Admission, Discharge, Transfer Notifications

Implementation Guide

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Acronyms and Abbreviations Guide

API	Application Programming Interface
CCD®	Continuity of Care Document®
CDA®	Clinical Document Architecture®
CEHRT	Certified Electronic Health Record Technology
CHAMPS	Community Health Automated Medicaid Processing System
CMS	Centers for Medicare & Medicaid Services
DQA	Data Quality Assurance
DSM	Direct Secure Messaging
EHR	Electronic Health Record
EHR-MIPP	Electronic Health Record Medicaid Incentive Payment Program
EOB	Explanation of Benefit
ESI	Electronic Service Information
HL7®	Health Level Seven®
HD	Health Directory
HIPPA	Health Insurance Portability and Accountability Act
ISO	International Organization for Standardization
MDHHS	Michigan Department of Health and Human Services
MIDIGATE	Medical Information Direct Gateway
MiHIN	Michigan Health Information Network Shared Services
NPI	National Provider Identifier
OID	Organization Identifier
PI	Promoting Interoperability
PO	Participating Organization
RAS	Registration and Attestation System
REST	Representational State Transfer
SOM	State of Michigan
TDSO	Trusted Data Sharing Organization
VPN	Virtual Private Network
XML	Extended Mark-Up Language

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 (TDSO) 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® (ACRS®).

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 organizational 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 ADT event occurs when a patient is discharged from a hospital. An ADT event also occurs when a patient arrives in a 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.

Caregiver. An individual such as a health professional or social worker who assists in the identification, prevention or treatment of an illness or disability.

Care Package. The collection of documents sent to organizations that include implementation guides, connectivity documents, and other forms that require completion to facilitate the onboarding process.

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.

Electronic Service Information (ESI). All information reasonably necessary to define an electronic destination's ability to receive and use a specific type of information (e.g., discharge summary, patient summary, laboratory report, query for patient/provider/healthcare data). ESI may include the type of information (e.g. patient summary or query), the destination's electronic address, the messaging framework supported (e.g. SMTP, HTTP/SOAP, XDR, REST, FHIR), security information supported or required (e.g. digital certificate), and specific payload definitions (e.g., CCD C32 V2.5). In addition, ESI may include labels that help identify the type of recipient (e.g. medical records department).

End Point. An instance of an electronic address or Electronic Service Information.

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

Health Directory. The statewide shared service established by Michigan Health Information Network Shared Services that contains contact information on health providers, electronic addresses, end points, and Electronic Service Information, as a resource for authorized users to obtain contact information and to securely exchange health information.

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 (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 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 (PHI) 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.

Health Provider. Means facilities/hospitals, health professionals, health plans, caregivers, pharmacists/other qualified professionals, or any other person or organization involved in providing healthcare.

Health Insurance Portability and Accountability Act (**HIPPA).** United States legislation that provides data privacy and security provisions for safeguarding medical information.

Information Source. Any organization that provides information that is added to a Michigan Health Information Network Shared Services infrastructure service.

Master Use Case Agreement (MUCA). Legal document covering expected rules of engagement across all use cases. Trusted Data Sharing Organizations (TDSOs) sign master use case agreement one time, then sign use case exhibits for participation in specific use cases.

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 Care Improvement Registry (MCIR). The Internet Information Service (IIS) for the state of Michigan operated by the Michigan Department of Health and Human Services (MDHHS).

Michigan Health Information Network Shared Services (MiHIN). The health information network for the state of Michigan.

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 (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 participating organizations to send, receive, find, or use information to or from MiHIN as further set forth in an exhibit.

Notice. A message transmission that is not message content and may include an acknowledgement of receipt or error response, such as an Acknowledgement (ACK) or Negative Acknowledgement (NACK).

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).

Person Record. Any record in a Michigan Health Information Network Shared Services infrastructure service that primarily relates to a person.

Promoting Interoperability. Using certified electronic health record (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.

Provider Community. A healthcare provider with an active care relationship with the applicable patient.

Send/Receive/Find/Use (SRFU). Means sending, receiving, finding, or using message content. Sending involves the transport of message content. Receiving involves accepting and possibly consuming or storing message content. Finding means querying to locate message content. Using means any use of the message content other than sending, receiving and finding. Examples of use include consuming into workflow, reporting, storing, or analysis. SRFU activities must comply with Applicable Laws & Standards or State Administrative Code as that term is defined in this agreement and the data sharing agreement.

