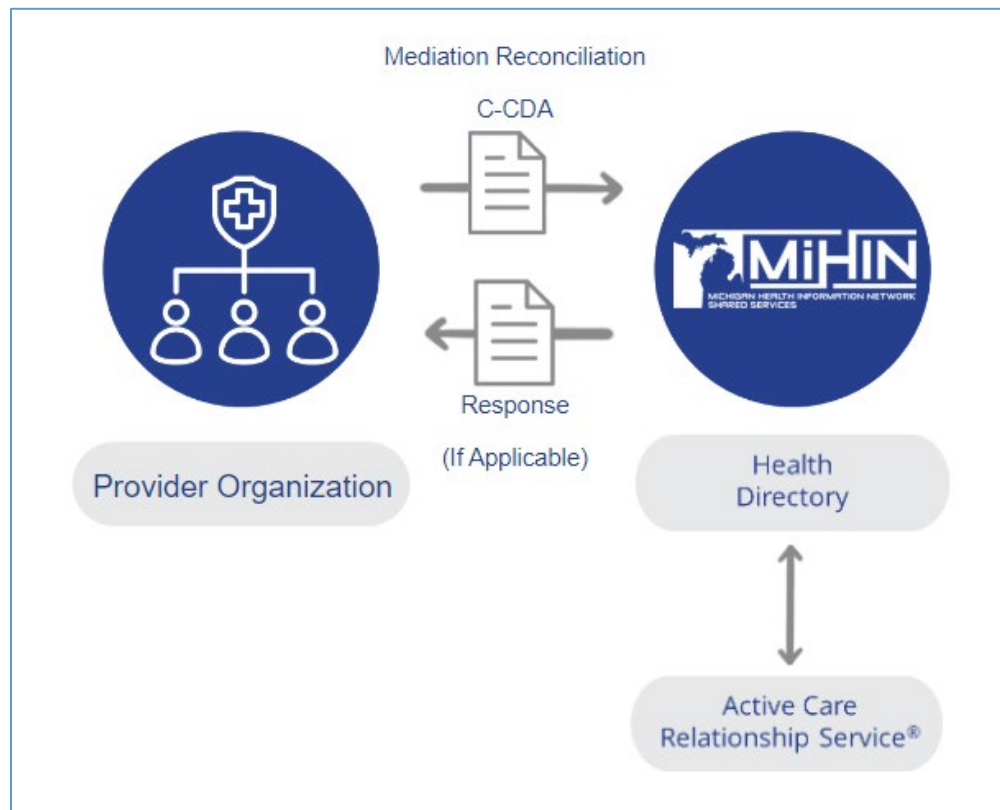
For this data exchange solution, message content refers to a document conforming to Clinical Document Architecture (CDA) standards.

Hospitals provide agreed upon transition of care documents via a Consolidated – Clinical Document Architecture (C-CDA) to be generated and sent to the statewide service.

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>.

## 1.3 Data Flow

### 1.3.1 Functional Data Flow



**Figure 1. Discharge Medication Reconciliation Data Flow**

1. Participating provider organization generates a Medication Reconciliation C-CDA, triggered by the discharge of a patient from the organization.
2. Sending organization sends the Medication Reconciliation C-CDA to HIN via established transport within 24 hours.
3. MiHIN receives the C-CDA and processes it through the Active Care Relationship Service® (ACRS®) and confirms the receipt of the message, either through direct manual confirmation, or via a generated response sent back to the Provider Organization.

### 1.3.2 Actors

- **Actor:** Provider Organization
  - *Role:* Create Medication Reconciliation C-CDA at time of Discharge for a patient and sends it to MiHIN via established transport. Receives and ingests any applicable responses sent from HIN.
- **Actor:** HIN (MiHIN)
  - *Role:* Receives Medication Reconciliation information C-CDs from the sending organization and process and routes it for receiving organizations. Confirms receipt of messages and generates response if applicable to the chosen transport to sending organizations to confirm receipt.

The data exchange solution summary is available online at:

<https://mihin.org/resourcehub/>

You can contact MiHIN at [www.mihin.org/requesthelp](http://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)(If 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 Discharge Medication Reconciliation Data Exchange solution to function.

