Longitudinal Record

Implementation Guide

Version 7
July 10, 2020

Document History

Date	Version	Sections Revised	Description	Modifier
03/17/2020	1	All	Document created	B. McKee
03/22/2020	2	All	Document revised	B.McKee
04/23/20	3	All	Document revised	B.McKee, D. Spoelstra
4/30/2020	4	1.2; 2.x	Document revised	B. McKee, D. Spoelstra
5/13/2020	5	All	Document Revisions	B. McKee
6/11/2020	6	3.2.1	Document revised	B. McKee, D. Spoelstra
7/10/2020	7	3.1.2	Added language around Super C-CDA	J. Noland

Table of Contents

Acronyms and Abbreviations Guide

ACK	Acknowledgement
ACRS®	Active Care Relationship Service®
ADT	Admission, Discharge, Transfer
CCD®	Continuity of Care Document®
CDA®	Clinical Document Architecture®
C-CDA	Consolidated Clinical Document Architecture
DQA	Data Quality Assurance
DSM	Direct Secure Messaging
EHR	Electronic Health Record
HIN	Health Information Network
HL7®	Health Level Seven®
LIS	Laboratory Information System
LR	Longitudinal Record
MDHHS	Michigan Department of Health and Human Services
MDM	Medical Document Management
MDSS	Michigan Disease Surveillance System
MiHIN	Michigan Health Information Network Shared Services
MUCA	Master Use Case Agreement
NwHIN	Nationwide Health Information Network
ORU	Observation Result
PO	Participating Organization
TDSO	Trusted Data Sharing Organization

UCA	Use Case Agreement
UCE	Use Case Exhibit
UCS	Use Case Summary
VPN	Virtual Private Network
XCA	Cross Community Access
XML	Extensible Markup Language

Definitions

Acknowledge (ACK). An acknowledgement (ACK) is a signal that is passed between communicating processes, computers, or devices to signify acknowledgement, or receipt of message, as part of a communications protocol.

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

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

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

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

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.

Attribution. The connection between a consumer and their healthcare providers. One definition of attribution is "assigning a provider or providers, who will be held accountable for a member based on an analysis of that member's claim data." The attributed provider is deemed responsible for the patient's cost and quality of care, regardless of which providers deliver the service.

Data Sharing Agreement. Any data sharing organization agreement signed by both Michigan Health Information Network Shared Services (MiHIN) and a participating organization. Data sharing organization agreements include but are not limited to: Qualified Data Sharing Organization Agreement, Virtual Qualified Data Sharing Organization Agreement, Consumer Qualified Data Sharing Agreement, Sponsored Shared Organization Agreement, State Sponsored Sharing Organization Agreement, Direct Data Sharing Organization Agreement, Simple Data Sharing Organization Agreement, or other data sharing organization agreements developed by MiHIN.

Electronic Address. A string that identifies the transport protocol and end point address for communicating electronically with a recipient. A recipient may be a person, organization or other entity that has designated the electronic address as the point at which it will receive electronic messages. Examples of an electronic address include a secure email address (Direct via secure Simple Mail Transfer Protocol (STMP)) or secure Uniform Resource Locator (URL) (SOAP/XDR/REST/FHIR). Communication with an electronic address may require a digital certificate or participation in a trust bundle.

Electronic CQM (eCQM). Clinical Quality Measures (CQM) that are specified in a standard electronic format and are designed to use data from Health information technology (IT) systems for measurement.

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

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

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

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

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

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

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

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

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

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

Longitudinal Record. A single comprehensive patient record comprised of message content from PO and/or TDSOs.

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

Message. A mechanism for exchanging message content between the participating organization to Michigan Health Information Network Shared Services (MiHIN), including query and retrieve.

Message Content. Information, as further defined in an Exhibit, which is sent, received, found or used by a participating organization to or from Michigan Health Information Network Shared Services (MiHIN). Message content includes the message content header.

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

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

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

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

Negative Acknowledgment (NAK or NACK). "Not acknowledged" and is used to negatively acknowledge or to reject previously received message content or to indicate some kind of error.

Notice. A message transmission that is not message content and which may include an acknowledgement of receipt or error response, such as an "acknowledged" ACK or "not acknowledged" NACK.

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

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

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

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

Query and Retrieve. Allows for querying a database for information and retrieval of that information.

Query for Documents Message. A message specific to the Query for Documents Web Services Interface Specification that references the Integrating the Healthcare Enterprise's Cross-Community Access specification.

Service Interruption. A party is unable to send, receive or find message content for any reason, including the failure of network equipment or software, scheduled or unscheduled maintenance, general Internet outages, and events of force majeure.

Single Sign On (SSO) is an authentication process that allows a user to access multiple applications with one set of login credentials.

Transactional Basis. The transmission of message content or a notice within a period 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 (TOC). The movement of a patient from one setting of care (e.g., hospital, ambulatory primary care practice, ambulatory specialty care practice, long-term care, rehabilitation facility) to another setting of care and can include transfers within a healthcare organization.

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

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

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

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

Use Case Summary (UCS). The document providing the executive summary, business justification and value proposition of a use case. Use case summaries are provided by Michigan Health Information Network Shared Services (MiHIN) upon request and via the MiHIN website at www.mihin.org.

1. Introduction

1.1 Purpose of Use Case

> *The Longitudinal Record use case supports provider workflow improvements by displaying clinical results in a central location and other services performed at the point of care across disparate systems.*

The Longitudinal Record (LR) is a single comprehensive patient record comprised of data from numerous data sources across the healthcare continuum. It is designed to be one record per patient by using comprehensive patient matching logic wrapped in a consent management model. The data sent to the Michigan Health Information Network Shared Services (MiHIN) by participating organizations (PO) is further standardized and normalized by MiHIN before indefinite storage.

