Michigan Health Information Network

Admission-Discharge-Transfer Notifications Implementation Guide for HL7 Messages

Version 8

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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
HL7	Health Level Seven
HPD	Health Provider Directory
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
MU	Meaningful Use

PO	Participating Organization
RAS	Registration and Attestation System
REST	Representational State Transfer
SOM	State of Michigan
VPN	Virtual Private Network
XML	Extended Mark-Up Language

Definitions

Active Care Relationship. (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 HIN; (b) for payers, an eligible member of a health plan; (c) an active relationship between a patient and care manager or other person or organization for the purpose of treatment, payment or operations; or (d) a relationship with a health provider asserted by a consumer and approved by such health provider.

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 and sent home. An ADT event also occurs when a patient arrives in care setting such as a health clinic or hospital.

ADT Message. A type of HL7 message generated by healthcare systems based upon ADT events; the HL7 ADT message type is used to send or receive patient demographic and/or healthcare encounter information, generated from source system(s). The HL7 ADT messages contain patient demographic, visit, insurance and diagnosis information.

ADT Notification. An electronic notification that a given patient has undergone an ADT event.

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.

Data Sharing Agreement. Any data sharing organization agreement signed by both HIN and participating organization

Electronic Medical Record or Electronic Health Record. A digital version of a patient's paper medical chart.

End Point. An instance of an electronic address or ESI.

Exhibit. A use case exhibit or a pilot activity exhibit.

Health Level 7 (HL7). An interface standard and specifications for clinical and administrative healthcare data developed by the American National Standards Institute. HL7 provides a method for disparate systems to send and receive 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 professional, health plan, public health authority, employer, life insurer, school or university, or health care clearinghouse; and (b) relates to the past, present, or future physical or mental health or condition of an individual; the provision of health care to an individual; or the past, present, or future payment for the provision of health care to an individual.

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

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

Health Professional or Health Provider. (a) Any individual licensed, registered, or certified under Federal or State laws or regulations to provide health care services; (b) any person holding a non-clinical position within or associated with an organization that provides healthcare or healthcare related services; and (c) people who contribute to the gathering, recording, processing, analysis or sending and receiving of Health Information.

Health Provider Directory. The statewide shared service established by HIN that contains contact information on health professionals, facility/hospital, other healthcare organizations, electronic addresses, end points, and electronic service information, as a resource for authorized users to obtain contact information and securely exchange health information.

HIN Infrastructure Service. Certain services that are shared by numerous use cases. HIN Infrastructure Services include, but are not limited to, ACRS, HPD, Statewide Consumer Directory (SCD), and the Medical Information DIrect GATEway (MIDIGATE®).

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

Information Source. Any organization that provides information that is added to a HIN Infrastructure Service.

Meaningful Use. Using certified EHR technology to improve quality, safety and efficiency of healthcare, and to reduce health disparities.

Message. A mechanism for exchanging message content between the participating organization to HIN services, including finding and receiving.

Message Content. Information which is sent, received, found or used by a Participating Organization to or from HIN Services, including, but not limited to, PHI, common keys, de-identified data, metadata, Digital Credentials, and data schema. Message Content includes the Message Content Header.

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

Michigan Health Information Network Shared Services. The HIN for the State of Michigan.

Notice. A sent message that is not message content and which may include but not be limited to an acknowledgement of receipt or error response.

Patient Data. Any data about a patient or a consumer that is electronically filed in a participating organization or organization's systems or repositories. The data may contain protected health information, personal credit information, or personally identifiable information.

Person Record. Any record in a HIN Infrastructure Service that primarily relates to an individual person.

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

Send / Receive / Find / Use. Means sending, receiving, finding, or using message content. Sending involves transport of message content. Receiving involves accepting and possibly consuming/storing message content. Finding means querying to locate message content. Using means any use of the message content other than sending, receiving and finding.

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. A HIN Infrastructure Service that helps organizations provide tools giving consumers the ability to manage how their personal Health Information can be shared and used. The SCD is essentially a Software Development Kit with a robust set of FHIR APIs that can be used by online health portals, mobile apps, or any other consumer-facing health 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 sending 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 and can include transfers within a healthcare organization.

Trusted Data Sharing Organization. An organization that has signed any form of agreement with HIN for data sharing.

Use Case. A specific scenario or group of scenarios for sharing patient health information.

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. The document providing technical specifications related to Message Content and transport of Message Content between participating organizations, HIN, and other data sharing organizations. Use Case Implementation Guides 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 HIN upon request and are available via www.mihin.org.

View Download Transmit. A requirement for Meaningful Use with the objective to provide patients with the ability to view online, download and send their health information within four business days of the information being available to an Eligible Professional.

1 Introduction

1.1 Purpose of Use Case

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

This use case supports a way to communicate the status of patients' care transitions with every care team member interested in that patient. When a patient is admitted to a hospital, transferred, or discharged, an ADT message is created by the hospital's Electronic Health Record (EHR) system. The hospital EHR system sends the ADT messages to the health information network (HIN) which operates the Statewide ADT Notification Service. The HIN then finds the patient and the providers who are on that patient's care team using the Active Care Relationship Service (ACRS). ACRS contains information on which providers (e.g. attending, referring, consulting, admitting, primary care physician, etc.) are interested in that patient's health. The HIN also finds the providers in the statewide Health Provider Directory (HPD) to obtain the delivery preference for each of those providers and to determine the electronic endpoint and "transport" method by which the providers wish to receive ADT notifications (e.g. via Direct Secure Messaging, via Health Level Seven (HL7) over LLP, etc.) for their patients.

Based on the provider's delivery preferences, the HIN 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 into this use case also in general should simultaneously enter into the Active Care Relationships Use Case and the Health Provider Directory Use Case. These three use cases go 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.

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 HIN.