Source System. A computer system, such as an electronic health record system, at the participating organization, that sends, receives, finds or uses message content or notices.

Statewide Consumer Directory (SCD). A Michigan Health Information Network Shared Services infrastructure service that helps organizations provide tools to consumers, which allow the consumers to manage how their protected health information (PHI) can be shared and used. The SCD is essentially a Software Development Kit (SDK) with a robust set of Application Programming Interfaces (API) that can be used by consumer-facing applications that enable consumers to take an active role in viewing and editing their preferences for how their health information is shared.

Transactional Basis. The transmission of message content or a notice within a period of time of receiving message content or notice from a sending or receiving party as may be further set forth in a specific exhibit.

Transitions of Care. The movement of a patient from one setting of care (e.g., hospital, ambulatory primary care practice, ambulatory specialty care practice, long-term care, rehabilitation facility) to another setting of care and can include transfers within a healthcare organization.

Trusted Data Sharing Organization (TDSO). An organization that has signed any form of agreement with Michigan Health Information Network Shared Services for data sharing.

Use Case. (a) A use case agreement previously executed by a participating organization; or (b) the use case summary, use case exhibit and a use case implementation guide that participating organization or Trusted Data Sharing Organization must follow to share specific message content with the Michigan Health Information Network Shared Services.

Use Case Exhibit. The legal agreement attached as an exhibit to the master use case agreement that governs participation in any specific use case.

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

Use Case 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/.

View Download Transmit (VDT). A requirement for Promoting Interoperability with the objective to provide patients with the ability to view online, download and transmit their health information within a certain period of the information being available to an eligible professional.

1. Introduction

1.1 Purpose of Use Case

Supports sending notifications on the status of a patients care transition(s) to every care team member interested in that patient.

Admission, discharge, transfer (ADT) notifications are widely regarded as a keystone for improving patient care coordination through health information exchange. ADT notifications are sent when a patient is admitted to a hospital, transferred to another facility, or discharged from the hospital. Notifications are then sent to update physicians and care management teams on a patient's status, thus improving post-discharge transitions, prompting follow-up, improving communication among providers, and supporting patients with multiple or chronic conditions.

ADT notifications also help to identify patients who are frequent or high users of the healthcare system. This allows providers to steer those patients toward clinical and non-clinical interventions, reducing overutilization by preventing avoidable emergency department visits and hospital readmissions.

When a patient is admitted to a hospital, transferred, or discharged, an ADT notification is created by the hospital's electronic health record (EHR) system. The hospital EHR system sends the ADT notification through a Trusted Data Sharing Organization (TDSO) to Michigan Health Information Network Shared Services (MiHIN), which operates the ADT Notification service.

Once received, MiHIN looks up the patient and the providers who are on the patients care team using the Active Care Relationship Service® (ACRS®). ACRS contains information on the providers (e.g., attending, referring, consulting, admitting, primary care physician, etc.) interested in the patients' health. MiHIN also looks up the providers in the Health Directory to obtain the delivery preference for each of the providers and to determine the electronic endpoint and "transport" method by which the providers wish to receive ADT notifications (e.g., via Direct Secure Messaging, Health Level Seven® (HL7®) over Lower-Layer Protocol (LLP), etc.) for their patients.

Based on the provider's delivery preferences, MiHIN notifies each provider who has an active care relationship with a patient upon the following ADT events:

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

Note Related Use Case Requirements: *Organizations entering this use case should simultaneously enter into the Active Care Relationship Service (ACRS) and Health Directory use cases. These three use cases work together to support ADT Notifications.*

1.2 Message Content

For this use case, Message Content refers to a message conforming to HL7 2.5.1 standards identified as an ADT message type and any message enrichments.

1.3 Data Flow and Actors

- *Actor:* Sending Organization
  - *Role:* Collects patient registration information and information about patient movements within healthcare institutions. Forwards this information to MiHIN.
- *Actor:* MiHIN
  - *Role:* Receives patient registration and movement information from Sending Organizations. Forwards this information to Receiving Organizations. May add information to the message z-segment before forwarding.
- *Actor:* Receiving Organization
  - *Role:* Receives patient registration and movement information forwarded by MiHIN from Sending Organizations. Uses this information for treatment, payment and operations.