The Longitudinal Record, when used for Treatment, Payment, Operations, Public Health, Federal Programs, Individual Authorizations, or permitted or required by law, allows providers and other healthcare professionals to have efficient access to clinical data. This will help with clinical decision support, trending analysis, population health management, medication management, and numerous other care activities.

The coordination of care across the healthcare continuum can be very challenging. When data is unavailable it can have a negative impact on healthcare costs as well as patient care. The Longitudinal Record presents this data in a timely manner and in a usable, actionable format so recipients can deliver efficient and effective patient care.

The intended audiences for this use case include but are not limited to hospitals, ambulatory clinics, health departments, physician offices, and medical practices.

1.2 Message Content

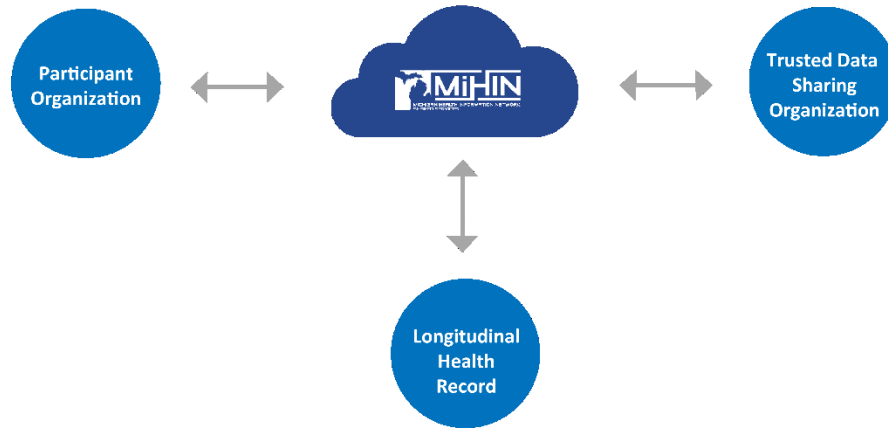The LR accepts HL7 2.x for all message types except C-CDAs, which should be sent in XML format.

1.3 Data Flow and Actors

Multiple actors can participate in this use case, each with a specific role in the process.

- **Actor:** PO and/or TDSOs
- **Role:** Sends Message Content to HIN.

- **Actor:** HIN
- **Role:** Stores Message Content and makes the Message Content available to PO and/or TDSOs.

- **Actor:** PO and/or TDSOs
- **Role:** Accesses Message Content

1. PO and/or TDSOs sends Message Content to HIN.
2. HIN stores Message Content and makes the Message Content available to PO and/or TDSOs.
3. PO and/or TDSOs access Message Content.

1.3.1 Additional Information

For more information about this use case, all documents related to this use case can be found at https://mihin.org/longitudinal-record-use-case/

2 Standard Overview

2.1 Message Format

Specifications for POs submitting message content to the LR will be addressed in the specific use case of the message content that's being contributed.

2.1.1 HL7 2.x ACD Document Message Example

To contribute ACDs to the LR, please refer to the Electronic Submission of Advance Care Documents Implementation Guide for message examples.

2.1.2 HL7 2.x Imaging Message Example

The PO must first participate in the Radiology Document Delivery Use Case in order to allow LR users access to radiology images in the PO's PACS. Additional configuration and requirements as outlined in the Imaging Use Case Implementation Guide will be necessary.

2.2 Administrative and Technical Requirements

In addition to the required Use Case under the MUCA, PO submitting Message Content must enter into the following Use Cases: Statewide Admission Discharge Transfer, Health Directory, Active Care Relationship Service, Common Key Service, Exchange Consolidated Clinical Document Architecture, Statewide Lab Orders-Results, Radiology Document Delivery, and Transcribed Document Delivery.

The required legal agreements are available by contacting legal@mihin.org.

2.3 Configuration Steps for access

Based on the organization's data access preferences, this data can be made available in a variety of ways including but not limited to:

1. Web Based User Interface
2. Single Sign On via the provider's EHR
3. Query and Retrieve

2.4 Information for Electronic Health Record System Users

Healthcare providers wishing to access the LR via their EHR may do so through Single Sign On (SSO). Providers should inquire with their EHR vendor whether this is supported.

2.5 Information for Health Information Exchanges

Health information exchanges will need to work with their integration vendor to ensure they can receive and/or send HL7 2.x and/or C-CDA XML messages.

3 Onboarding Process

3.1 Initial Onboarding

For organizations to submit data via MiHIN under this use case, the organization will need to undergo two onboarding processes simultaneously. The two onboarding processes are legal onboarding and technical connectivity onboarding. These may occur in parallel – i.e. the organization can review and complete legal agreements with MiHIN while simultaneously establishing and testing technical connectivity.

To initiate these two parallel onboarding processes, notify MiHIN via http://mihin.org/requesthelp/.

3.1.1 Initial Legal Process

The first time an organization undergoes the legal onboarding process with MiHIN, the organization negotiates and enters into a data sharing agreement which then allows the Participating Organization (PO)to enter into one or more use cases via Use Case Exhibits (UCEs) or Pilot Activity Exhibits (PAEs).

Once an organization has entered into a data sharing agreement, the organization must sign the Master Use Case Agreement (MUCA) which then allows the PO to enter an unlimited number of UCEs or PAEs with MiHIN. A listing MiHIN's use cases are available upon request.

