

Information for Veterans Implementation Guide

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Acronyms and Abbreviations Guide

CCD®	Continuity of Care		
	Document		
CDA®	Clinical Document		
	Architecture		
CGS	Common Gateway		
	Service		
CHAMPS	Community Health		
	Automated Medicaid		
	Processing System		
CHDR	Clinical Data Repository		
	/ Health Data		
	Repository		
CMS	Centers for Medicare &		
	Medicaid Services		
DS	Document Submission		
DSO	Data Sharing		
	Organization		
EPID	Enterprise Patient ID		
esMD	CMS Electronic		
	Submission of Medical		
	Documentation		
HIE	Health Information		
	Exchange		
HIN	Health Information		
	Network		
HITSP	Health Information		
	Technology Standards		
	Panel		
HL7	Health Level Seven		
ICN	Identification Control		
	Number		
IHE	Integrating the		
	Healthcare Enterprise		
MiHIN	Michigan Health		
	Information Network		
	Shared Services		
MPI	Master Person Index		
MUCA	Master Use Case		
	Agreement		
MVI	Master Veteran Index		

NHIE	Nationwide Health			
	Information Exchange			
NHIO	Nationwide Health			
	Information			
	Organizations			
NIST	National Institute of			
	Standards and			
	Technology			
NwHIN	Nationwide Health			
	Information Network			
OID	Object Identifier			
ONC	Office of the National			
	Coordinator			
PD	Patient Discovery			
PDQ	Patient Demographic			
	Query			
PO	Participating			
	Organization			
QD	Query for Documents			
RD	Retrieve Documents			
REST	Representational State			
	Transfer			
SAML	Security Assertion			
	Markup Language			
SOAP	Simple Object Access			
	Protocol			
SSA	Social Security			
	Administration			
TDSO	Trusted Data Sharing			
	Organization			
UCA	Use Case Agreement			
UCS	Use Case Summary			
URL	Uniform Resources			
	Locators			
VA	Department of Veterans			
	Affairs			
VLER	Virtual Lifetime			
	Electronic Record			
VPN	Virtual Private Network			
VW	VistA Web			



XCA	Cross Community
	Access
XCPD	Cross-Community
	Patient Discovery
XDR	Cross-Enterprise
	Document Reliable
	Interchange
XDS	Cross-Enterprise
	Document Sharing
XML	Extensible Markup
	Language



Definitions

- **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.
- **C32.** HITSP Summary Documents Using HL7 Continuity of Care Document Component http://www.hitsp.org/ConstructSet Details.aspx?&PrefixAlpha=4&PrefixNumeric=32.
- **C62.** The HITSP Unstructured Document Component is provided for the capture and storage of patient identifiable, unstructured document content, such as text, PDF, and images rendered in PDF. It is based on the Cross-Enterprise Sharing of Scanned Documents (XDS-SD) profile from IHE http://www.hitsp.org/ConstructSet Details.aspx?&PrefixAlpha=4&PrefixNumeric=62
- **Common Gateway.** The method by which data is sent and received by MiHIN using various national standard protocols (e.g. NwHIN SOAP, IHE XCA, IHE XDS.b).
- **CONNECT.** An open source software solution that supports health information exchange both locally and at the national level. CONNECT uses Nationwide Health Information Network standards and governance to make sure that health information exchanges are compatible with other exchanges being set up throughout the country (http://www.connectopensource.org/). This software solution was initially developed by federal agencies to support their health-related missions, but it is now available to all organizations and can be used to help set up health information exchanges and share data using nationally-recognized interoperability standards.
- Data Sharing Agreement. Any data sharing organization agreement signed by both 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.
- **EdgeSim.** Simulators that are utilized in a testing environment to simulate testing with a data sharing organization.
- **eHealth Exchange**. See the definition for Sequoia Project.
- **Exhibit.** Collectively, a use case exhibit or a pilot activity exhibit.
- **FedSim**. Simulators that are utilized in a testing environment to simulate testing with a federal partner e.g. SSA or VA



- **Health Level 7 (HL7).** An interface standard and specifications for clinical and administrative healthcare data developed by the Health Level Seven 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 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.
- Integrating the Healthcare Enterprise. An initiative by healthcare professionals and industry to improve the way computer systems in healthcare share information (http://www.ihe.net/). IHE promotes the coordinated use of established standards such as DICOM and HL7 to address specific clinical needs in support of optimal patient care. Systems developed in accordance with IHE communicate with one another better, are easier to implement, and enable care providers to use information more effectively. The NwHIN specifications utilize underlying IHE specifications for various services for health data exchange
- **Master Use Case Agreement (MUCA).** Legal document covering expected rules of engagement across all use cases. Trusted data sharing organizations sign master use case agreement one time, then sign use case exhibits for participation in specific use cases.
- **Michigan Health Information Network Shared Services.** The MiHIN 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, Statewide Consumer Directory (SCD), and the Medical Information DIrect GATEway (MIDIGATE®).
- **MiHIN Services**. The 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.
- **Nationwide Health Information Network (NwHIN).** See the definition for Sequoia Project.
- **Nationwide Health Information Organizations (NHIO).** Nodes on the eHealth Exchange that use the NwHIN web services to facilitate exchange of information with other nodes in the network.