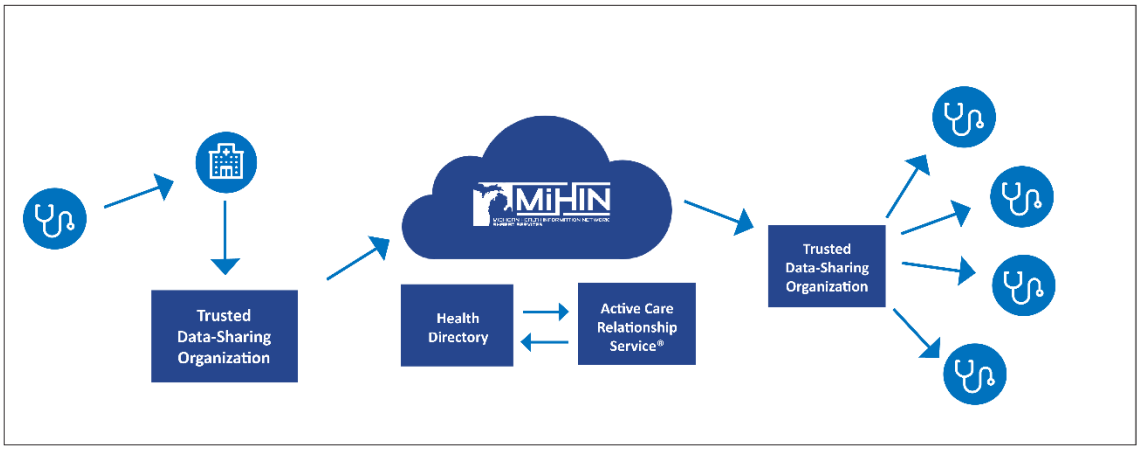

Figure 1. Organizations Tracking Patient Movement with ADT Notifications Use Case

1. When Jorge goes to the hospital an ADT Notification is sent to MiHIN (sometimes via a TDSO).
2. MiHIN checks the ACRS and identifies Jorge's care team.
3. MiHIN retrieves contact and delivery preferences for the care team from the Health Directory.
4. The ADT Notification is sent to the care team based on their electronic addresses and preferences.