3.1.2 Initial Technical Connectivity Process

MiHIN considers itself a "transport agnostic" and offers multiple options for organizations to establish technical connectivity to transport data to MiHIN. Organizations should select one or more connectivity methods for message transport based on their technical capabilities, and put in a service request at www.mihin.org/requesthelp. Currently MiHIN accepts the following transport methods:

- LLP over IPsec VPN – Lower-Layer Protocol over Internet Protocol Security Virtual Private Network

- Web Services – MiHIN supports both SOAP and REST web services

- FTP – MiHIN supports FTP over SSL and SFTP.

- Direct Secure Messaging -

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

Additional transport methods may be added in the future. These can include NwHIN, XCA, REST/RESTFUL APIs, FHIR, and others.

MiHIN may also make CCDs available through MIDIGATE as a normalized CCD and/or a Super C-CDA.

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

1. The organization selects one transport method and establishes connectivity with MiHIN.
   a. **LLP over IPsec VPN** – MiHIN's site-to-site VPN request form must be completed, sent and approved by MiHIN. Send a request via www.mihin.org/requesthelp to obtain the VPN request form. A pre-shared key is then securely exchanged between the organization and MiHIN to initialize the connection. The LLP over IPsec VPN is the most efficient transport for very high volumes of messages.
   b. **Direct Secure Messaging** – HIN accepts Direct Secure Messages from Health Internet Service Provider (HISPs) that have EHNAC-DTAAP (DirectTrust) accreditation. Test messages are sent to verify HISP connectivity ("ping pong"). The Message Header section in the test messages is verified for appropriate routing configuration.
   c. **Web Services** – MiHIN supports both SOAP and REST web services. MiHIN and the client exchange certificates. MiHIN provides the client with an endpoint to send to, that is specific to the type of data the client will be sending.
   d. **FTP** – MiHIN supports FTP over SSL and SFTP and can receive message content via Secure File Transfer Protocol (SFTP). Organizations participating in the use case via SFTP will be required to establish SFTP with MiHIN. To establish SFTP, organizations will need to complete an SFTP form (provided by MiHIN) and submit it to help@mihin.org. MiHIN will then set up the SFTP and confirm access with the submitter.

2. PO should prepare to have a TEST and PROD port set-up to proceed with this use case. Once the TEST port has been established, the PO can send TEST data to test the connectivity to the TEST environment. The PO's technical resource should submit a service request for ports at www.mihin.org/requesthelp.

4 Specifications

4.1 Overview

Message specification are dependent on specific message types which are outlined in their respective Use Case Implementation Guide (UCIG). These include the following:

1. Statewide Admission Discharge Transfer (ADT) Notifications
2. Exchange Consolidated Clinical Document Architecture
3. Statewide Lab Orders – Results
4. Radiology Document Delivery – Radiology Studies
5. Transcribed Document Delivery
6. Electronic Submission of Advance Care Documents

A comprehensive specification document will be provided to the PO after message analysis has been completed and prior to the completion of the project.

5 Troubleshooting

5.1 Production Support

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

A list of common questions regarding the Longitudinal Record Use Case can be found at https://mihin.org/longitudinal-record-use-case/

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

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

6 Legal Advisory Language

This reminder applies to all UCEs or PAEs covering the exchange of electronic health information:

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

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

Under these agreements, "*Applicable Laws and Standards*" means all applicable federal, state, and local laws, statutes, acts, ordinances, rules, codes, standards, regulations and judicial or administrative decisions promulgated by any governmental agency, including the State of Michigan, or the Michigan Health Information Technology Commission as any of the foregoing may be amended, modified, codified, reenacted, promulgated or published, in whole or in part, and in effect from time to time which is enforceable against a Party. Without limiting the generality of the foregoing, "Applicable Laws and Standards" includes HIPAA "; the federal Confidentiality of Alcohol and Drug Abuse Patient Records statute, section 543 of the Public Health Service Act, 42 U.S.C. 290dd-2, and its implementing regulation, 42 CFR Part 2; the Michigan Mental Health Code, at MCLA §§ 333.1748 and 333.1748a; and the Michigan Public Health Code, at MCL § 333.5131, 5114a.

It is each PO's obligation and responsibility to ensure that it is aware of Applicable Laws and Standards as they pertain to the content of each message sent, and that its delivery of each message complies with the Applicable Laws and Standards. This means, for example, that if a UCE is directed to the exchange of physical health information that may be exchanged without patient authorization under HIPAA, the PO must not deliver any message containing health information for which an express patient authorization or consent is required (e.g., mental or behavioral health information).