Actor: HIN

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

Actor: Receiving Organization

Role: Receives patient registration and movement information forwarded by HIN from Sending Organizations. Uses this information for treatment, payment and operations.
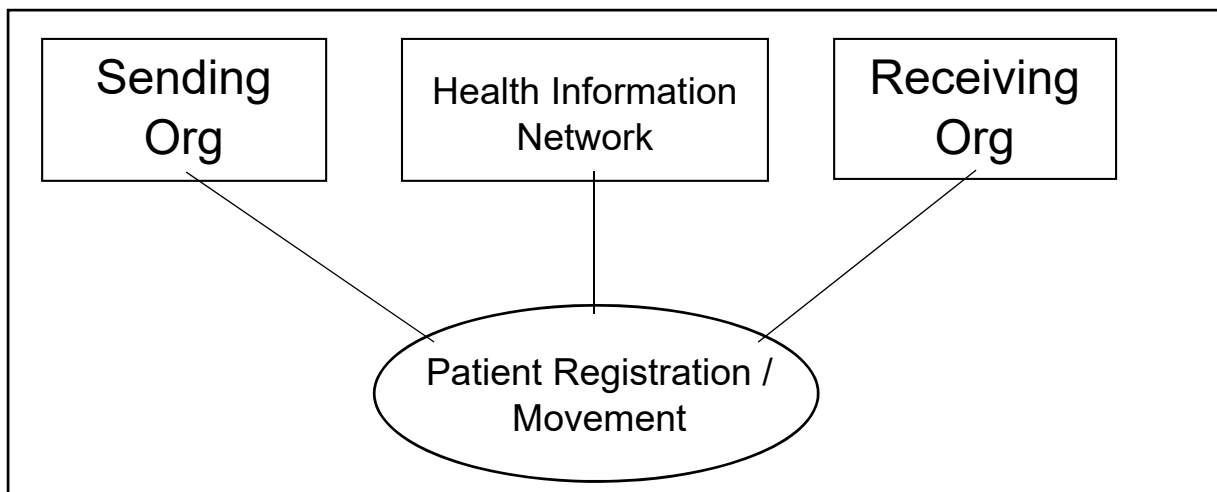
Figure 1. Organizations Tracking Patient Movement With ADT Notifications Use Case
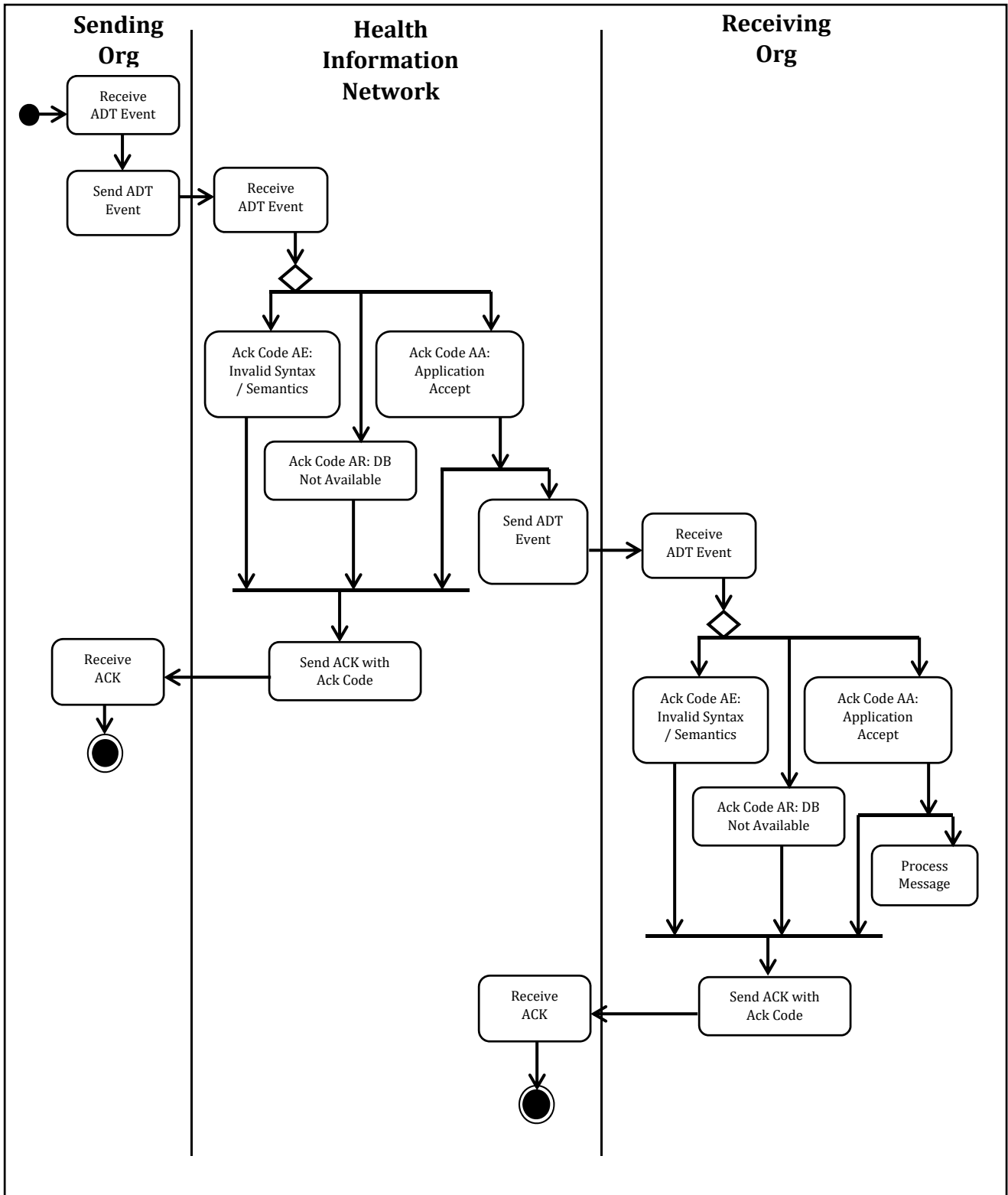
Figure 2. Data Flow for ADT Notifications Use Case

2 Onboarding

The following guidelines describe the way in which an organization may onboard sending or receiving ADT notifications.

2.1 Prerequisites

Participating Organizations should begin two parallel onboarding tracks simultaneously:

- Obtain, review, and execute legal agreements
- Establish technical transport and test

2.1.1 Universal Legal Prerequisites

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

www.mihin.org/about-mihin/resources/mihin-legal-document-templates/

For additional use cases only a new Use Case Exhibit is required.

To initiate the legal onboarding contact: legal@mihin.org.

2.1.2 ADT Receiver Use Case Prerequisites

In order to receive ADT notifications, there are several use cases packaged together:

- Statewide ADT Notifications
- Active Care Relationships
- Health Provider Directory

See diagram below to demonstrate how these use cases work together.