- **NwHIN Authorization Framework Specification.** The purpose of this specification is to define the required exchange of information describing the initiator of a request between HIOs participating in the eHealth Exchange network. This enables a responding NHIO to evaluate the request based on the initiating NHIOs assertions and its own local policies and permissions.
- **NwHIN Document Submission (DS) Web Service Interface Specification.** The purpose of this specification is to provide the ability to "send" data for a given patient from an exchange partner to an HIE using configuration on the sender side.
- **NwHIN Gateway.** An implementation of the Nationwide Health Information Network specified web service interfaces. These web service interfaces communicate over secured HTTPS using Public Key Infrastructure supported by the NwHIN Operational Infrastructure.
- **NwHIN Interface.** An implementation of the NwHIN specified web service interfaces. These web service interfaces communicate over secured HTTPS using Public Key Infrastructure supported by the NwHIN Operational Infrastructure.
- **NwHIN Messaging Platform Specifications** The purpose of this specification is to define a base set of messaging standards and web service protocols which must be implemented by each node in the eHealth Exchange network and applies to all eHealth Exchange transactions.
- **NwHIN Patient Discovery Web Service Interface Specification.** The purpose of this specification is to define the mechanism by which one eHealth Exchange node can query another to reciprocally establish patient identity and to determine if a node may be a source of information for a specific patient.
- **NwHIN Query for Documents Web Service Interface Specification.** The purpose of this specification is to define the mechanism by which an initiating eHealth Exchange node can request a patient-specific list of available documents from a responding node using the patient ID obtained by a prior Patient Discovery transaction.
- **NwHIN Retrieve Documents Web Service Interface Specification.** The purpose of this specification is to define the mechanism by which an Initiating eHealth Exchange node can retrieve specific documents from a responding node using the Document Reference IDs obtained using a prior Query for Documents transaction.
- **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 MiHIN infrastructure service that primarily relates to a person.
- **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.



- **REST**. REST stands for Representational State Transfer, which is an architectural style, and an approach to communications that is often used in the development of web services.
- **Retrieve Documents Message**. Retrieve documents web services interface specification that references the Integrating the Healthcare Enterprise's Cross-Community Access specification.
- **Send / Receive / Find / Use (SRFU)**. Means sending, receiving, finding, or using message content. Sending involves the transport of message content. Receiving involves accepting and possibly consuming or storing message content. Finding means querying to locate message content. Using means any use of the message content other than sending, receiving and finding. Examples of use include consuming into workflow, reporting, storing, or analysis. Send/Receive/Find/Use (SRFU) activities must comply with Applicable Laws & Standards or State Administrative Code as that term is defined in this agreement and the data sharing agreement.
- **SOAP**. SOAP originally defined as Simple Object Access Protocol is a lightweight protocol intended for exchanging structured information in a decentralized, distributed environment. It uses XML technologies to define an extensible messaging framework providing a message construct that can be exchanged over a variety of underlying protocols. The framework has been designed to be independent of any particular programming model and other implementation specific semantics. For the eHealth Exchange to be a truly scalable, secure and interoperable network, a common transport layer is essential. The messaging platform is based on SOAP 1.2 messages over HTTP.
- **Specifications**. Specifications provide a standard set of service interfaces that enable the exchange of interoperable health information among the health information exchanges.
- **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 TDSO must follow to share specific message content with the MiHIN.
- **Use Case Exhibit.** The legal agreement attached as an exhibit to the master use case agreement that governs participation in any specific use case.
- **Use Case Implementation Guide (UCIG)**. The document providing technical specifications related to message content and transport of message content between participating organization, MiHIN, and other TDSOs. 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 MiHIN upon request and via the MiHIN website at www.mihin.org.
- **XCA**. The IHE (Integrating the Healthcare Enterprise®) standard for Cross-Community Access which provides specifications to query and retrieve patient relevant health information held by other communities.



XDS.b. The IHE (Integrating the Healthcare Enterprise®) standard for Cross-Enterprise Document Sharing revision b, which provides specifications to query and retrieve patient relevant healthcare data held within a community.



1. Introduction

1.1 Purpose of Use Case

Enables providers in private-sector facilities and in VA facilities to request each other's EHRs for veterans' health information through MiHIN.

Additionally, this use case scenario enables participants to respond to those requests for health information with a veteran's longitudinal record, such as those contained in Continuity of Care Documents (CCDs). This allows for a full and consistent visibility into a veteran's status as a patient for both VA and non-VA providers.