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

7 Appendix

7.2.1 HL7 2.x Lab Result Message Example

Below is an HL7 2.X Lab message example for blood lead results.

```
MSH|^~\&||MediLabCo-Seattle^45D0470381^CLIA|WADOH|WA|200112171830|
|ORU^R01|200112170897|P|2.3.1
PID|1||10006579^^^1^MRN^1~afeuwdsvolwrdzu6dufn3ivbn4ixnl7uptbyxur7^^
^^CKS ||FRANKLIN^TRICIA^L||19860122|F|||770 SE PECAN
STREET^^PONTIAC^MI^48341||839-555-9557|118-555-5271|||||000-00-1103|
<hex 0D0A>
NK1|1|Doe^Jane^Lee^^^^L|MTH^Mother^HL70063|2166 Wells Dr^Apt
B^Seattle^WA^98109^ USA^M^^King^^A|^PRN^PH^^^206^6793240|<hex 0D0A>
ORC||||||||||||||||||||||MediLabCo - Northwest Pathology Ltd.,
Central Campus^^45D0470381^^^CLIA|2217 Rainier
Way^^Renton^WA^98002^USA^M^^Black
Hawk^A|^WPN^PH^helpline@medilab.com^^206^5549097|115 Pike
Plaza^Suite 2100^Seattle^WA ^98122^USA^^^^A|<hex 0D0A>
OBR|1||CHEM9700122|^^^3456543^Blood lead
test^L|||200111270930|||||||||BLDC^Blood capillary
|^Welby^M^J^Jr^Dr^MD|^WPN^PH^^^206^4884144|||||||||F <hex 0D0A>
OBX||SN|10368-9^Quantitative Blood
Lead^LN||^45|µg/dL|||||F|||200111300800|
45D0480381<hex 0D0A>
```

7.2.2 HL7 2.x Radiology Document Message Example

Below is an HL7 2.x Radiology message example

```
MSH|^~\&|RAD|Middle Medical Center^15D0470381^CLIA|||20190513003103|
|ORU^R01|53397275|P|2.3
PID|1|525606|525606^^^SHCPI^MR||O'Hara^Scarlett||19400117|F||2106-3
|1 Cotton Drive^^Tara^MI^41940^US^^^||(999)888-7777^PRN^PH||EN |M
||999999999|||||||||||N||NON |161046329119^^^MHP_FIN POOL^FIN
NBR^CD:15409808|384028782|||2186-5^Not Hispanic or Latino|||0
PV1|1|I|ED^ED26^01^10^^^^^^99HMCDEPO|E|||4444^Howser^Dougie|||EMR||
|||7|||4444^Howser^Dougie^^^^^|A|37605776|H|||||||||||||||||||||||||2
0190512234259|20190513234259|||||
ORC|RE|68840347^EPC|19P062932^EPC|19P062932|F||^^^20190513004020^201
90513004042^EDSTAT||20190513005953|^EDI^RAD^RESULTS
IN||4444^Cox^Perry|10100900^^^10100^^^^HMC ED|(810)262-
9429||||||||||||||||||I|VERBAL WITH
OBR|1|I68840347^EPC|I68840347^EPC|RAD9945^WRIST 3 VIEW RT
|ED|20190513003200|20190513005839|||||||||4444^Cox^Perry|(810)262-
9429|||||20190513005839||RAD|F||^^^20190513004020^20190513004042^EDS
TAT||||^Trauma|4444&Cox&Perry||||20190513003500|||||||||RAD9945^WRIST
3 VIEW RT^99HMCIMGP^^WRIST 3 VIEW|RT^(used to identify procedures
performed on the right side of
NTE|||Reason for Study: Trauma
```

```
OBX|1|ST|RADIOLOGY REPORT&GDT^RADIOLOGY REPORT^MMC|1|RMS ACCESSION
NUMBER: 123456789|||||||F||||MMC^MMC LAB^123 Anywhere
Rd^^Town^MI^41234|||||||||MMC^MMC LAB|123 Anywhere Rd^^Town^MI^41234
OBX|2|ST|RADIOLOGY REPORT&GDT^RADIOLOGY
REPORT^MMC|1||||||F||||MMC^MMC LAB^123 Anywhere
Rd^^Town^MI^41234|||||||||MMC^MMC LAB|123 Anywhere Rd^^Town^MI^41234
OBX|3|ST|RADIOLOGY REPORT&GDT^RADIOLOGY REPORT^MMC|1|STUDY ORDERED:
RAD9945|||||||F||||MMC^MMC LAB^123 Anywhere
Rd^^Town^MI^41234|||||||||MMC^MMC LAB|123 Anywhere Rd^^Town^MI^41234
OBX|4|ST|RADIOLOGY REPORT&GDT^RADIOLOGY
REPORT^MMC|1||||||F||||MMC^MMC LAB^123 Anywhere
Rd^^Town^MI^41234|||||||||MMC^MMC LAB|123 Anywhere Rd^^Town^MI^41234
OBX|5|ST|RADIOLOGY REPORT&GDT^RADIOLOGY REPORT^MMC|1|CLINICAL
INDICATION: Trauma.|||||||F||||MMC^MMC LAB^123 Anywhere
Rd^^Town^MI^41234|||||||||MMC^MMC LAB|123 Anywhere Rd^^Town^MI^41234

OBX|6|ST|RADIOLOGY REPORT&GDT^RADIOLOGY
REPORT^MMC|1||||||F||||MMC^MMC LAB^123 Anywhere
Rd^^Town^MI^41234|||||||||MMC^MMC LAB|123 Anywhere Rd^^Town^MI^41234
```

7.2.3 HL7 2.x Transcribed Document Message Examples

The following message types are accepted for Transcribed Documents:

Message Type	Description
MDM T02	Admit/visit notification
MDM T08	Transfer a patient
MDM T11	Document Cancel Notification (this will remove the document from the LPR)
ORU R01	Unsolicited Transmission of an Observation Message (converted to a corresponding MDM message before ingestion into the LPR)

Below are HL7 2.x Transcribed Document message examples. Transcribed documents can be sent as HL7 2.x MDM or ORU Message Types, and can be either textual or contain an embedded base64 encoded PDF