##### 2.1.2.1 Data Exchange Solution Requirements

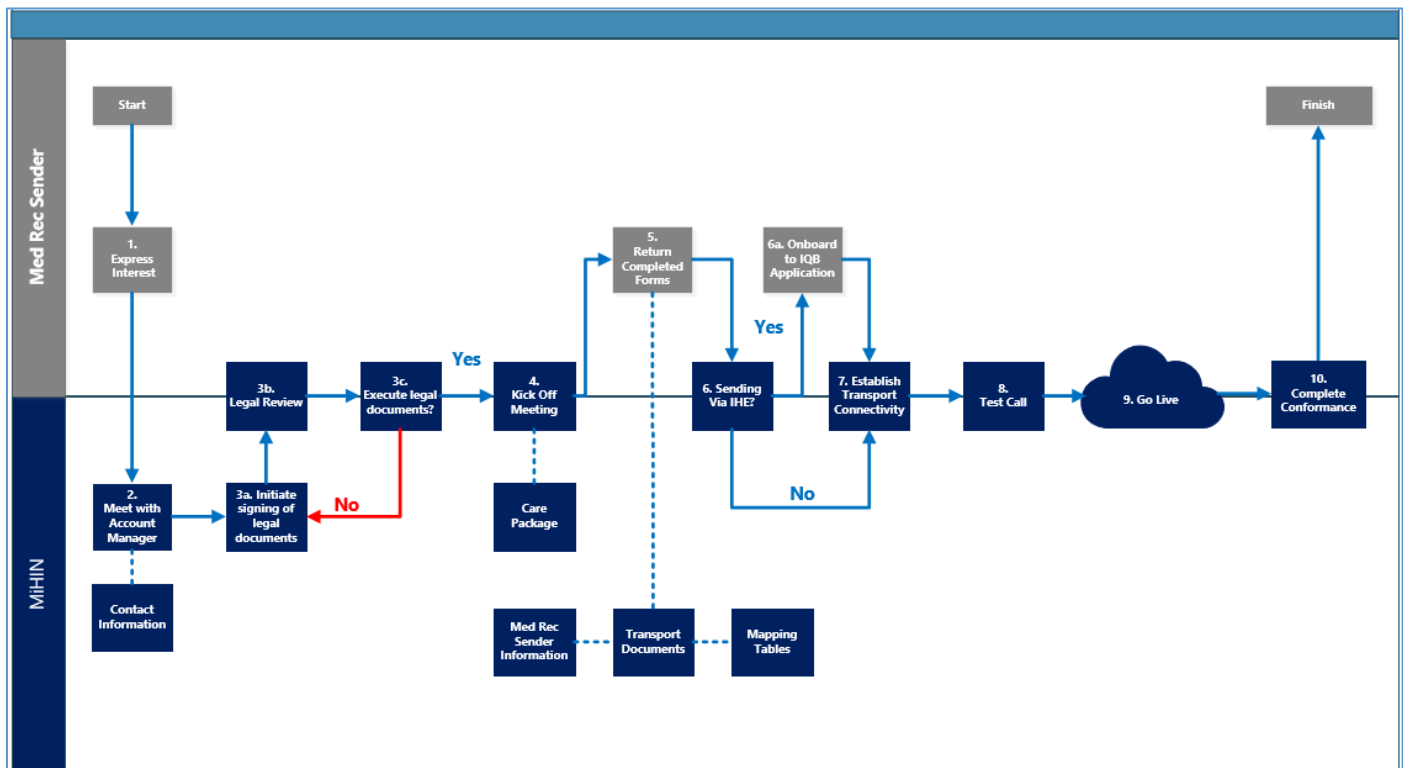
- There are no data exchange solution implementations required for participation as a Medication Reconciliation C-CDA sender.
  - **Please Note:** While there are no data exchange requirements to send Medication Reconciliation C-CDA's, if an organization chooses to use these messages for the establishment of Real-Time ACRS<sup>®</sup> relationships, the organization will need to onboard both technically and legally to the ACRS<sup>®</sup> data exchange solution.

##### 2.1.2.2 Other Technical Requirements

Onboarding Sender Organizations must be able to meet the following pre-requisites and requirements for the Discharge Medication Reconciliation data exchange solution to function:

- Organizations must be able to generate a CCD that contains medication reconciliation information that meets the C-CDA template structure and standards described in [Section 1.2](#) and [Section 3](#).
- An organization's generated Medication Reconciliation C-CDAs must be able to meet conformance thresholds described in [section 2.3](#).
- Organization must be able to establish transport connectivity with MiHIN through one of its support transport mechanisms, described in [section 2.3](#).
- Organizations that will be contributing Med Rec 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 Discharge Medication Reconciliation Inbound Onboarding Process