About 6 million of the nation's 21.6 million veterans receive regular care from Department of Veterans Affairs (VA) hospital facilities. Many of these veterans also see non-VA healthcare providers.

Since the VA and non-VA providers have different computer systems, it is difficult for both to access all of the records they need to manage a veteran's care. Presently there is no "bridge" between electronic records at the VA and electronic records at non-VA providers. As a result, a veteran's electronic health records (EHRs) at a VA facility can be missing information on care provided by private sector healthcare systems, and a veteran's EHRs at a private sector facility can be missing information on care provided from a VA facility.

By enabling the electronic exchange of a veteran's health information between VA and non-VA providers, all providers treating veterans will be able to coordinate better and improve the overall quality of care for veterans.

As a first step in bridging the gap between VA facilities and private-sector facilities, the VA created the "Choice" program in November 2014 to offer veterans a wider range of healthcare options. The Choice program allow veterans to use private-sector health facilities using VA benefits if the veterans cannot get a timely appointment at a VA facility or if they live more than 40 miles from a VA facility. This is a very significant first step. However, more work is needed to ensure continuity of care for America's veterans.

The VA uses a query-based exchange to find and receive healthcare information from other participating organizations that know the patient. In addition, the VA also supports inbound find and receive requests for healthcare information from other participating organizations. All together this provides immediate access to important health record information at the point of care.

Virtual Lifetime Electronic Record (VLER) is an EHR program that tracks the medical history of American soldiers through their entire service, from active duty to veteran status. VLER also makes veterans' medical records more portable across the U.S. The VLER Health Program allows VA healthcare providers, non-VA healthcare providers and veterans to securely share limited health information from a veteran's health record electronically.



VLER Health has two tools for sharing health information between VA and trusted non-VA healthcare providers:

- 1. VLER Health Exchange is a program that enables VA and non-VA providers to securely access certain health information for veterans electronically using the former eHealth Exchange, now called the Sequoia Project. The VA requires a veteran-signed authorization (VA Form 10-0485) prior to sharing veteran health information with non-VA providers over the eHealth Exchange.
- 2. VLER Health Direct (VA Direct) allows VA providers to send select information (e.g. referrals) about a veteran's healthcare to a non-VA provider using Direct Secure Messaging, a secure electronic communications tool similar to email.

The Information for Veterans use case supports and enhances the exchange of health information for veterans, such as the information contained in CCDs. This is done by using an infrastructure service called the Common Gateway Service (CGS). CGS is connected to and can communicate to the VA (and VLER) through the Sequoia Project (eHealth Exchange). It also offers the capability to send, find, receive and use healthcare data throughout Michigan or with other states or organizations also connected to the Sequoia Project.

1.2 Common Gateway Service

This use case relies on MiHIN infrastructure called the Common Gateway Service (CGS). CGS offers the capability to send, find and receive both intrastate and interstate healthcare data.

1.2.1 Common Gateway Services and Use Cases

CGS consists of a CONNECT Gateway together with an Exchange Broker.

The CONNECT Gateway utilizes Nationwide Health Information Network (NwHIN) SOAP-based messaging between eHealth Exchange participants, such as the federal agencies (SSA, VA, CMS esMD). It is used to:

- Send healthcare information using the Document Submission (DS) message
- Find healthcare information using the Patient Discovery (PD)
- Query for Documents (QD)
- Retrieve Documents (RD) messages

There are three different partners in these exchanges.

- An *exchange broker* manages the message transformation and routing, not only to and from the eHealth Exchange but also to and from Michigan's TDSOs.
- The *transformation services* allow TDSOs to send and receive in a number of protocols whether it is NwHIN SOAP, or the more widely used IHE (Integrating the Healthcare Enterprise) standards for XCA or XDS.b.
- The *routing services* send messages to applicable TDSOs and eHealth Exchange participants based on the use cases a TDSO has agreed to.

The Common Gateway Service is depicted in the figure below:



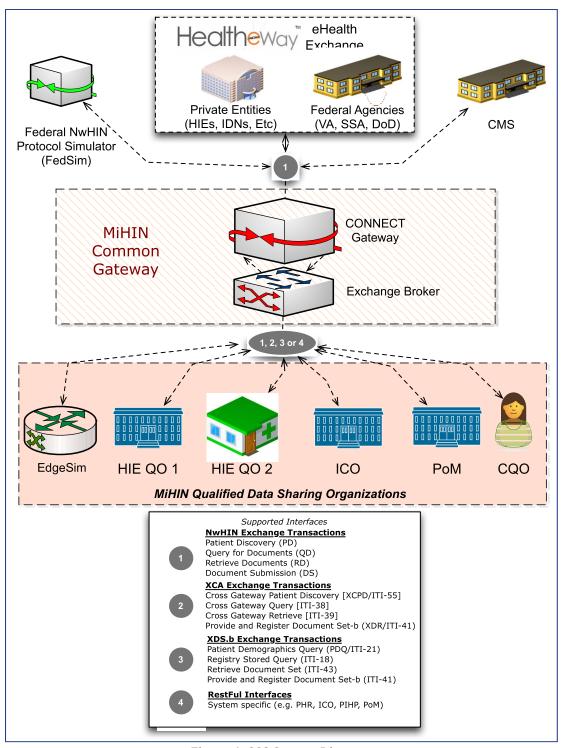


Figure 1. CGS Context Diagram

When TDSOs agree to send data through MiHIN there are a number of use cases where the CGS can be used as the transport method:

1. *Continuity of Care Documents*: Sending and receiving patient healthcare information between TDSO providers and other non-federal organizations statewide or nationally



- 2. *Information for Veterans:* Sending and receiving veterans' healthcare information between TDSO providers and VA.
- 3. *Social Security Determination*: Responding to Social Security Administration eligibility claims for patients within a TDSO(s) network of providers.
- 4. *CMS Request for CCD:* Sending documents to the esMD in support of eligibility determinations for patients within a TDSO(s) network of providers.

As indicated in the diagram above MIHIN has developed two simulators to aid TDSOs that are onboarding into the CGS by simulating either the federal agency use cases (FedSim) or other TDSOs (EdgeSim). This allows MIHIN and a TDSO to extensively test and verify that their systems work together and are ready to enter production.

1.3 Message Content

For this use case, message content means an XCA or XDS.b conforming message including XDR for document submission, XGQ for document query, and XGR for document retrieval.

1.4 Data Flow and Actors

In this use case, MiHIN brokers the messaging between VA and the participating organization.



Figure 2. Data Flow

VA supports both inbound and outbound query-based health data exchange.

The figure below describes an outbound request from the VA to MiHIN.

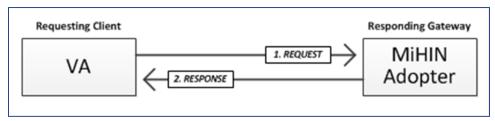


Figure 3. Outbound Request

An inbound request to the VA from MiHIN is described in the figure below.



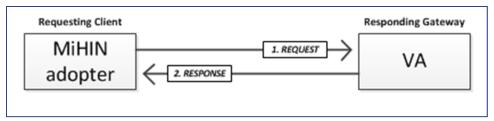


Figure 4. Inbound Request

1.4.1 Web Services Between MiHIN and VA

Three of the primary component web services of the document exchange process between VA and MiHIN are:

- Patient Discovery (PD)
- Query for Documents (QD)
- Retrieve Documents (RD)

1.4.1.1 Patient Discovery (Inbound and Outbound)

The PD web service interface is used by the requesting entity (VA or participating organization) to determine if the patient exists in the responding entity's system and has supporting documents.

Example: To make that determination, the VA sends a PD request to a participating organization. In this case, the VA gateway acts as the requesting client and the participating organization's gateway acts as the responding gateway. Similarly, any PO can initiate a PD request to the VA to determine if the patient exists in the VA system.

1.4.1.2 Query for Documents (Inbound and Outbound)

The QD web service interface is used to identify the medical documents that are available from the responding entity's system (a participating organization or VA) for the patient specified by the Patient ID in the PD transaction.

Example: The VA acts as the requesting client querying for documents from a participating organization's system utilizing the patient ID from the prior PD response. Similarly, the participating organization's gateway can also initiate a QD request for patient documents from the VA system.

1.4.1.3 Retrieve Documents (Inbound and Outbound)

The RD web service interface is used to obtain medical documents from the responding entity's system (participating organization or VA) for the patient using the document metadata in the QD response.

Example: The VA gateway acts as the requesting client retrieving documents from the participating organization's system utilizing the document ID and repository ID from the



prior QD response. Similarly, the participating organization's gateway can also initiate a RD request for patient documents from the VA system.

1.4.2 Web Services Between Participating Organizations and MiHIN

MiHIN considers itself "transport agnostic" and offers multiple options for TDSOs to exchange data via MiHIN. While transactions between CGS and VA strictly follow NwHIN standards, eHealth Exchange policy and specifications, MiHIN offers support for other IHE transactions.

MiHIN supports organizations within the state's qualified data sharing network that do not have capabilities to generate NwHIN transactions. MiHIN bridges the gap between the underlying IHE specifications - like XCPD and the requirements or constraints additionally stipulated by the eHealth Exchange - by providing additional configurations at the broker to facilitate the exchange.

For more information on transactions supported by the CGS and the specifications for PD, QD and RD, see Common Gateway Service Transactions and Specifications.