7.2.3.1 Transcribed Document ORU Message Type Example

```
MSH|^~\&|TRANS|Middle Medical
Center^15D0470381^CLIA||CLH|20200320134428|581|ORU^R01|4557448|P|2.1
PID|||10001^^^EPIC^MRN||TEST^TEST^A^^^^D||20000202|F||White|123 Test
Ave^^Test^MI^12345^US^L^^CLARE|CLARE|||ENG|DIVORCED|NONE|123412|000-
00-0000|||NOT HISPANIC||N||||||N
PV1||O|HAMOFM^^^HAHP^^^^^^^DEPID||||1234567890^Smith^John|||||||||||
OUTPATIENT|55127395||||||||||||||||||||||||||||||||55127395
ORC|RE|194385922
OBR|||194385922|PROGRESS^PROGRESS||20200318|202003180956|20200318095
6|||||||||1234567890^Smith^John||||||202003180956|||F|||||||112345678
90&Smith&John
```

```
OBX|1|TX|85200^Transcription Authentication Interface Message
Text||||||||F||||MMC^MMC LAB^123 Anywhere
Rd^^Town^MI^41234|||||||||MMC^MMC LAB|123 Anywhere Rd^^Town^MI^41234
OBX|2|TX|85200^Transcription Authentication Interface Message
Text||Pt called stating she is getting sick.  Started coughing last
evening and has a||||||F||||MMC^MMC LAB^123 Anywhere
Rd^^Town^MI^41234|||||||||MMC^MMC LAB|123 Anywhere Rd^^Town^MI^41234
OBX|3|TX|85200^Transcription Authentication Interface Message
Text||headache.  She is asking for refill of the benzonatate she had
previously and||||||F||||MMC^MMC LAB^123 Anywhere
Rd^^Town^MI^41234|||||||||MMC^MMC LAB|123 Anywhere Rd^^Town^MI^41234
OBX|4|TX|85200^Transcription Authentication Interface Message
Text||also a refill on NORCO.||||||F||||MMC^MMC LAB^123 Anywhere
Rd^^Town^MI^41234|||||||||MMC^MMC LAB|123 Anywhere Rd^^Town^MI^41234
OBX|5|TX|85200^Transcription Authentication Interface Message
Text||||||||F||||MMC^MMC LAB^123 Anywhere
Rd^^Town^MI^41234|||||||||MMC^MMC LAB|123 Anywhere Rd^^Town^MI^41234
```

7.2.3.2 Transcribed Document MDM Message Type Example

```
MSH|^~\&|TRANS|Middle Medical
Center^15D0470381^CLIA|||20190515093000|1|MDM^T02|29042802|P|2.3
EVN|T02|20190515093000
PID|1|525608|525608^^^SHCPI^MR||O'Hara^Scarlett||19400117|F||2106-
3|1 Cotton Drive^^Tara^MI^41940^US^^^||(999)888-
7777^PRN^PH||EN|M^||123456789|999-99-9999|||||||||||||N||NON|||||2186-
5|||
PV1|1|I|BRDI|||1234567890^Smith^John|||||||||1234567890^Smith^John^
^^^DO||256842600|||||||||||||||||||||||||||||||20190514085957|201905160859
57
TXA|1|apptlist^MMC
Appointments|TX|20190515093000|99999^UNKNOWN^PROVIDER|20190515093000
|20190515093000|20190515093000|1-
1^umhsbatch^glhcappt|||026427083||||||AU|U|AV|||
OBX|1|TX|||~                                               MMC
Appointment Report~~Date       Time      Status    Department
Specialty                       Provider                    Appt
Type~09/09/2020 10:45 AM Scheduled  BW05 OPHTHALMOLOGY
Ophthalmology                   Smith, John              Return
Visit Annual Exam           ~||||||F||||MMC^MMC LAB^123 Anywhere
Rd^^Town^MI^41234|||||||||MMC^MMC LAB|123 Anywhere Rd^^Town^MI^41234
```

7.2.4 HL7 2.x ADT Message Examples

MiHIN accepts the following HL7 v2.x ADT message types:

Message Type	Description
ADT_A01	Admit/visit notification
ADT_A02	Transfer a patient
ADT_A03	**Discharge/end visit***
ADT_A04	**Register a patient***
ADT_A05	Pre-admit a patient
ADT_A06	Change an outpatient to an inpatient
ADT_A07	Change an inpatient to an outpatient
ADT_A08	**Update patient information***
ADT_A09	Patient departing - tracking
ADT_A10	Patient arriving - tracking
ADT_A11	Cancel admit/visit notification
ADT_A12	Cancel transfer
ADT_A13	Cancel discharge/end visit
ADT_A14	Pending admit
ADT_A16	Pending discharge
ADT_A17	Swap patients
ADT_A23	Delete a patient record
ADT_A25	Cancel pending discharge
ADT_A27	Cancel pending admit
ADT_A28	Add person information
ADT_A31	Update person information
ADT_A35	Merge patient information - account only
ADT_A41	Merge account - patient account num
ADT_A18	Merge patient information
ADT_A34	Merge patient information - patient I
ADT_A40	**Merge patient - patient identifier list***
ADT_A45	Move visit information - visit number
ADT_A44	Move account information - patient account number