2.1.3 ADT Notification Diagram
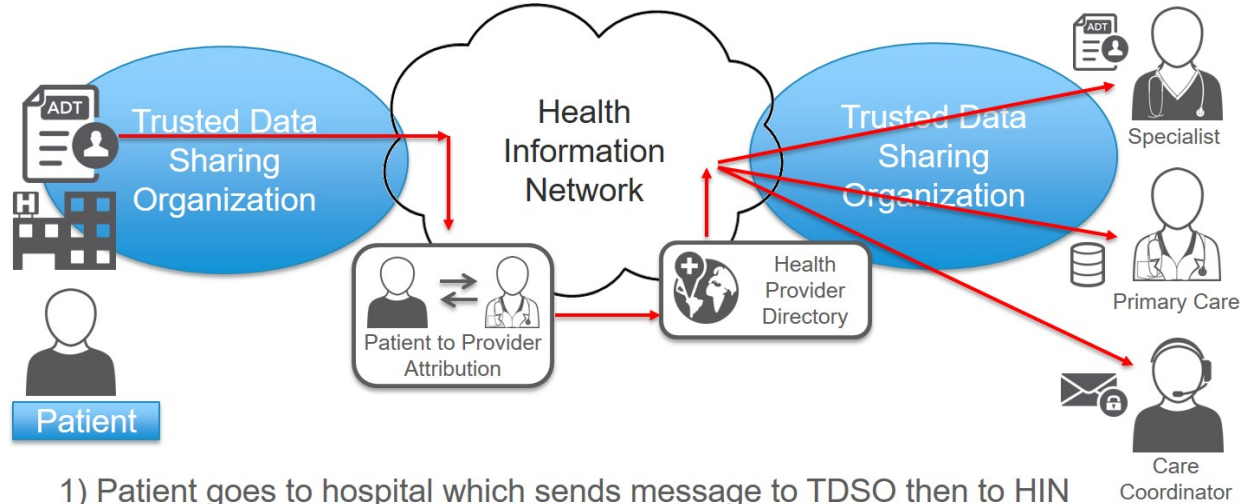
1) Patient goes to hospital which sends message to TDSO then to HIN
2) HIN checks patient-provider attribution and identifies providers
3) HIN retrieves contact and delivery preference for each provider from HPD
4) Notifications routed to providers based on electronic address and preferences

Figure 3. Data flow with multiple use cases to support ADT Notifications

2.2 Sending ADT Notifications

Transitions of Care use cases focus on inpatient and emergency care settings such as hospitals, independent emergency care clinics, and skilled nursing facilities with patients transitioning out of their care and to an outpatient setting. These inpatient and emergency care providing organizations would be classified as ADT Senders.

2.2.1 ADT Sender Onboarding Process
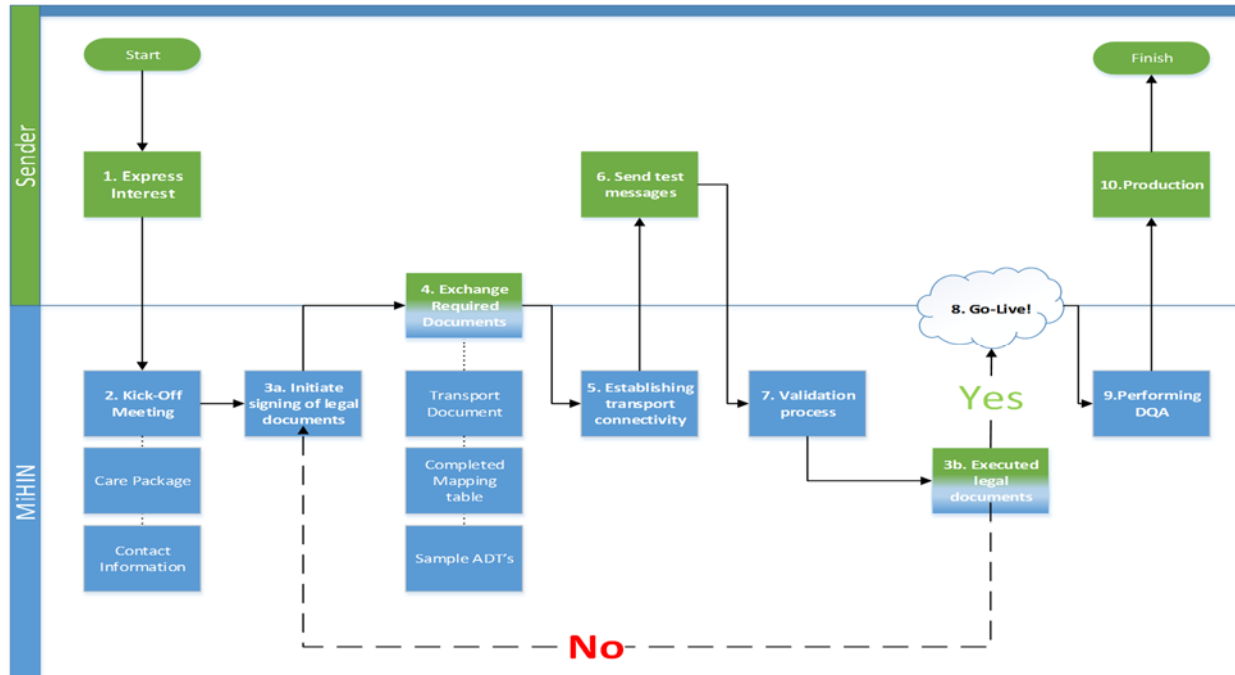
Figure 4. ADT Sender Onboarding Flowchart

Onboarding process steps include:

- Express interest in onboarding use case
- Kick-off meeting
  - Exchange contact information
  - Distribute Statewide ADT notification "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 HIE, VPN, or Direct)
- Provide sample ADT messages and test
- Complete validation process
- Go live
  - Two-week Data Quality Assurance (DQA) period
- Enable feed for recipient(s)

2.3 Receiving ADT Notifications

Transitions of Care Use Cases focus on inpatient and emergency care settings with patients transitioning out of their care and to an outpatient setting such as a primary care provider. These outpatient care providing organizations would be classified as ADT Receivers.

2.3.1 ADT Receiver Onboarding Process
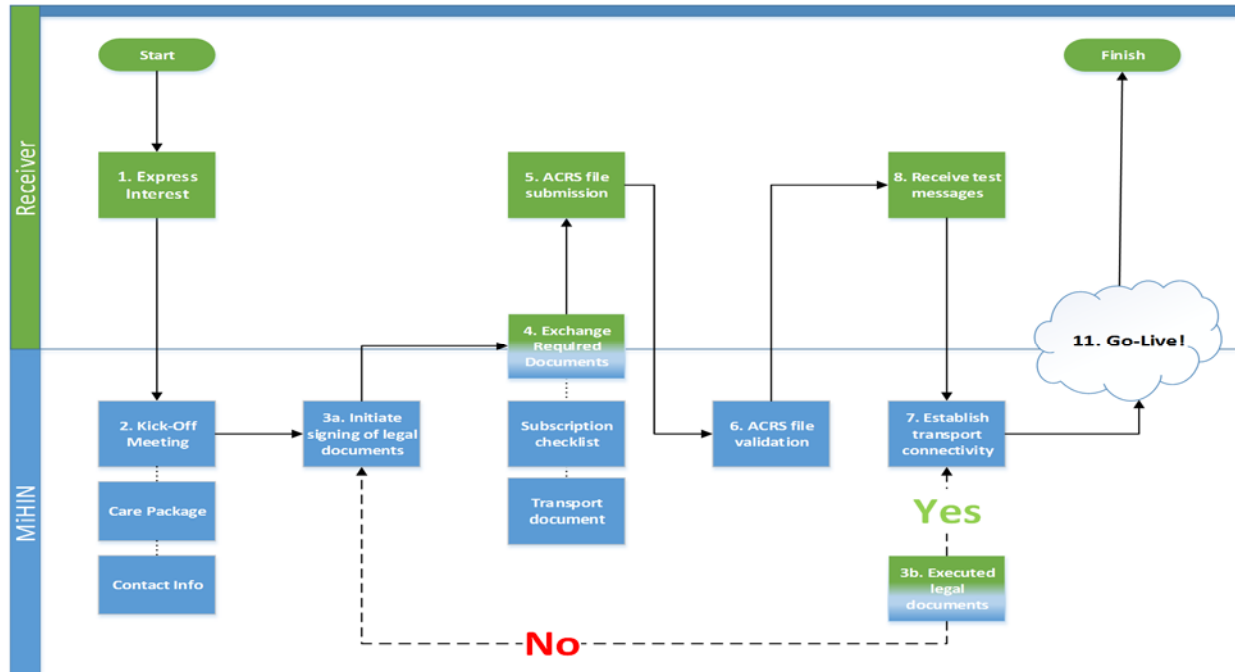
Figure 5.MiHIN ADT Receiver Onboarding Flowchart