1.4.3 General Sequence of Messages

For communication between the VA and a participating organization where VA is the requestor, it begins with PD followed by QD and RD. It is presented in the figure below:



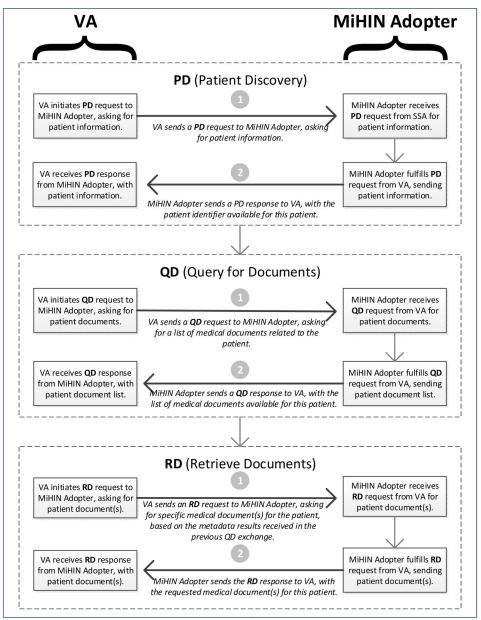


Figure 5



2 Standard Overview

2.1 Message Format

The message content and notices sent to and received from CGS meets the following standards:

- The ONC NwHIN Specifications set forth on the Healtheway website <u>Exchange Specifications</u>
- <u>The IHE Cross-Community Access (XCA) specifications</u>, supplemented with the message content required for a NwHIN SAML assertion
- <u>The IHE Cross-Enterprise Document Sharing (XDS.b) specifications</u>, supplemented with the message content required for a NwHIN SAML assertion

2.2 Message Content

The message payload sent to and received from the CGS meets the following standards for HITSP C32 or C62 formats or the HL7 C-CDA format, both with the underlying CCD specification as per HL7, per the links below:

■ Continuity of Care Document: <u>HL7/ASTM implementation guide for CDA® R2</u> Continuity of Care Document (CCD®) Release 1.

Meaningful Use Stage 1:

- HITSP C32: Summary documents using HL7 CCD component
- HITSP C62: Unstructured document component

Meaningful Use Stage 2:

- Consolidated Clinical Document Architecture (C-CDA): HL7 Implementation Guide for CDA® release 2: IHE Health Story Consolidation, Release 1.1 US Realm
- C-CDA R2: HL7 Implementation Guide for CDA® Release 2: Consolidated CDA Templates for Clinical Notes



3 Onboarding Process

3.1 Initial Onboarding

For organizations to share data with MiHIN under this use case, the organization undergoes 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 master organization agreement and master use case agreement which then allows the organization to enter into one or more use cases via use case exhibits.

Once an organization has entered into a master organization agreement, the organization can enter into an unlimited number of use cases with MiHIN. All of MiHIN's use cases are available at:

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

3.1.2 Initial Technical Connectivity Process

First steps for connecting to the staging Common Gateway Service are as follows:

- 1. Request and subsequently send the MiHIN site-to-site VPN request form. Form includes technical contacts, reason for VPN request, IP, and port values for connecting server.
- 2. New participating organization is added onto the MiHIN VPN. (Confirmation performed using telnet from both sides.)
- 3. Participating organization supplies the following information to MiHIN:
 - a. Self-signed certificate from organization server (to be added to Common Gateway trust store)
 - b. Organization Home Community ID (unique OID)
 - c. Organization Assigning Authority (unique OID)
 - d. Organization Repository ID (unique OID)
 - e. DS, PD, QD, RD service endpoints
 - f. Organization assertion information
- 4. Participating organization is supplied by MIHIN with:
 - a. Self-signed certificate from Common Gateway server (to be added to participating organization's server trust store)
 - b. Common Gateway DS, PD, QD, RD service endpoints
 - c. Staging simulators' HCID, assigning authority, and repository ID for onboard testing
- 5. Organizations should select one or more connectivity methods for message transport (e.g. PD, XCPD, or PDQ) based on their technical capabilities, and should communicate the selection(s).



3.2 Technical Onboarding and Testing

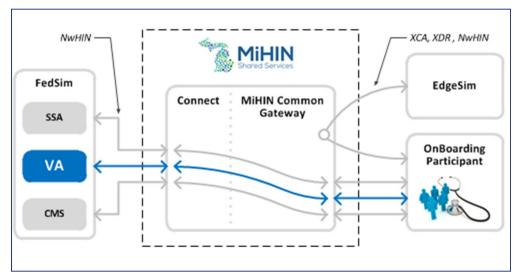


Figure 6. Common Gateway Testing Environment

Technical onboarding and testing is a three-step process, first starting with connectivity testing utilizing MiHIN simulators of the federal environment, followed by more focused use case testing with the simulators, and finally an end-to-end testing between the trading partners.