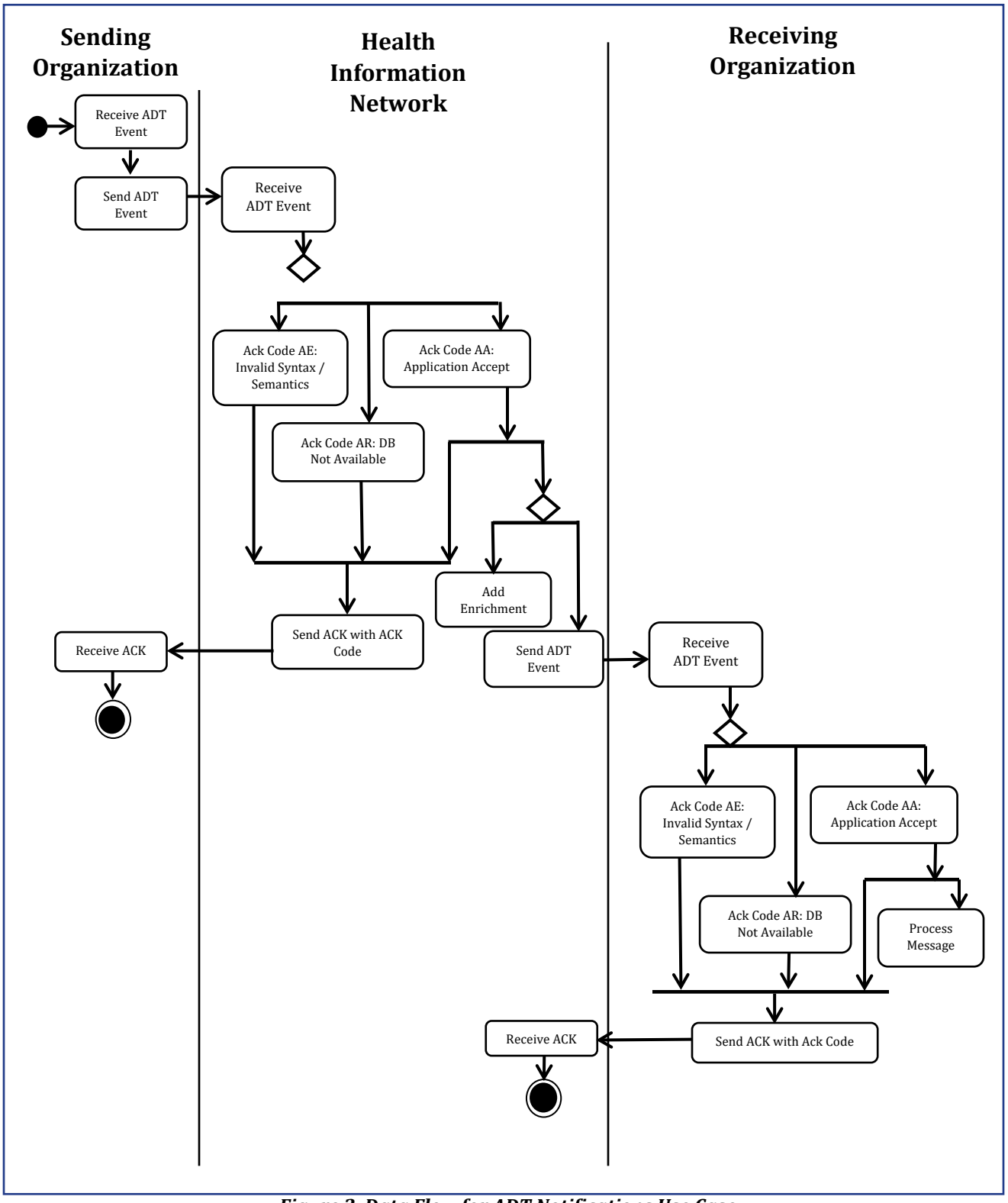

Figure 2. Data Flow for ADT Notifications Use Case

2. Onboarding

The following guidelines describe the way in which an organization may onboard with MiHIN to send or receive ADT notifications. Additional documentation is available on the MiHIN use case page if needed (https://mihin.org/admission-discharge-transfer-notifications-use-case/). They include HL7 Vocabulary Terms and Static Definitions (both shared with permission of HL7).

2.1 Prerequisites

Participating organizations should begin two parallel onboarding tracks simultaneously:

- Obtain, review, and execute legal agreements, and
- Establish technical transport and testing.

2.1.1 Universal Legal Prerequisites

Legal agreements for organizations who are onboarding for the first-time consist of a Data Sharing Organization Agreement, a Master Use Case Agreement, and Use Case Exhibits for any applicable use cases.

Once an organization signs the Master Use Case Agreement, only a new Use Case Exhibit is required for each additional use case.

To initiate the legal onboarding contact, email legal@mihin.org.

2.1.2 ADT Receiver Use Case Prerequisites

Receiving ADT notifications requires participation in the following use cases:

- ADT Notifications
- ACRS
- Health Directory

See *Figure 1* (above) for an example of how these use cases work together.

2.2 Sending ADT Notifications

The Transitions of Care use case focuses on inpatient and emergency care settings such as hospitals, independent emergency care clinics, and skilled nursing facilities with patients transitioning out of care and to an outpatient setting. The organizations providing inpatient and emergency care are classified as “ADT Senders”.