ADT Receiver Onboarding Steps:

- Express interest in onboarding Use Case
- Kick-off meeting
  - Exchange contact information
  - Distribute Statewide ADT "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
  - Subscription checklist
- Send ACRS™ file(s) securely
- Validate ACRS file(s)
- Establish transport method/connectivity (e.g., via HIE, VPN, or Direct)

- Go live
- Validate production messages

2.3.2 MiHIN Appended Z-Segments

2.3.2.1 NPI Z-Segment

For every provider match in the Active Care Relationship Service against an ADT, the corresponding provider NPI will be appended to the receiver's ADT.

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 key will be appended to the receiver's ADT.

Format: ZCK|CKS|9182398128

2.3.2.3 Member ID Z-Segment

When a patient is matched with a receiver's ACRS file, the Unique Patient ID from the file will be appended to the receiver's ADT.

Format: ZPD|PATIENTID|12345678

3 Specifications

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

3.1 Sending Organization Requirements

ADT senders must adhere to HIN conformance standards to participate in this use case. All required segments listed in this spec 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 HIN shall conform to the static definition given in the subsection of Section 4, "Static Definition – Message Level," corresponding to the trigger event of the message.

3.1.2 Segment Usage Requirements for Sending Organization

Conformant Admission-Discharge-Transfer (ADT) senders shall adhere to the following usage requirements.

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

3.1.2.1 Segment Cardinality Requirements for Sending Organization

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

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

3.1.3 Field and Subfield Requirements for Sending Organization

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

3.1.3.1 Field and Subfield Usage Requirements for Sending Organization

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

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

3.1.3.2 Field and Subfield Cardinality Requirements for Sending Organization

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

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

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
- 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
- Adherence to coding standards

3.1.5.1 Complete Routing Data

Data necessary for the routing of 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
- PID-19 Patient Social Security Number
- IN1-3 Insurance Company ID
- IN1-4 Insurance Company Name
- IN1-36 Policy 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.

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.

- MSH-4.1 Use of Sending Facility Object Identifier (OID)
- MSH-4.1 Use of Sending Health System OID
- DG1-3.1 Diagnosis Code ID
- DG1-3.2 Diagnosis Code Text (description)
- DG1-3.3 Diagnosis Code Name of Coding System (must use ICD-9, ICD-10, or SNOMED)

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 subsection of Section 4, "Static Definition – Message Level," corresponding to the trigger event of the message.

3.2.2 Segment Usage Requirements for Receiving Organization

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

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

3.2.2.1 Segment Cardinality Requirements for Receiving Organization

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

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

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 subsection of Section 5, "Static Definition – Segment Level," corresponding to the trigger event of the message.

3.2.3.1 Field and Subfield Usage Requirements for Receiving Organization

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

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

3.2.3.2 Field Cardinality Requirements for Sending Organization

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

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[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 Static Definition – Message Level

Each HL7 message sent to the HIN shall conform to the static definition given in the subsection below corresponding to the trigger event of the message.

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

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

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

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

Segment	Description	Usage	Cardinality	HL7 Chapter	Comments
[{ GT1 }]	Guarantor	X	0..0	6	
[					
{ IN1	Insurance	R	0..99	6	
[IN2]	Insurance additional info.	X	0..0	6	
[{ IN3 }]	Insurance add'l info - cert.	X	0..0	6	
}					
]					
[ACC]	Accident information	X	0..0	6	
[UB1]	Universal bill information	X	0..0	6	
[UB2]	Universal bill 92 information	X	0..0	6	

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

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

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

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

Segment	Description	Usage	Cardinality	HL7 Chapter	Comments
[{ OBX }]	Observation / result	RE	0..2	7	Patient height and weight

4.3 ADT (Patient Administration) Message – Trigger Event A03

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

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

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

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

Segment	Description	Usage	Cardinality	HL7 Chapter	Comments
MSH	Message header	R	1..1	2	
[{ SFT }]	Software segment	RE	0..99	2	Implemented beginning in HL7 V2.5
EVN	Event type	R	1..1	3	
PID	Patient identification	R	1..1	3	
[PD1]	Additional demographics	RE	0..1	3	
[MRG]	Merge Information	RE	0..1	3	
[{ NK1 }]	Next of kin / associated parties	X	0..0	3	
PV1	Patient visit	R	1..1	3	
[PV2]	Patient visit - additional info.	X	0..0	3	
[{ DB1 }]	Disability information	X	0..0	3	
[{ OBX }]	Observation / result	RE	0..2	7	Patient height and weight
[{ AL1 }]	Allergy information	X	0..0	3	
[{ DG1 }]	Diagnosis information	RE	0..99	6	
[DRG]	Diagnosis related group	X	0..0	6	
[{ PR1	Procedures	RE	0..99	6	
[{ ROL }]	Role	X	0..0	12	
}]					
[{ GT1 }]	Guarantor	X	0..0	6	
[					
{ IN1	Insurance	R	0..99	6	
[IN2]	Insurance additional info.	X	0..0	6	
[{ IN3 }]	Insurance add'l info - cert.	X	0..0	6	
}					
]					
[ACC]	Accident information	X	0..0	6	
[UB1]	Universal bill information	X	0..0	6	

Segment	Description	Usage	Cardinality	HL7 Chapter	Comments
[UB2]	Universal bill 92 information	X	0..0	6	

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

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

- A09 (patient departing – tracking)
- A10 (patient arriving – tracking)
- A11 (cancel admit / visit notification)
- A15 (pending transfer)

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

4.6 ADT (Patient Administration) Message – Trigger Event A12

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

Segment	Description	Usage	Cardinality	HL7 Chapter	Comments
MSH	Message header	R	1..1	2	
[{ SFT }]	Software segment	RE	0..99	2	Implemented beginning in HL7 V2.5
EVN	Event type	R	1..1	3	
PID	Patient identification	R	1..1	3	
[PD1]	Additional demographics	RE	0..1	3	
PV1	Patient visit	R	1..1	3	
[PV2]	Patient visit - additional info.	X	0..0	3	