3.2.1 Connectivity and Smoke Test With Federal Simulator (Non-Use Case Specific)

If the onboarding participant has not had any prior testing for any exchange use cases, smoke tests for connectivity are required. The smoke tests include basic tests into the broker with the goal of hitting the Federal Simulator's PD, QD, and RD (and DS if applicable). The participants service is smoke tested as well with the Federal Simulator sending out PD, QD, RD and possibly DS requests via the staging CGS. The results of the tests and various log files in the MiHIN servers are confirmed for connectivity.

3.2.2 Testing Utilizing Federal Simulator (Inbound and Outbound) - VA Transaction Flow

The Federal Simulator can mock the various VA workflows. The onboarding participant is provided test data to test the VA work flows through the simulator. The goal of this testing phase is to ensure the participant can respond to an inbound patient discovery, and can subsequently have documents for that patient queried and retrieved.

3.2.3 Testing With VA Continuity of Care Exchange Use Case

On completion of testing with FedSim, the participating organization commences testing with the VA via MiHIN.



These test cases below provide an overview of the tests that VA tests with every partner on the Exchange. For a detailed list of test case documents and test data refer to the VA Test case documentation.

Testing with the VA involves a two-step process - content validation and technical testing

3.2.3.1 Content Validation

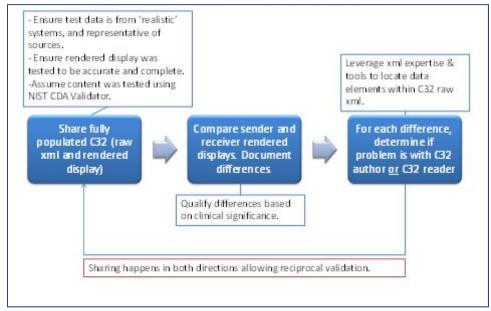


Figure 7. Content Validation Process

Content validation process is described below.

Partner will:

- Construct a test C32 xml file as fully populated as their system can achieve.
- Send this C32 to the NIST CDA validation tool and ensure there is no error (add URL and options on how to run the NIST tool).
- The VLER health team and partner integration team also run the received sample against the NIST tool.
- Create a rendered display of this C32 using your own style sheet and save it as a PDF or Word document. Ensure the display is accurate and complete, reflecting all sections and data elements contained in the xml document.
- Share the xml file, PDF/Word document, and the NIST error report with VLER health team.

VLER health team will:

■ Share the same 3 files describe above with partner.

Both Partner and VLER health team will:

Compare sender and receiver rendered displays and document the differences.



■ For each difference, determine if problem is with C32 author or C32 reader (i.e. style sheet). XML expertise is needed to locate data elements within C32 xml files.

3.2.3.2 Technical Testing With Software Quality Assurance Environment

3.2.3.2.1 Phase 1 – Manual Testing

Partner receives a welcome packet which includes the steps involved in the VLER Health on-boarding process. Assessment is done manually to determine that both partners can render usable information from the data provided.

The steps for Phase 1 are:

- 1. The partner integration team sends out the welcome package which includes all the VA data for this phase.
- 2. Partner sends all the required information to the VA.
- 3. The VA requests a VA station number for the partner.
- 4. The VA requests that the partner be setup in our Master Veteran Index (MVI).
- 5. VA and partner teams will manually render and evaluate the C32 and C62 XMLs against the minimum requirement information.
- 6. Exchange and evaluation of data l continues until minimum requirements are met.
- 7. Upon successful evaluation, partner team sends a notice to the VLER health business team asking for approval to move the partner into the VA test environment (SQA1 software quality assurance).
- 8. Approval from the Business Team constitutes the beginning of Phase 2.

The requirements for Phase 1 are:

- 1. Needed from Partner
 - a. C32 XML populated with test data and rendered style sheet
 - b. C62 XML populated with test data and rendered style sheet
 - c. C32 XPath, spreadsheet indicating data element locations
 - d. C62 XPath, spreadsheet indicating data element locations
 - e. Test, preproduction, and production OIDs (organization identifiers) and URLs (uniform resources locators)

2. Provided by the VA

- a. VistAWeb (VW) style sheet zip file
- b. C32 and C62 domain requirements
- c. C32 dashboard and comments template
- d. VA fully populated C32 NWHINONE test patient in XML format
- e. VA fully populated C32 NWHINONE test patient in rendered style sheet
- f. C62 CHDRONE test patient in XML format
- g. C62 CHDRONE test patient discharge summary title only in rendered style sheet
- h. C62 CHDRONE test patient discharge summary actual summary in rendered style sheet
- i. C32 Data Elements VW Supported Xpaths
- j. VLER C62 unstructured document UD Xpaths



k. New partner test OIDs and URLs

3.2.3.2.2 Phase 2 – Integration Testing

This phase begins with connecting the VA and trading partner's test systems. Once connected, both teams begin performing a patient discovery. Once a successful patient match on a test patient is achieved, then both teams perform query documents and retrieve documents from each other's test systems using the test patients and test patient data. Successful PD, QD, and RD along with successful rendering of the data received constitutes successful testing.