2.2.1 ADT Sender Onboarding Process

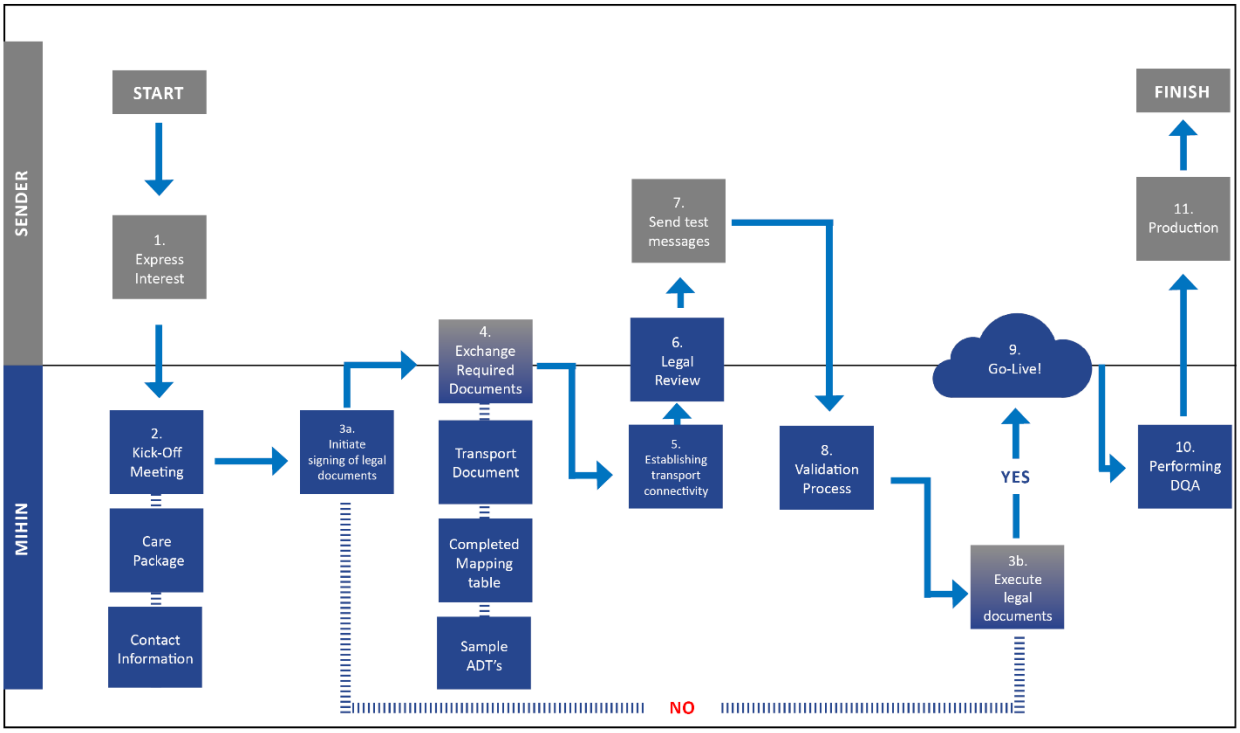

Figure 3. ADT Sender Onboarding Flowchart

For ADT senders, onboarding steps include:

- Express interest in participating in the use case
- Kick-off meeting
  - Exchange contact information
  - Distribute ADT Notifications care package
- Execute legal documents
  - Data Sharing Organization Agreement (if not already executed)
  - Master Use Case Agreement (if not already executed)
  - Use Case Exhibit
- Exchange required documents
  - Transport document
  - Completed mapping tables
- Establish transport method/connectivity (e.g., via health information exchange (HIE), virtual private network (VPN), or Direct Secure Messaging (DSM))
- Provide sample ADT messages and test
- Complete validation process
- Go live
  - Data Quality Assurance (DQA) period
- Enable feed for recipient(s)

2.3 Receiving ADT Notifications

The Transitions of Care use case focuses on inpatient and emergency care settings with patients transitioning out of care and into an outpatient setting such as a primary care provider. The organization providing outpatient care is classified as “ADT Receivers”.