*Examples of the **Bold** message types are provided below

7.2.4.1 A04 Registration Event

```
MSH|^~\&|ADT|Middle Medical Center^Middle Medical
Center|ADT||20200429114116||ADT^A04|56725532|P|2.3
EVN|A04|20200429114116||||KS87SAMPLE^KIM
PID|1||500001|1054610|SAMPLE^MARY^T||19900203|F||2106-3|123 PLACE
STREET^^GRAND RAPIDS^MI^49999^USA||(999)-888-
7777^PRN^CP||eng|S|||999-99-9999|||Unknown|||0|||
PD1|||||99999^SAMPLE^PROVIDER^J|
```

```
NK1|1|SAMPLEKIN^FRANKLIN|CHD|123 PLACE STREET^^GRAND
RAPIDS^MI^49999^USA|(111)222-3333^^PRN|
PV1|1|O|RDMID^^^10|R|||||||OTH||||1|||1234567893^McStuffins^Jane^M|A|
1234567|K||||||||||||||||||||||||20200429114114
PV2|||||||20200429114000||||RPV|||||||||||N||||||||||N
AL1|1|DA|MUSTARD^MUSTARD|Low|Rash|20190531
DG1|1|ICD-10-CM|Z34.00^Encounter for supervision of normal first
pregnancy, unspecified trimester^ICD-10-CM|Encounter for supervision
of normal firs|20190206115745|A
DG1|2|ICD-10-CM|O99.019^Anemia complicating pregnancy, unspecified
trimester^ICD-10-CM|Anemia complicating pregnancy,
unspecifi|20190828102927|A
GT1|1|123456|SAMPLE^MARY^T||123 PLACE STREET^^GRAND
RAPIDS^MI^49999^USA|(999)-888-7777^PRN^CP||19900203|F|P/|SEL|999-99-
9999|||||ENTECH STAFFING|^^^^^USA|||Part
IN1|1|777777|88888|MOLINA MEDICARE|PO BOX 22811^^LONG
BEACH^CA^90801||(566)-455-
3444|||||||||SAMPLE^MARY^T|SEL|19900203|123 PLACE STREET^^GRAND
RAPIDS^MI^49999^USA|||5|||YES|||||||||||1234567|||||||DISABLED|F||E
Ver||BOT
IN2||999-99-
9999|||P|1A2B3C4D5E|||||||||||||||||||||||||||||||||||||||||||||||||
|||||||1000000001234||(999)-888-7777^PRN^CP
```

7.2.4.2 A08 Demographic Update

```
MSH|^~\&|ADT|Middle Medical Center^Middle Medical
Center|||20200429113624||ADT^A08|56725486|P|2.3
EVN|A08|20200429113624||REG|TEST1^SAMPLE^OPERATORJAY
PID|1||500001^^^HNA^MR||SAMPLE^MICHAEL^C||19450304|M||2106-3|7389
PLACE DRIVE^^FAIRBANK^MI^48420-1782^USA^P^^||(333)-444-
5555^PRN^PH||ENG|S|NON|888-88-8888|999-99-9999|||2186-5||N||||||N
PD1|||||1234567894^SAMPLEPCP^MANNY^^^^^^^^^PNPI
NK1|1|SAMPLE^PICHAEL|BRO|8123 PLACE DRIVE^^FAIRBANK^MI^48420-
1782^USA^P^^|(333)-555-6666^PRN^PH^^PRN|
PV1|1|I|CATH^CATH^PL^10^^^^^^^99HMCDEPO|R|||19876543210^SAMPLE^JAN^A
^^^^^^^^^PNPI||SAMPLE^JON^B^^^^^^^^^PNPI|CTH||||1|||19876543210^SAM
PLE^JAN^A^^^^^^^^^PNPI|A|12345678|K|||||||||||||||||||||||Ad|||2020042
9083759|
AL1|1|AA|BEE STING^BEE STING||Swelling|20140120
DG1|1|FT|RECURRENT ANGINA STATUS POST CORONARY AR^RECURRENT ANGINA
STATUS POST CORONARY ARTERY BYPASS (I20.9, Z95)|RECURRENT ANGINA
STATUS POST CORONARY AR||A
IN1|1|900601|10005|MCLAREN HEALTH PLAN|PO BOX 1511^^FLINT^MI^48501-
1511||(408)-312-
6228^^^^^888^3270671|||||||||||SAMPLE^MICHAEL^C|SEL|19450304|7389
PLACE DRIVE^^FAIRBANK^MI^48420-
1782^USA^P^^|||2|||YES|||||||||||123456|001236456789||||||Retired|M|^
^^^^USA|E Ver||BOT
```

7.2.4.3 A03 Discharge Event

```
MSH|^~\&|ADT|Middle Medical Center^Middle Medical
Center|||20200429114121||ADT^A03|56725533|P|2.3
EVN|A03|20200429114121|||ADT|TEST1^SAMPLE^OPERATORJAY|20200429114100
PID|1||500001|1054610|CERAR^MARIN^KERSTIN||19620302|F||2106-3|5053
22ND STREET^^IRVINE^CA^48840^USA^Home||(999)-888-
7777^PRN^CP||eng|S|||999-99-9999|||Unknown|||0||||
PD1|||||1234567891^SAMPLE^PRIMARYPAM
NK1|1|SAMPLEKIN^FRANKLIN|CHD|5644 EL CAMINO AVE^^OAKLAND^CA^48505-
3785^USA^^^|(111)222-3333^^PRN|
PV1|1|E|ED^CD5|E|||1234567892^SAMPLE^ATTENDNIGDAN^A|||EMR||||7||||A|
39650386|Y|||||||||||||||||31002|||||Di|||20200428124704|202004291141
00|
PV2||Q|||||||||||HOSP ENC|||||||||||N|N|||||||||||N
AL1|1|DA|ACE INHIBITORS^ACE INHIBITORS||Other (See Comm|20180324
AL1|2|DA|FD AND C BLUE NO.1^FD AND C BLUE NO.1||Hives|20120318
AL1|3|DA|IODINATED CONTRAST MEDIA^IODINATED CONTRAST
MEDIA||Hives|20140302
DG1|1|ICD-10-CM|Z78.9^Other specified health status|Other specified
health status|20200429081223|F
DG1|2|ICD-9-CM|V49.9^Unspecified conditions influencing health
status|Unspecified conditions influencing healt|20200429081223|F
GT1|1|123456|CERAR^MARIN^KERSTIN||5053 22ND
STREET^^IRVINE^CA^48840^USA^Home|(999)-888-
7777^PRN^CP||19620302|F|P/|SEL|999-99-9999|||||^^^^^USA|||DISABLED
IN1|1|777777|88888|MOLINA MEDICARE|PO BOX 22811^^LONG
BEACH^CA^90801||(566)-455-
3444|||||||||||CERAR^MARIN^KERSTIN|SEL|19620302|5053 22ND
STREET^^IRVINE^CA^48840^USA^Home|||5|||YES|||||||||||1234567|10000000
01234|||||||DISABLED|F||E Ver||BOT
IN2||999-99-
9999|||P|1A2B3C4D5E||||||||||||||||||||||||||||||||||||||||||||||||||||
|||||||1000000001234||(999)-888-7777^PRN^CP
```