The steps for Phase 2 are:

- 1. The VA enters partner test OID and URL information in the VA test environment
- 2. Partner adds the VA to partner's test environment
- 3. Partner adds NwHIN test patient data to partner test environment with as much clinical data as possible
- 4. The VA and partner both runs test scripts on NwHIN test patient in each other's test environment
- 5. Partner integration team electronically evaluates the partner's C32 and C62 and provide feedback. Partner must also perform these same evaluations.
- 6. Upon successful exchanges of NwHIN test patient data, a notice is sent to the VLER health business team asking for approval to move the partner into the VA production environment.
- 7. Approval from the Business Team constitutes the beginning of Phase 3

The requirements for Phase 2 are:

- 1. Needed from partner
 - a. N/A
- 2. Provided by the VA
 - a. NwHIN test patients and required data

3.2.3.2.3 Phase 3 – Production Implementation

The VA partner integration team enters the partner into the VA preproduction environment. This involves entering the partner's organization information into the VA's preproduction systems.

Once this has been completed and verified and the VA has been setup in the partner preproduction system, preproduction testing begins with the provided CHDR test patients and information. The goal of this testing is to verify that the preproduction setups were successful and that there are no changes in the display or quality of data exchanged.

The steps for Phase 3 are:

- 1. The partner integration team enters the partner into the VA's preproduction and production environment.
- 2. The VA offers preproduction/production CHDR test patients and CHDR test patient required data.



- 3. Partner setup VA in the partner's preproduction environment.
- 4. Partner adds preproduction/production CHDR test patient data to partner preproduction and production environments with VA required data and as much additional clinical data as possible.
- 5. The VA business team and partner both runs test scripts on preproduction CHDR test patient in each other's preproduction environment.
- 6. Partner integration team and VA business team electronically evaluates Partner's C32 and C62 and provide feedback. Partner must also perform these same evaluations.
- 7. Upon successful exchanges of preproduction CHDR test patient data (PD, QD, RD), the VA Business team gives approval for the partner to go live in the production environment.
- 8. The VA business team and partner both runs test scripts on production CHDR test patient in each other's production environment.
- 9. Partner integration team and business team electronically evaluate the partner's C32 and C62 and provide feedback. Partner must also perform these same evaluations.
- 10. Upon successful exchanges of production CHDR test patient data (PD, QD, RD), the integration is considered complete and the partner successfully onboarded.

The requirements for Phase 3 are:

- 1. Needed from partner
 - a. N/A
- 2. Provided by the VA
 - a. CHDR test patient and CHDR test patient data for preproduction

3.2.4 VA VLER Test Cases

Test Script	Test Description	Request Parameters	Expected Results
TSB010.1 Patient Discovery VA Initiates (Successful Request)	This test verifies the VA's ability to capture the patient's permission to share VA health data across the eHealth Exchange and exercises the VA's ability to initiate a PD Request to a NHIE.	 Patient last name Patient first name Patient middle name Patient Social Security Number 	A patient match should be found and a patient correlation to the NHIE partner should be added after a patient discovery request is initiated by the VA for a patient that is opted out at the VA.



Test Script	Test Description		Request Parameters	Expected Results
TSB010.1.1 Patient Discovery VA Responds (Match of Twin Patients)	The object of this test is to verify that the VA can successfully respond to a PD request from an NHIE for a twin patient.	-	Record patient last name: NHINZZZTESTPATIENT Record patient first name: NHINMARK Record patient middle initial: C Record birth date trait: 2/2/1982 Record patient last name: NHINZZZTESTPATIENT Record patient first name: NHINMARC Record patient middle initial: A Record birth date trait: 2/2/1982	A patient match should be found and a patient correlation to the NHIE partner should be added after a patient discovery request is initiated each for two twin patients.
TSB010.1.2 Patient Discovery VA Responds (Match of Father and Son Patients)	The object of this test is to verify that the VA can successfully respond to a PD request from an NHIE for a father/son patient.	-	Record patient last name: NHINZZZTESTPATIENT SR. Record patient first name: NHINBOB Record patient middle initial: D Record birth date trait: 12/15/1960 Record patient last name: NHINZZZTESTPATIENT JR. Record patient first name: NHINBOB Record patient middle initial: D	A patient match should be found and a patient correlation to the NHIE partner should be added after PD requests are initiated for both a father and a son patient.
TSB010.1.3 Patient Discovery VA Responds (Match of Patient With ICN In Temp State)	The object of this test is to verify that the VA can successfully respond to a PD request from the nationwide health information exchange (NHIE) for a patient with an identification control number (ICN) in a temp state.	-	Record patient last name: NWHINZZZTESTPATIENT Record patient first name: PATIENT Record patient middle name: BOB	A patient match should fail and a patient correlation should not be added after a patient discovery is initiated for a patient with an ICN in a temporary state.
TSB010.1.4 Patient Discovery VA Responds (Match of Unlinked DNL Patient)	The object of this test is to verify that the VA does not successfully respond to a PD request from an NHIE for a patient whose correlation to the NHIE is unlinked.		Record patient last name Record patient first name Record patient middle initial Record birth date trait:	The NHIE partner receives a response but no demographic data after the patient discovery request is initiated by the NHIE partner for a patient with a patient correlation unlinked to the NHIE partner