**Figure 2 Onboarding Workflow Diagram for Discharge Medication Reconciliation Senders**

- Express interest in participating in the Data Exchange Solution
- Execute legal documents



- Distribute Discharge Medication Reconciliation 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
    - Subtype Mapping (If using DSM Transport)
- Establish transport method/connectivity
  - REST API
  - DSM
  - SFTP
  - IHE Provide and Register
- Complete validation process
- 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 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: Source IP Information, and onboarding organizations' certificate if using IHE Provide and Register (PnR) connections
  - b. Facility Name(s) and the associated OID(s) that will be sending Medication Reconciliation C-CDAs
  - c. OID for the managing organization that the sending facility(s) belongs to
  - d. Xpath to facility OID mapping relationship
  - e. ACRS Population Name (Optional if using C-CDA to generate real-time ACRS relationships)
  - f. Subtype and Xpath mapping relationship
    - i. Med Rec
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 – Organizations will need to provide their email address so that Cognito credentials can be created and distributed and their source IP for whitelisting. 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](#).
  - a. Direct Secure Messaging – 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.
  - b. Secure File Transfer Protocol – Organizations must have a MiHIN-hosted SFTP account provisioned for them with the appropriate submission and return folders for the Discharge Medication Reconciliation data exchange solution but 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.

- c. **IHE XDS.b Provide and Register Document Set** – Organizations wishing to participate with IHE transactions, must first be onboarded to the 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 Intelligent Query Broker 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(s) 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 confirms the receipt of sent messages.
  - b. **REST API** – For REST API transport, testing will be conducted by having the onboarding facility(s) 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 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 Medication Reconciliation 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 Med Rec CCDs to the Production endpoint specified in [Section 3.1](#). MiHIN will monitor for inbound traffic and return an applicable response upon receipt. Once Med Recs and any

applicable 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

- Med Rec 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.amazonaws.com/oauth2/token>
- Exchange C-CDA General DSM Endpoint: [ccd.preprod@direct.mihin.net](mailto:ccd.preprod@direct.mihin.net)
  - Subtype: medrec; [ccda\\_medrec.preprod@direct.mihin.net](mailto:ccda_medrec.preprod@direct.mihin.net)
- SFTP Pre-Production Server URL:
  - Server: [sftp.preprod.mihin.services](https://sftp.preprod.mihin.services)
  - Folder Structure: *SenderOID/ccda\_medrec/upload*
- IHE Protocol Endpoint: Please refer to the Intelligent Query Broker (IQB) Implementation Guide for a complete list of URL/IP pre-prod endpoints.

#### ■ MiHIN Production

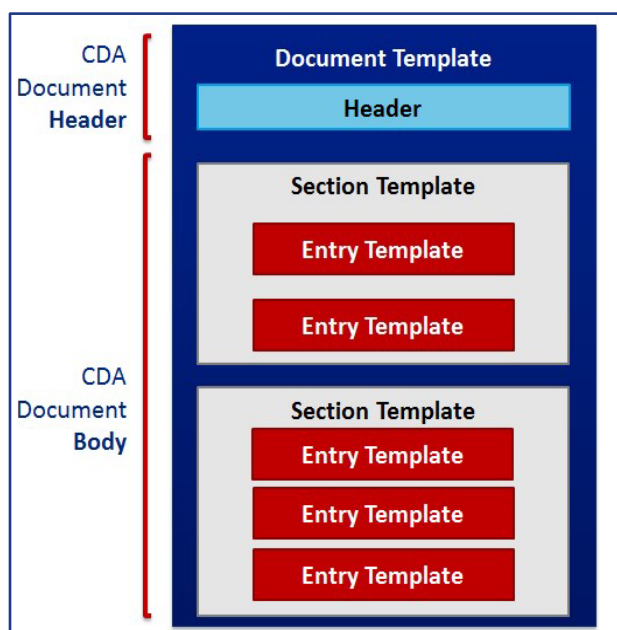
- Med Rec Rest API Endpoint:  
[https://messages.mihin.services/send?message\\_type=ccda](https://messages.mihin.services/send?message_type=ccda)
- Cognito oAuth2 endpoint:  
<https://mitp-adt-hub-prod.auth.us-east-1.amazonaws.com/oauth2/token>
- Exchange C-CDA General DSM Endpoint: [ccd@direct.mihin.net](mailto:ccd@direct.mihin.net)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

## 3.2 General Specification Requirements

### 3.2.1 C-CDA File Structure and Specifications

Hospitals provide the medication section of a care summary document via a C-CDA upon discharge to MiHIN. A care summary should be sent for inpatient and emergency department visits upon discharge **within 24 hours**. 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 hospitals may send the entire care summary record, ensuring that the information below is captured.
- Sending hospital will send inpatient discharge information and emergency department discharge information.
- C-CDA message must be sent as an XDM.zip file. Note: this encoding occurs automatically with most HISP vendors upon sending.