7.2.4.4 A40 Patient Merge

```
MSH|^~\&|ADT|Middle Medical Center^Middle Medical
Center|ADT||20200429090104||ADT^A40|Q389265099T425303138|P|2.3|
EVN|A40|20200429090104|||KS87SAMPLE^KIM
PID|1||500001|1054610|CERAR^MARIN^KERSTIN||19620302|F||2106-3|5053
22ND STREET^^IRVINE^CA^48840^USA^Home||(999)-888-
7777^PRN^CP||eng|S|||999-99-9999|||Unknown|||0||||
PD1|||||99999^SAMPLE^PROVIDER|||||||||Y
MRG|400001|
```

7.2.5 HL7 2.x C-CDA Document Message Example

C-CDA messages should be sent in xml format:

Description	Path
Header Section	
Provider Organization	recordTarget/patientRole/providerOrganization/name or author/assignedAuthor/representedOrganization/name
Facility OID	recordTarget/patientRole/providerOrganization/id/extension == (See Facility OID Mapping)
EMR	author/assignedAuthor/assignedAuthoringDevice/manufacturerModelName
Patient First Name	recordTarget/patientRole/patient/name/given
Patient Last Name	recordTarget/patientRole/patient/name/family
Patient Date of Birth	recordTarget/patientRole/patient/birthTime
Patient Gender	recordTarget/patientRole/patient/administrativeGenderCode/code
Patient SSN	if recordTarget/patientRole/id/root == "2.16.840.1.113883.4.1" then recordTarget/patientRole/id/extension
Patient Address	recordTarget/patientRole/addr/streetAddressLine
Patient City	recordTarget/patientRole/addr/city
Patient State	recordTarget/patientRole/addr/state
Patient Zip Code	recordTarget/patientRole/addr/postalCode
Visit ID	componentOf/encompassingEncounter/id/extension
Progress Note	templateId/root == "2.16.840.1.113883.10.20.22.1.9"
Attending Provider First Name	documentationOf/serviceEvent/performer/assignedEntity/assignedPerson/name/given or componentOf/encompassingEncounter/encounterParticipant/assignedEntity/assignedPerson/name/given
Attending Provider Last Name	documentationOf/serviceEvent/performer/assignedEntity/assignedPerson/name/family or componentOf/encompassingEncounter/encounterParticipant/assignedEntity/assignedPerson/name/family
Attending Provider NPI	documentationOf/serviceEvent/performer/assignedEntity/id/extension or componentOf/encompassingEncounter/encounterParticipant/assignedEntity/id/extension

	Attending Provider Phone	documentationOf/serviceEvent/performer/assignedEntity/telecom/value or componentOf/encompassingEncounter/encounterParticipant/assignedEntity/telecom/value
Component Section	**Admission Medications**	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.1 " or "2.16.840.1.113883.10.20.22.2.1.1" or "2.16.840.1.113883.10.20.22.2.38"
	Active Problems	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.5" or "2.16.840.1.113883.10.20.22.2.5.1"
	Admission Medications	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.1 " or "2.16.840.1.113883.10.20.22.2.1.1" or "2.16.840.1.113883.10.20.22.2.38"
	Advanced Directives	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.4.48" or "2.16.840.1.113883.10.20.22.2.21" or "2.16.840.1.113883.10.20.22.2.21.1"
	Allergies	if component/structuredBody/component/section/templateId/root =="2.16.840.1.113883.10.20.22.2.6.1"
	Chief Complaint	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.12" or "2.16.840.1.113883.10.20.22.2.13" or "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1"
	Discharge Instructions	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.41"
	Encounter Type	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.22.1" or "2.16.840.1.113883.10.20.22.2.22" or "2.16.840.1.113883.10.20.22.4.49"
	Functional Status	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.14"
	Immunizations	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.2" or "2.16.840.1.113883.10.20.22.2.2.1"
	Plan of Care	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.10"
	Procedures	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.7" or "2.16.840.1.113883.10.20.22.2.7.1"