2.3.1 ADT Receiver Onboarding Process

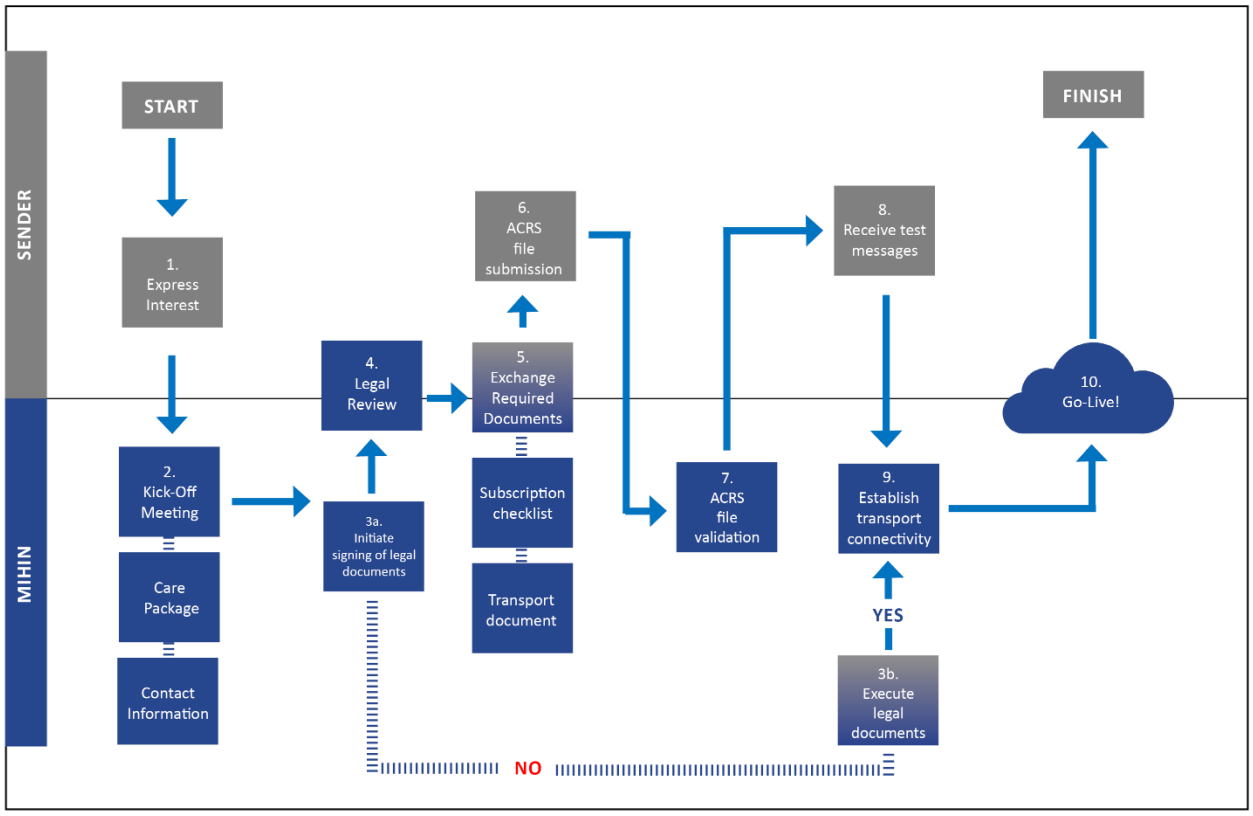

Figure 4. MiHIN ADT Receiver Onboarding Flowchart

For ADT Receivers, onboarding steps are as follows:

- Express interest in participating in the use case
- Kick-off meeting
  - Exchange contact information
  - Distribute ADT Notifications care package
- Execute legal documents
  - Data Sharing Organization Agreement (if not already executed)
  - Master Use Case Agreement (if not already executed)
  - Use Case Exhibit
- Exchange required documents
  - Transport document
- Send ACRS file(s) securely
- Validate ACRS file(s)

- Establish transport method/connectivity (e.g., via HIE, VPN, or DSM)
- Go live

2.3.2 MiHIN Standard Appended Z-Segments

MiHIN can enrich messages by adding content to the Z-segment of an ADT message. The following message enrichments are standard and will be added to the Z-segment of messages if they are available. For more information on the Z-segments listed below, contact MiHIN's onboarding department at onboarding@mihin.org.

2.3.2.1 NPI Z-Segment

For every provider match in the ACRS against an ADT notification, the corresponding provider National Provider Identifier (NPI) will be appended to the receiver's ADT notification.

Format: ZNP|ACRSNPI|1234567890

2.3.2.2 Common Key Z-Segment

If an ADT is identified as a patient with a common key, then the patient's common key will be appended to the receiver's ADT notification.

Format: ZCK|CKS|9182398128

2.3.2.3 Member ID Z-Segment

When a patient is matched with a receiver's ACRS file, the common key from the file will be appended to the receiver's ADT notification.

Format: ZPD|PATIENTID|12345678

2.3.2.4 Risk Score Z-Segment

Message enrichment which provides one or more risk scores for the patient. If more than one score is available, a corresponding number of ZPR segments will be appended to the message.

Format: ZPR|SET ID|SCORE TYPE^SCORE CATEGORY ^SCORE VALUE^SCORE DATE^SCORE DESCRIPTION ^SCORE OID^SCORE EXPIRATION DATE

2.3.2.5 Explanation of Benefits (EOB) Z-Segment

When a patient has Explanation of Benefits (EOB) information available and accessible to members of their active care team, an organization identifier (OID) for each EOB issuer (health insurance organization) and information on how it can be accessed will be appended to the receiver's ADT.

Format: ZEB|OID1~OID2|URL

2.3.2.6 Care Team & ACRS Information Z-Segment

For every match in the ACRS, the corresponding patient's care team information will be appended to the message, including information from the receiving organization's ACRS file. The z-segment will contain one field for each care team member (based on ACRS matches).