Segment	Description	Usage	Cardinality	HL7 Chapter	Comments
[{ DB1 }]	Disability information	X	0..0	3	
[{ OBX }]	Observation / result	RE	0..2	7	Patient height and weight
[DG1]	Diagnosis information	RE	0..1	6	

4.7 ADT (Patient Administration) Message – Trigger Event A17

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

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

4.8 ADT (Patient Administration) Message – Trigger Event A20

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

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

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

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

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

4.10 ACK (Acknowledgment) Message

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

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

5 Static Definition – Segment Level

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

5.1 MSH (Message Header) Segment

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

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

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name	Comments
1	1	ST	R	1..1		00001	Field Separator	
2	4	ST	R	1..1		00002	Encoding Characters	
3	180	HD	R	1..1	0361	00003	Sending Application	OID for sending hospital's or health system's application
4	180	HD	R	1..1	0362	00004	Sending Facility	OID / NPI for sending hospital and OID for sending health system
5	180	HD	R	1..1	0361	00005	Receiving Application	OID for MiHIN ToC service
6	180	HD	R	1..1	0362	00006	Receiving Facility	OID for MiHIN enterprise
7	26	TS	R	1..1		00007	Date/Time of Message	
8	40	ST	X	0..0		00008	Security	
9	7	CM	R	1..1	0076 0003	00009	Message Type	
10	20	ST	R	1..1		00010	Message Control ID	Should be repopulated (rather than pass-through) for outbound message header
11	3	PT	R	1..1		00011	Processing ID	Should always be P

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name	Comments
								when in production
12	60	VID	R	1..1	0104	00012	Version ID	
13	15	NM	X	0..0		00013	Sequence Number	
14	180	ST	X	0..0		00014	Continuation Pointer	
15	2	ID	X	0..0	0155	00015	Accept Acknowledgment Type	
16	2	ID	X	0..0	0155	00016	Application Acknowledgment Type	
17	2	ID	X	0..0		00017	Country Code	
18	16	ID	X	0..0		00692	Character Set	
19	60	CE	X	0..0			Principal Language of Message	
20	20	ID	X	0..0		00356	Alternate Character Set Handling Scheme	

5.2 SFT (Software) Segment

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

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

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

5.3 EVN (Event Type) Segment

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

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

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

5.4 PID (Patient Identification) Segment

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

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

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

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name	Comments
19	4	ST	R	1..1		00122	SSN Number - Patient	Last four digits only are required to increase the strength of patient match
20	25	DLN	RE	0..1		00123	Driver's License Number - Patient	
21	20	CX	C	0..1		00124	Mother's Identifier	Populated if the age of the patient is less than 1 month
22	80	CE	RE	0..19	0189	00125	Ethnic Group	
23	60	ST	X	0..0		00126	Birth Place	
24	1	ID	RE	0..1	0136	00127	Multiple Birth Indicator	
25	2	NM	C	0..1		00128	Birth Order	Populated if and only if PID-24 is Y
26	80	CE	X	0..0	0171	00129	Citizenship	
27	60	CE	X	0..0	0172	00130	Veterans Military Status	
28	80	CE	X	0..0	0212	00739	Nationality	
29	26	TS	RE	0..1		00740	Patient Death Date and Time	
30	1	ID	RE	0..1	0136	00741	Patient Death Indicator	

5.5 PD1 (Additional Demographics) Segment

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

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

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

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name	Comments
11	80	CE	X	0..0	0215	00743	Publicity Code	
12	1	ID	X	0..0	0136	00744	Protection Indicator	

5.6 PV1 (Patient Visit) Segment

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

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

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name	Comments
1	4	SI	X	0..0		00131	Set ID - PV1	
2	1	IS	R	1..1	0004	00132	Patient Class	
3	80	PL	RE	0..1		00133	Assigned Patient Location	
4	2	IS	RE	0..1	0007	00134	Admission Type	
5	20	CX	X	0..0		00135	Preadmit Number	
6	80	PL	X	0..0		00136	Prior Patient Location	
7	60	XCN	RE	0..19	0010	00137	Attending Doctor	
8	60	XCN	RE	0..19	0010	00138	Referring Doctor	
9	60	XCN	RE	0..19	0010	00139	Consulting Doctor	Deprecated in V2.3.1 in favor of ROL
10	3	IS	RE	0..1	0069	00140	Hospital Service	
11	80	PL	X	0..0		00141	Temporary Location	
12	2	IS	X	0..0	0087	00142	Preadmit Test Indicator	
13	2	IS	RE	0..1	0092	00143	Re-admission Indicator	
14	3	IS	RE	0..1	0023	00144	Admit Source	
15	2	IS	X	0..0	0009	00145	Ambulatory Status	
16	2	IS	X	0..0	0099	00146	VIP Indicator	
17	60	XCN	RE	0..19	0010	00147	Admitting Doctor	
18	2	IS	RE	0..1	0018	00148	Patient Type	
19	20	CX	X	0..0		00149	Visit Number	
20	50	FC	X	0..0	0064	00150	Financial Class	
21	2	IS	X	0..0	0032	00151	Charge Price Indicator	
22	2	IS	X	0..0	0045	00152	Courtesy Code	
23	2	IS	X	0..0	0046	00153	Credit Rating	
24	2	IS	X	0..0	0044	00154	Contract Code	
25	8	DT	X	0..0		00155	Contract Effective Date	
26	12	NM	X	0..0		00156	Contract Amount	
27	3	NM	X	0..0		00157	Contract Period	
28	2	IS	X	0..0	0073	00158	Interest Code	

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

5.7 OBX (Observation / Result) Segment

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

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

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

5.8 DG1 (Diagnosis Information) Segment

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

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

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

5.9 PR1 (Procedures) Segment

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

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

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

5.10 IN1 (Insurance) Segment

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

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

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

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name	Comments
25	1	ID	X	0..0	0136	00450	Report Of Eligibility Flag	
26	8	DT	X	0..0		00451	Report Of Eligibility Date	
27	2	IS	X	0..0	0093	00452	Release Information Code	
28	15	ST	X	0..0		00453	Pre-Admit Cert (PAC)	
29	26	TS	X	0..0		00454	Verification Date/Time	
30	60	XCN	X	0..0		00455	Verification By	
31	2	IS	X	0..0	0098	00456	Type Of Agreement Code	
32	2	IS	X	0..0	0022	00457	Billing Status	
33	4	NM	X	0..0		00458	Lifetime Reserve Days	
34	4	NM	X	0..0		00459	Delay Before L.R. Day	
35	8	IS	X	0..0	0042	00460	Company Plan Code	
36	15	ST	RE	0..1		00461	Policy Number	
37	12	CP	X	0..0		00462	Policy Deductible	
38	12	CP	X	0..0		00463	Policy Limit - Amount	
39	4	NM	X	0..0		00464	Policy Limit - Days	
40	12	CP	X	0..0		00465	Room Rate - Semi-Private	
41	12	CP	X	0..0		00466	Room Rate - Private	
42	60	CE	X	0..0	0066	00467	Insured's Employment Status	
43	1	IS	X	0..0	0001	00468	Insured's Sex	
44	106	XAD	X	0..0		00469	Insured's Employer's Address	
45	2	ST	X	0..0		00470	Verification Status	
46	8	IS	X	0..0	0072	00471	Prior Insurance Plan ID	
47	3	IS	X	0..0	0309	01227	Coverage Type	
48	2	IS	X	0..0	0295	00753	Handicap	
49	12	CX	X	0..0		01230	Insured's ID Number	