	Reason for Referral	if component/structuredBody/component/section/templateId/root == 1.3.6.1.4.1.19376.1.5.3.1.3.1
	Results/Laboratory Values	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.3.1"
	Social History	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.17"
	Tests Ordered	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.16"
	Visit Diagnosis	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.24 " or "2.16.840.1.113883.10.20.22.2.43" or "2.16.840.1.113883.10.20.22.2.8"
	Visit Diagnosis Description	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.22" or "2.16.840.1.113883.10.20.22.2.22.1" then component/structuredBody/component/section/templateId/entry/encounter/templateId/root ="2.16.840.1.113883.10.20.22.4.49"/entryRelationship/act/templateId/root == "2.16.840.1.113883.10.20.22.4.80"
	Vital Signs	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.4.1" or "2.16.840.1.113883.10.20.22.2.4"
	Discharge Medication Name	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.11" or "2.16.840.1.113883.10.20.22.2.11.1" then component/structuredBody/component/section/templateId/entry/act/templateId/root ="2.16.840.1.113883.10.20.22.4.35"/entryRelationship/substanceAdministration/templateId/root == "2.16.840.1.113883.10.20.22.4.16"/consumable/manufacturedProduct/manufacturedMaterial/code/displayName or if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.11" or "2.16.840.1.113883.10.20.22.2.11.1" then component/structuredBody/component/section/templateId/entry/act/templateId/root ="2.16.840.1.113883.10.20.22.4.35"/entryRelationship/substanceAdministration/templateId/root == "2.16.840.1.113883.10.20.22.4.16"/consumable/manufacturedProduct/manufacturedMaterial/code/translation/displayName or if component/structuredBody/component/section/templateId/root ==

		"2.16.840.1.113883.10.20.22.2.11" or "2.16.840.1.113883.10.20.22.2.11.1" then component/structuredBody/component/section/templateId/entry/act /templateId/root ="2.16.840.1.113883.10.20.22.4.35"/entryRelationship/substanceAdmi nistration/templateId/root == "2.16.840.1.113883.10.20.22.4.16"/consumable/manufacturedProduct /manufacturedMaterial/code/originalText
	Discharge Medication Code	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.11" or "2.16.840.1.113883.10.20.22.2.11.1" then component/structuredBody/component/section/templateId/entry/act /templateId/root ="2.16.840.1.113883.10.20.22.4.35"/entryRelationship/substanceAdmi nistration/templateId/root == "2.16.840.1.113883.10.20.22.4.16"/consumable/manufacturedProduct /manufacturedMaterial/code/codeSystemName== "RxNorm" or "NDC" or if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.11" or "2.16.840.1.113883.10.20.22.2.11.1" then component/structuredBody/component/section/templateId/entry/act /templateId/root ="2.16.840.1.113883.10.20.22.4.35"/entryRelationship/substanceAdmi nistration/templateId/root == "2.16.840.1.113883.10.20.22.4.16"/consumable/manufacturedProduct /manufacturedMaterial/code/translation/codeSystemName== "RxNorm" or "NDC"
	Discharge Medication Begin Date	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.11" or "2.16.840.1.113883.10.20.22.2.11.1" then component/structuredBody/component/section/templateId/entry/act /templateId/root ="2.16.840.1.113883.10.20.22.4.35"/entryRelationship/substanceAdmi nistration/templateId/root == "2.16.840.1.113883.10.20.22.4.16"/effectiveTime/low/value
	Discharge Medication End Date	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.11" or "2.16.840.1.113883.10.20.22.2.11.1" then component/structuredBody/component/section/templateId/entry/act

		/templateId/root ="2.16.840.1.113883.10.20.22.4.35"/entryRelationship/substanceAdministration/templateId/root == "2.16.840.1.113883.10.20.22.4.16"/effectiveTime/high/value
	Discharge Medication Satus	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.11" or "2.16.840.1.113883.10.20.22.2.11.1" then component/structuredBody/component/section/templateId/entry/act/templateId/root ="2.16.840.1.113883.10.20.22.4.35"/entryRelationship/substanceAdministration/templateId/root == "2.16.840.1.113883.10.20.22.4.16"/statusCode/code
	Discharge Medication Dose Unit	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.11" or "2.16.840.1.113883.10.20.22.2.11.1" then component/structuredBody/component/section/templateId/entry/act/templateId/root ="2.16.840.1.113883.10.20.22.4.35"/entryRelationship/substanceAdministration/templateId/root == "2.16.840.1.113883.10.20.22.4.16"/doseQuantity/unit
	Discharge Medication Dose Quantity	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.11" or "2.16.840.1.113883.10.20.22.2.11.1" then component/structuredBody/component/section/templateId/entry/act/templateId/root ="2.16.840.1.113883.10.20.22.4.35"/entryRelationship/substanceAdministration/templateId/root == "2.16.840.1.113883.10.20.22.4.16"/doseQuantity/value
	Discharge Medication Instructions	if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.11" or "2.16.840.1.113883.10.20.22.2.11.1" then component/structuredBody/component/section/templateId/entry/act/templateId/root ="2.16.840.1.113883.10.20.22.4.35"/entryRelationship/substanceAdministration/templateId/root == "2.16.840.1.113883.10.20.22.4.16"/entryRelationship/act/templateId/root == "2.16.840.1.113883.10.20.22.4.20" or if component/structuredBody/component/section/templateId/root == "2.16.840.1.113883.10.20.22.2.11" or "2.16.840.1.113883.10.20.22.2.11.1" then component/structuredBody/component/section/templateId/entry/act/templateId/root

	="2.16.840.1.113883.10.20.22.4.35"/entryRelationship/substanceAdministration/templateId/root == "2.16.840.1.113883.10.20.22.4.16"/entryRelationship/substanceAdministration/templateId/root == "2.16.840.1.113883.10.20.22.4.147"