Format:

ZCT|Provider_lastName^Provider_firstName^Provider_npi^practiceName^receiver_organizationOID^patientId~

3 Specifications

The following guidelines describe the way in which segment and field requirements apply to conformant messages. Additional documentation is available on the MiHIN use case page if needed (https://mihin.org/admission-discharge-transfer-notifications-use-case/) including the HL7 Vocabulary Terms and Static Definitions (both shared with permission of HL7).

3.1 Sending Organization Requirements

ADT senders must adhere to MiHIN conformance standards to participate in this use case. All required segments listed in this specification must be populated and included data must adhere to referenced data tables.

3.1.1 Segment Requirements for Sending Organization

Each HL7 message sent to MiHIN will conform to the static definition given in the Static Definitions documentation available on the MiHIN use case page corresponding to the trigger event of the message.

3.1.2 Segment Usage Requirements for Sending Organization

Conformant ADT Senders will adhere to the following usage requirements.

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

3.1.2.1 Segment Cardinality Requirements for Sending Organization

Conformant sending organizations will adhere to the following cardinality requirements for message segments:

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

3.1.3 Field and Subfield Requirements for Sending Organization

Each segment of each HL7 message sent to MiHIN will conform to the static definition available in the Static Definition documentation available on the MiHIN use case page corresponding to the trigger event of the message.

3.1.3.1 Field and Subfield Usage Requirements for Sending Organization

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

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

3.1.3.2 Field and Subfield Cardinality Requirements for Sending Organization

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

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

3.1.4 Mapping Tables

MiHIN requires a set of mapping tables to document data definitions for specific fields. Changes in mappings must be updated to maintain conformance.

3.1.4.1 Mapping Table Format

MiHIN provides a template mapping table to be completed by the sender. Fields that must be mapped include, but are not limited to, the following:

- MSH-4 Sending Facility;
- PID-8 Gender;
- PID-10 Race;
- PID-22 Ethnicity;
- PID-30 Death Indicator;

- DG1-6 Diagnosis Type;
- PV1-2 Patient Class;
- PV1-4 Admission Type;
- PV1-14 Admit Source;
- PV1-18 Patient Type;
- PV1-10 Hospital Service;
- PV1-36 Discharge Disposition;
- IN1-17 Insured's Relationship to Patient;
- IN1-3 Insurance Company ID, and
- IN1-4 Insurance Company Name.

3.1.5 Conformance Reporting

ADT senders will be measured on three tiers of conformance:

- Complete routing data;
- Complete mapping, and
- Adherence to coding standards.

3.1.5.1 Complete Routing Data

Data necessary for routing messages to the right destination by field must be populated consistently with the following:

- MSH-4.1 Sending Facility;
- PID-5.1 Patient Last Name;
- PID-5.2 Patient First Name;
- PID-7 Patient Data of Birth;
- PID-8 Patient Gender;
- PID-11.5 Patient Zip-Code, and
- PID-19 Patient Social Security Number.

Complete routing data measures the percent of ADTs in which each field was filled. Only ADT types with relevant segment included in the ADT specification are included in this percentage.

3.1.5.2 Complete Mapping

Complete mapping to specified value sets by field are measured against provided mapping tables.

- PID-8 Patient Gender
- PID-10 Patient Race
- PID-22 Ethnic Group
- PV1-2 Patient Class
- PV1-4 Admission Type
- PV1-14 Admit Source
- MSH 4.1 Sending Facility
- PV1-10 Hospital Service

- PV1-36 Discharge Disposition.

3.1.5.3 Adherence to Coding Standards

The percent of ADTs with data in fields in which the data met designated coding standards for relevant message types.

- PV1-7 Attending Doctor ID
- PV1-17 Admitting Doctor ID

3.2 Receiving Organization Requirements

3.2.1 Segment Requirements for Receiving Organization

Each HL7 message sent by MiHIN will conform to the static definition given in the Static Definitions documentation available via the website page for ADT Notifications corresponding to the trigger event of the message.

3.2.2 Segment Usage Requirements for Receiving Organization

Conformant receiving organizations will adhere to the following usage requirements for message segments.

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

3.2.2.1 Segment Cardinality Requirements for Receiving Organization

Conformant receiving organizations will adhere to the following cardinality requirements for message segments.

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

3.2.3 Field and Subfield Requirements for Receiving Organization

Each segment of each HL7 message sent by MiHIN will conform to the static definition given in the Static Definition documentation available on the MiHIN use case website page corresponding to the trigger event of the message.