5.11 NPU (Non-Patient Update) Segment

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

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

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

5.12 MSA (Message Acknowledgment) Segment

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

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

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

5.13 ERR (Error) Segment

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

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

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name	Comments
1	493	ELD	C	0..99		00024	Error Code and Location	Deprecated by HL7 V2.5 in favor of ERR-2 through ERR-12. If HL7 version is prior to V2.5, must be present.
2	18	ERL	CE	0.99		01812	Error Location	If HL7 version is 2.5 or later, must

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

6 Static Definition – Field Level

6.1 MSH (Message Header) Segment Fields

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

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

MSH-1   Field Separator

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

MSH-2   Encoding Characters

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

MSH-3   Sending Application

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

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

MSH-4   Sending Facility

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

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

MSH-5   Receiving Application

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

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

MSH-6   Receiving Facility

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

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

MSH-7   Date/Time of Message

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

MSH-9   Message Type

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

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

MSH-10   Message Control ID

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

MSH-11   Processing ID

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

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

MSH-12   Version ID

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

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

6.2 SFT (Software) Segment Fields

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

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

SFT-1 Software Vendor Organization

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

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

SFT-2 Software Certified Version or Release Number

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

SFT-3 Software Product Name

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

SFT-4 Software Binary ID

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

6.3 EVN (Event Type) Segment Fields

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

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

EVN-2 Recorded Date/Time

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

EVN-7 Event Facility

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

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

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

PID-3 Patient Identifier List

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

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

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

PID-4 Alternate Patient ID – PID

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

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

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

PID-5 Patient Name

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

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

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

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

PID-7 Date/Time of Birth

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

PID-8 Sex

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

PID-10   Race

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

Cmp	DT	Usage	TBL#	Element Name	Comments
1	ST	RE		Identifier	The standard code for the patient's race, preferably from the CDC race code set.
2	ST	RE		Text	The human-readable term for the patient's race, which must correspond to the value in Component 1 (Identifier) if any.

Cmp	DT	Usage	TBL#	Element Name	Comments
3	ST	RE		Name of Coding System	Name (usually abbreviated) of the code set from which the code in Component 1 and the text in Component 2 are taken.
4	ST	X		Alternate Identifier	
5	ST	X		Alternate Text	

PID-11   Patient Address

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

Cmp	DT	Usage	TBL#	Element Name	Comments
1	ST	RE		Street Address	If the street address portion of the patient's address is one line, it is sent in this component. If the street address portion of the patient's address is two lines, the first line is sent in this component.
2	ST	RE		Other Designation	If the street address portion of the patient's address is one line, this component is empty. If the street address portion of the patient's address is two lines, the second line is sent in this component.
3	ST	RE		City	
4	ST	RE		State or Province	
5	ST	RE		ZIP or Postal Code	
6	ID	RE		Country	If sent, this shall be a code from the ISO 3166 table of three-character country designators.
7	ID	RE	0190	Address Type	
8	ST	RE		Other Geographic Designation	
9	IS	RE	0289	County/Parish Code	
10	IS	RE	0288	Census Tract	
11	ID	RE	4000	Address Representation Code	

PID-13   Phone Number – Home

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

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

Cmp	DT	Usage	TBL#	Element Name	Comments
5	NM	RE		Country Code	
6	NM	RE		Area/City Code	
7	NM	RE		Phone Number	
8	NM	RE		Extension	
9	ST	RE		Any Text	

PID-14   Phone Number – Business

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

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

PID-19   SSN Number - Patient

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

PID-20   Driver's License Number – Patient

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

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

PID-21   Mother's Identifier

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

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

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

PID-22   Ethnic Group

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

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

PID-24   Multiple Birth Indicator

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

PID-25   Birth Order

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

PID-29   Patient Death Date and Time

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

PID-30   Patient Death Indicator

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

6.5 PD1 (Additional Demographics) Segment Fields

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

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

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

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

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

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

6.6 PV1 (Patient Visit) Segment Fields

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

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

PV1-2 Patient Class

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

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

PV1-3 Assigned Patient Location

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

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

PV1-8 Referring Doctor

This field contains information for a single referring physician. Repetitions of this field may contain identifying information for the same physician in different master files or

source systems. However, this field is not to be used to send information for multiple referring physicians.

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

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

PV1-9 Consulting Doctor

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

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

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

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

PV1-10   Hospital Service

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

PV1-14   Admit Source

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

PV1-17   Admitting Doctor

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

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

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

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

PV1-18   Patient Type

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

PV1-36   Discharge Disposition

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

PV1-37   Discharged to Location

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

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

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

PV1-44   Admit Date/Time

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

PV1-45   Discharge Date/Time

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

6.7 OBX (Observation / Result) Segment Fields

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

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

OBX-2 Value Type

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

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

OBX-3 Observation Identifier

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

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

OBX-5 Observation Value

This field contains the actual value whose data type is given in field OBX-2-value type and whose classification is given in field OBX-3-observation identifier. Its formatting follows the rules of the HL7 standard for the data type carried in OBX-2 and the HL7 version carried in field MSH-12-version ID.

OBX-6 Units

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

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

OBX-11   Observation Result Status

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

OBX-14   Date/Time of the Observation

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

6.8 DG1 (Diagnosis Information) Segment Fields

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

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

DG1-2 Diagnosis Coding Method

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

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

DG1-3 Diagnosis Code – DG1

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

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

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

DG1-4 Diagnosis Description

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

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

DG1-5 Diagnosis Date/Time

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

DG1-6 Diagnosis Type

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

6.9 PR1 (Procedures) Segment Fields

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

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

PR1-2 Procedure Coding Method

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

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

PR1-3 Procedure Code

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

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

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

PR1-4 Procedure Description

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

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

PR1-5 Procedure Date/Time

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

PR1-8 Anesthesiologist

This field contains information for a single anesthesiologist associated with the procedure. Repetitions of this field may contain identifying information for the same

anesthesiologist in different master files or source systems. However, this field is not to be used to send information for multiple anesthesiologists.