**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 (Smile 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="xxxxxxxxx" />
```

- 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="xxxxxxxxx" />

### 3.2.2.2 Conformance Field Specifications

Organizations sending C-CDA and seeking to meet established conformance specifications should refer to the following XPaths used in the XML document. For more information, please refer to the [Conformance Reporting User Guide](#).

1. Patient identifying/demographic information (Header Section of C-CDA)
  - a. Provider Organization
  - b. Facility OID
  - c. EMR
  - d. Patient First Name
  - e. Patient Last Name
  - f. Patient Date of Birth
  - g. Patient Gender
  - h. Patient Social Security Number (SSN)
  - i. Patient Address
  - j. Patient City
  - k. Patient State
  - l. Patient Zip Code
  - m. Visit ID
  - n. Progress Note
  - o. Attending Provider First Name
  - p. Attending Provider Last Name
  - q. Attending Provider NPI
  - r. Attending Provider Phone
2. Other information (Component Section of C-CDA)
  - a. Admission Medications
  - b. Active Problems
  - c. Advanced Directives
  - d. Allergies
  - e. Chief Complaint

- f. Discharge Instructions
- g. Encounter Type
- h. Functional Status
- i. Immunizations
- j. Plan of Care
- k. Procedures
- l. Reason for Referral
- m. Results/Laboratory Values
- n. Social History
- o. Tests Ordered
- p. Visit Diagnosis
- q. Visit Diagnosis Description
- r. Vital Signs
- s. Discharge Medication Name
- t. Discharge Medication Code
- u. Discharge Medication Begin Date
- v. Discharge Medication End Date
- w. Discharge Medication Status
- x. Discharge Medication Dose Unit
- y. Discharge Medication Dose Quantity
- z. Discharge Medication Instructions

### 3.2.2.3 TOC Viewer Message Specifications

For C-CDAs, both Ambulatory and Medication Reconciliation, to be linked to ADTs and display in the MIGateway TOC Viewer, the following specifications must be met:

- Specific fields between the ADT and C-CDA in question must link. 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 is 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-prod and prod 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-Prod** –

- i. Token: <https://mitp-adt-hub-preprod.auth.us-east-1.amazonaws.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.amazonaws.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 API REST 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 Medication Reconciliation Sender IHE Protocol Specifications

Organizations sending via IHE Protocol will need to adhere to the specifications outlined for the specific PnR transactions they will be using. For more information on these 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, is operating in a degenerated 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 for a two or more TDSOs</li> <li>A 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>
```

### 6.2 Appendix B – Conformance Information

For more information on conformance for Medication Reconciliation C-CDAs and the use of the MIGateway module concerning this process please refer to the Conformance Reporting User Guide which can be found here: <https://mihin.org/resourcehub/>

### 6.2 Appendix B – External Information

#### **Hospital Pay-for-Performance Documentation**

<https://www.bcbsm.com/providers/network/value-partnerships/>

## 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>ADT</b>         | Admission Discharge Transfer Notice                                                               |  | <b>NwHIN</b> | Nationwide Health Information Network       |
| <b>AMR</b>         | Advanced Medication Reconciliation                                                                |  | <b>OID</b>   | Object Identifier                           |
| <b>API</b>         | Application Programming Interface                                                                 |  | <b>PHI</b>   | Protected Health Information                |
| <b>ADE</b>         | Adverse Drug Event                                                                                |  | <b>REST</b>  | Representational State Transfer             |
| <b>C-CDA</b>       | Consolidated – Clinical Document Architecture                                                     |  | <b>SFTP</b>  | Secure File Transfer Protocol               |
| <b>CDA</b>         | Clinical Document Architecture                                                                    |  | <b>SNF</b>   | Skilled Nursing Facility                    |
| <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 standardized [XML](#)-based framework for structuring and exchanging clinical data between healthcare providers and systems in the United States.

**Clinical Document Architecture (CDA).** A standard framework for structuring and exchanging electronic health records (EHRs). It provides a common language for representing clinical data in a consistent and interoperable format.

**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.