3.2.3.1 Field and Subfield Usage Requirements for Receiving Organization

Conformant receiving organizations will adhere to the following usage requirements for message fields and subfields.

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

3.2.3.2 Field Cardinality Requirements for Sending Organization

Conformant receiving organizations will adhere to the following cardinality requirements for message fields.[1]

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

3.2.4 Acknowledgment Message Requirements for Receiving Organization

For each message received, a receiving organization will return an HL7 acknowledgment message formatted according to the requirements. An ERR segment will be returned for each usage and cardinality error recorded as a result of applying the rules in Section 3.2, "Receiving Organization Requirements".

[1] Cardinality requirements for subfields – components and subcomponents – are covered by the field usage requirements in the previous section; by the HL7 Version 2 encoding rules, subfields may not have cardinality greater than 1.

4 Troubleshooting

4.1 Production Support

	Severity Levels			
	1	***2***	***3***	***4***
Description	***Critical Impact/ System Down:*** Business critical software is down, or critical interface has failed. The issue is impacting all production systems, causing all participating organizations' or other organizations' ability to function to be unusable.	***Significant Business Impact:*** Software component severely restricted. Entire organization is unable to continue business functions, causing all communications and transfer of messages to be halted.	**Partial Failure or Downtime:** Program is useable and less significant features unavailable. The service is online, though may not working as intended or may not currently working as intended or may not currently be accessible, though other systems are currently available.	**Minimal Business:** A non-critical software component is malfunctioning, causing minimal impact, or a test system is down.
Example	All messages to and from MiHIN are unable to be sent and received, let alone tracked	MiHIN cannot communication (send or receive) messages between single or multiple participating organizations but can still successfully communicate with other organizations.	Messages are lost in transit; messages can be received but not sent.	Additional feature requested.
Primary Initiation Method	***Phone:*** 517 -336-1430	***Phone:*** 517- 336-1430	Web form at https://mihin.org/requesthelp/	Web form at https://mihin.org/requesthelp/
Secondary Initiation Method	Web form at https://mihin.org/requesthelp/	Web form at https://mihin.org/requesthelp/	Email to help@mihin.org.	Email to help@mihin.org.
Tertiary Initiation Method	Email to help@mihin.org.	Email to help@mihin.org.	N/A	N/A
Initial Response	Within 2 hours	Within 2 hours	1 business day	1 business day
Resolution Goal	24 hours	24 hours	3 business days	7 business days

A list of common questions regarding the ADT Notifications use case can be found at: *https://mihin.org/admission-discharge-transfer-notifications-use-case/.*

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

- https://mihin.org/requesthelp/
- Phone: 517-336-1430
- Monday – Friday 8:00 AM – 5:00 PM (Eastern Standard Time)

5 Legal Advisory Language

This reminder applies to all use care exhibits (UCE) or pilot activity exhibits (PAE) covering the exchange of electronic health information:

The data sharing agreement establishes the legal framework under which PO can exchange messages through the MiHIN platform, and sets forth the following approved reasons for which messages may be exchanged:

a. By healthcare providers for Treatment, Payment and/or Healthcare 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 "promoting interoperability" criteria as specified in the American Recovery and Reinvestment Act of 2009 and as permitted by HIPAA;
d. Uses and disclosures pursuant to an Authorization provided by the individual who is the subject of the Message or such individual's personal representative in accordance with HIPAA;
e. By Data Sharing Organizations for any and all purposes, including but not limited to pilot programs and testing, provided that such purposes are consistent with Applicable Laws and Standards; and
f. For any additional purposes as specified in any UCE or PAE, provided that such purposes are consistent with Applicable Laws and Standards.

Under these agreements, "***Applicable Laws and Standards***" means all applicable federal, state, and local laws, statutes, acts, ordinances, rules, codes, standards, regulations and judicial or administrative decisions promulgated by any governmental agency, including the state of Michigan, or the Michigan Health Information Technology Commission as any of the foregoing may be amended, modified, codified, reenacted, promulgated or published, in whole or in part, and in effect from time to time which is enforceable against a Party. Without limiting the generality of the foregoing, "Applicable Laws and Standards" includes HIPAA "; 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 PO'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, if a UCE is directed to the exchange of physical health information that may be exchanged without patient authorization under HIPAA, the provider 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 will apply 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.