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

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

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

PR1-11   Surgeon

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

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

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

Cmp	DT	Usage	TBL#	Element Name	Comments
1	ST	RE		ID Number	The full, unique identifier value for the provider.
2	ST	R		Family name & last name prefix	If the last name contains a prefix such as de or von that is excluded from alphabetization in the locale of the sending system, the last name prefix is restated in the second subcomponent of this component.
3	ST	RE		Given Name	
4	ST	RE		Middle Initial or Name	Multiple middle initials or names are separated by spaces.

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

6.10 IN1 (Insurance) Segment Fields

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

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

IN1-1 Set ID – IN1

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

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

IN1-2 Insurance Plan ID

This field contains a unique identifier for the insurance plan.

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

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

Cmp	DT	Usage	TBL#	Element Name	Comments
5	ST	X		Alternate Text	
6	ST	X		Name of Alternate Coding System	

IN1-3 Insurance Company ID

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

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

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

IN1-4 Insurance Company Name

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

Its components are defined as follows.

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

Cmp	DT	Usage	TBL#	Element Name	Comments
9	ID	X		Name Representation Code	

IN1-36   Policy Number

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

6.11 NPU (Non-Patient Update) Segment Fields

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

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

NPU-1 Bed Location

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

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

NPU-2   Bed Status

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

6.12 MSA (Message Acknowledgment) Segment Fields

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

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

MSA-1 Acknowledgment Code

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

MSA-2 Message Control ID

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

6.13 ERR (Error) Segment Fields

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

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

ERR-1 Error Code and Location

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

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

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

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

ERR-2 Error Location

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

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

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

Cmp	DT	Usage	TBL#	Element Name	Comments
					component 5 contains multiple subcomponents, this component contains an integer corresponding to the ordinal position of the subcomponent in which the error occurred.

ERR-3 HL7 Error Code

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

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

ERR-4 Severity

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

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

7 HL7 Vocabulary Tables

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

Table 0001: Sex

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

Value	Description	Comment
M	Male	
F	Female	
O	Other	
U	Unknown	

Table 0003: Event Type

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

Value	Description	Comment
A01	ADT/ACK – Admit/visit notification	
A02	ADT/ACK – Transfer a patient	
A03	ADT/ACK – Discharge/end visit	
A04	ADT/ACK – Register a patient	
A05	ADT/ACK – Pre-admit a patient	
A06	ADT/ACK – Change an outpatient to an inpatient	
A07	ADT/ACK – Change an inpatient to an outpatient	
A08	ADT/ACK – Update patient information	
A09	ADT/ACK – Patient departing – tracking	
A10	ADT/ACK – Patient arriving – tracking	
A11	ADT/ACK – Cancel admit/visit notification	
A12	ADT/ACK – Cancel transfer	
A13	ADT/ACK – Cancel discharge/end visit	
A14	ADT/ACK – Pending admit	
A15	ADT/ACK – Pending transfer	
A17	ADT/ACK – Swap patients	
A20	ADT/ACK – Bed status update	
A21	ADT/ACK – Patient goes on a "leave of absence"	
A22	ADT/ACK – Patient returns from a "leave of absence"	
A23	ADT/ACK – Delete a patient record	
A24	ADT/ACK – Link patient information	
A25	ADT/ACK – Cancel pending discharge	

Value	Description	Comment
A26	ADT/ACK – Cancel pending transfer	
A27	ADT/ACK – Cancel pending admit	
A29	ADT/ACK – Delete person information	
A32	ADT/ACK – Cancel patient arriving – tracking	
A33	ADT/ACK – Cancel patient departing – tracking	
A37	ADT/ACK – Unlink patient information	

Table 0004: Patient Class

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

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

Table 0005: Race

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

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

Table 0007: Admission Type

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

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

Table 0008: Acknowledgment Code

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

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

Table 0010: Physician ID

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

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

Table 0018: Patient Type

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

Table 0023: Admit Source

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

Value	Description	Comment
1	Physician referral	
2	Clinic referral	
3	HMO referral	
4	Transfer from a hospital	
5	Transfer from a skilled nursing facility	
6	Transfer from another health care facility	
7	Emergency room	
8	Court/law enforcement	
9	Information not available	

Table 0051: Diagnosis Code

Neither HL7 nor MiHIN define values from Table 0051 to be sent in field DG1-3-diagnosis code – DG1. It is recommended that the applicable SNOMED-CT, ICD-9, or ICD-10 code be sent in component DG1-3.1 and the corresponding description in component DG1-3.2.

If, and only if, a SNOMED-CT code is sent in component DG1-3.1, the value SNM should be sent in component DG1-3.3.

If, and only if, an ICD-9 code is sent in component DG1-3.1, the value I9 should be sent in component DG1-3.3.

If, and only if, an ICD-10 code is sent in component DG1-3.1, the value I10 should be sent in component DG1-3.3.

Table 0052: Diagnosis Type

This table provides HL7-suggested values to be sent in field DG1-6-diagnosis type.

Value	Description	Comment
A	Admitting	
W	Working	
F	Final	

Table 0053: Diagnosis Coding Method

Values to be sent in field DG1-2-diagnosis coding method shall be defined by the sending site.

Table 0069: Hospital Service

Values to be sent in field PV1-10-hospital service shall be defined by the sending site.

Table 0072: Insurance Plan ID

Values to be sent in field IN1-1-insurance plan ID shall be defined by the sending site.

Table 0076: Message Type

This table provides HL7-defined values to be sent in component 1 of field MSH-9-message type.

Value	Description	Comment
ACK	General acknowledgment message	
ADT	ADT message	

Table 0085: Observation Result Status Codes Interpretation

This table provides HL7-defined values to be sent in field OBX-11-observation result status.

Value	Description	Comment
C	Record coming over is a correction and thus replaces a final result	
D	Deletes the OBX record	
F	Final results; Can only be changed with a corrected result.	
I	Specimen in lab; results pending	
N	Not asked; used to affirmatively document that the observation identified in the OBX was not sought when the universal service ID in OBR-4 implies that it would be sought.	
O	Order detail description only (no result)	
P	Preliminary results	
R	Results entered – not verified	
S	Partial results	
X	Results cannot be obtained for this observation	
U	Results status change to final without resending results already sent as "preliminary". e.g., radiology changes status from preliminary to final	
W	Post original as wrong, e.g., sent and received for wrong patient	

Table 0088: Procedure Code

Neither HL7 nor MiHIN define values from Table 0088 to be sent in field PR1-3-procedure code. It is recommended that the applicable CPT code be sent in component PR1-3.1 and the corresponding description in component PR1-3.2. If, and only if, a CPT code is sent in component PR1-3.1, the value C4 should be sent in component PR1-3.3.

Table 0089: Procedure Coding Method

Values to be sent in field PR1-2-procedure coding method shall be defined by the sending site.

Table 0104: Version ID

This table provides HL7-defined values to be sent in field MSH-12-version ID.

Value	Description	Comment (Release Date)
2.0	Release 2.0	September 1988
2.0D	Demo 2.0	October 1988
2.1	Release 2.1	March 1990
2.2	Release 2.2	December 1994
2.3	Release 2.3	March 1997
2.3.1	Release 2.3.1	May 1999
2.4	Release 2.4	November 2000
2.5	Release 2.5	May 2003
2.5.1	Release 2.5.1	January 2007
2.6	Release 2.6	July 2007
2.7	Release 2.7	November 2010
2.7.1	Release 2.7.1	TBD

Table 0112: Discharge Disposition

This table provides HL7-suggested values to be sent in field PV1-36-discharge disposition.

Value	Description	Comment
01	Discharged to home or self care (routine discharge)	
02	Discharged/transferred to another short term general hospital for inpatient care	
03	Discharged/transferred to skilled nursing facility (SNF)	
04	Discharged/transferred to an intermediate care facility (ICF)	
05	Discharged/transferred to another type of institution for inpatient care or referred for outpatient services to another institution	
06	Discharged/transferred to home under care of organized home health service organization	
07	Left against medical advice or discontinued care	
08	Discharged/transferred to home under care of Home IV provider	
09	Admitted as an inpatient to this hospital	
20	Expired	
30	Still patient or expected to return for outpatient services	
40	Expired at home	
41	Expired in a medical facility; e.g., hospital, SNF, ICF, or free-standing hospice	
42	Expired – place unknown	

Table 0113: Discharged to Location

Values to be sent in field PR1-37-discharge to location shall be defined by the sending site.

Table 0116: Bed Status

This table provides HL7-suggested values to be sent in field NPU-2-bed status.

Value	Description	Comment
C	Closed	
H	Housekeeping	
O	Occupied	
U	Unoccupied	
K	Contaminated	
I	Isolated	

Table 0125: Value Type

This table provides HL7-defined values to be sent in field OBX-2-value type.

Value	Description	Comment
NM	Numeric	
ST	String Data	

Table 0136: Yes/No Indicator

This table provides HL7-defined values to be sent in field PID-30-patient death indicator.

Value	Description	Comment
Y	Yes	
N	No	

Table 0189: Ethnic Group

This table provides CDC-defined values to be sent in field PID-22-ethnic group.

Value	Description	Comment
2135-2	Hispanic or Latino	
2186-5	Not Hispanic or Latino	

Table 0302: Point of Care

The values from Table 0302 to be sent in component 1 of fields of data type PL shall be defined and maintained by the sending site.

Table 0303: Room

The values from Table 0303 to be sent in component 2 of fields of data type PL shall be defined and maintained by the sending site.

Table 0304: Bed

The values from Table 0304 to be sent in component 3 of fields of data type PL shall be defined and maintained by the sending site.

Table 0305: Person Location Type

The values from Table 0305 to be sent in component 6 of fields of data type PL shall be defined and maintained by the sending site.

Table 0306: Location Status

The values from Table 0306 to be sent in component 5 of fields of data type PL are expected to be defined and maintained by the sending site. Alternatively, values from Table 0116, Bed Status, may be used.

Table 0307: Building

The values from Table 0307 to be sent in component 7 of fields of data type PL shall be defined and maintained by the sending site.

Table 0308: Floor

The values from Table 0308 to be sent in component 8 of fields of data type PL shall be defined and maintained by the sending site.

Table 0357: Message Error Status Codes

This table provides HL7-defined values to be sent in component 4 of field ERR-1-error code and location.

Value	Description	Comment
100	Segment sequence error	The message segments were not in the proper order, or required segments are missing.
101	Required field missing	A required field is missing from a segment. Used also for missing required components and subcomponents.
102	Data type error	The field contained data of the wrong data type, such as an alphabetic value in a field of type NM.
103	Table value not found	The value of a field of data type ID or IS was compared against the corresponding table, and no match was found.
200	Unsupported message type	The value of component 1 of field MSH-9-message type is not supported.

Value	Description	Comment
201	Unsupported event code	The value of component 2 of field MSH-9-message type is not supported.
202	Unsupported processing ID	The value of field MSH-11-processing ID is not supported.
203	Unsupported version ID	The value of field MSH-12-version ID is not supported.
204	Unknown key identifier	The ID of the patient was not found. Used for update and delete transactions.
205	Duplicate key identifier	The ID of the patient already exists. Used for create transactions.
206	Application record locked	The transaction could not be performed at the application storage level because of a lock on the database file or table.
207	Application internal error	An application error not explicitly covered by other codes.

Table 0361: Application

This table provides MiHIN-defined values to be sent in component 1 of fields MSH-3-sending application and MSH-5-receiving application.

Value	Comment
Application Specific OID	To be used in MSH 3
Transitions of Care	To be used in MSH 5 by all organizations sending to MiHIN
Notifications	Other values will be defined for messages sent by MiHIN

Table 0362: Facility

This table provides values to be sent in component 1 of fields MSH-4-sending facility and MSH-6-receiving facility.

Value	Comment
Michigan Health Information Network	To be used in MSH-6 by all organizations sending to MiHIN
Facility Specific OID	To be used in MSH-4 by all organizations sending to MiHIN

Table 0516: Error Severity

This table provides HL7-defined values to be sent in field ERR-4-severity.

Value	Description	Comment
E	Error	Transaction was unsuccessful
I	Information	Transaction was successful but includes additional information, such as a message to be sent and/or received by the patient or provider
W	Warning	Transaction was successful, but unexpected issues or side effects (e.g., an unexpected indeterminate state that requires additional action by the message generator) may exist

8 Troubleshooting

8.1 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 transmitted.	Additional feature requested.
Primary Initiation Method	*Phone:* (517) 336-1430	*Phone:* (517) 336-1430	Web form at http://mihin.org/ requesthelp	Web form at http://mihin.org/ requesthelp
Secondary Initiation Method	Web form at http://mihin.org/ requesthelp	Web form at http://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 this use case can be found at:

http://mihin.org/about-mihin/faqs/

If you are experiencing difficulties or have questions, please contact the MiHIN Help Desk:

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

9 Legal Advisory Language

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

a. By health care providers for Treatment, Payment and/or Health Care Operations consistent with the requirements set forth in HIPAA
b. Public health activities and reporting as permitted by HIPAA and other Applicable Laws and Standards
c. To facilitate the implementation of "Meaningful Use" criteria as specified in the American Recovery and Reinvestment Act of 2009 and as permitted by HIPAA
d. Uses and disclosures pursuant to an Authorization provided by the individual who is the subject of the Message or such individual's personal representative in accordance with HIPAA
e. By Data Sharing Organizations for any and all purposes, including but not limited to pilot programs and testing, provided that such purposes are consistent with Applicable Laws and Standards
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. HIN 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 HIN's control.