Test Script	Test Description		Request Parameters	Expected Results
TSB010.3 Patient Discovery VA Initiates (No Response Patient Opted Out At NHIE)	This is a "No Response" test. This test validates that no response is sent from an NHIE if a patient is opted in at the VA, and opted out at the NHIE.		Record patient last name Record patient first name Record patient middle name Record patient Social Security Number	A patient match should be found and a patient correlation to the NHIE partner should be added after a PD request is initiated by the VA for a patient that is opted out at the NHIE partner. The NHIE partner is listed in the patient's sites and notices page in VW after the PD request is initiated.
TSB010.4 Patient Discovery VA Initiates (No Response Patient Does Not Exist At NHIE)	This is a "No Response" test. This test validates that no response is sent from an NHIE if a patient does not exist at that NHIE. Opt patient in on the VA side and initiate PD request to another NHIE. To validate, go to the VW page and check there is no NHIE listed as a site.	•	Patient does not exist in NHIE test environment	A patient match should not be found and a patient correlation to the NHIE partner should not be added after a PD request is initiated by the VA for a patient that is does not exist at the NHIE partner. The NHIE partner is not listed in the patient's sites and notices page in VW after the PD request is initiated.
TSB011.2 Patient Discovery VA Responds (Successful Response)	In this test the user verifies that the VA can successfully respond to a PD request initiated by an NHIE partner.	-	Record patient last name Record patient first name Record patient middle name Record patient Social Security Number	A patient match should be found and a patient correlation to the NHIE partner should be added after a PD request is initiated by the NHIE partner for a patient that is opted out at the NHIE partner.
TSB011.3 Patient Discovery VA Responds (Patient Opted Out At VA)	The object of this test is to verify that the VA can successfully respond to a PD request from an NHIE when the requested patient is opted out at the VA.	-	Record patient last name Record patient first name Record patient middle name Record patient Social Security Number	A patient match should be found and a patient correlation to the NHIE partner should be added after a PD request is initiated by the NHIE partner for a patient that is opted out at the VA.



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Test Script	Test Description	Request Parameters	Expected Results
TSB011.4 Patient Discovery VA Responds (Patient Does Not Exist At VA)	The object of this test is to verify that the VA can successfully respond to a PD request from an external NHIE when the patient is does not exist at the VA.	Record patient last name Record patient first name Record patient middle name Record patient Social Security Number	A patient match should not be found and a patient correlation to the NHIE partner should not be added after a PD request is initiated by the NHIE partner for a patient that is does not exist at the VA. The patient is not found in VW after the PD request is initiated.
TSB021.5 Patient Discovery VA Responds (Match of Patient Demographics When Social Security Number Not Sent)	The VA includes Social Security Number as part of the patient traits sent to the NHIE for the purposes of establishing and accurate match for the exchange of Veteran Patient Care information. The testing using this script is dependent on the patient traits identified within the MPI of the technical partner.	Record patient last name Record patient first name Record patient middle name Record missing trait(s)	A patient match should be found and a patient correlation to the NHIE partner should be added after a patient discovery request is initiated by the NHIE partner for a patient with no Social Security Number.
TSB021.6 Patient Discovery VA Responds (Match of Patient Demographics When Traits Not Sent)	The VA includes Social Security Number, street address, city, state, and zip code as part of the patient traits sent to the NHIE for the purposes of establishing an accurate match for the exchange of Veteran Patient Care information. The testing using this script is dependent on the patient traits identified within the MPI of the technical partner. The object of this test is to verify that the VA can successfully respond to PD request from an NHIE when Social Security Number, street address, city, state, and zip code are not patient traits sent by the NHIE.	Record patient last name Record patient first name Record patient middle name Record missing trait(s)	A patient match should be found and a patient correlation to the NHIE partner should be added after a PD request is initiated by the NHIE partner for a patient with no Social Security Number, street address, city, state, and zip code,



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TSB021.7 Patient Discovery VA Responds (Match of Patient Demographics When Traits Not	Test Description VA includes Social Security Number and phone number as part of the patient traits sent to NHIE for the purposes of establishing and accurate match for the exchange of Veteran Patient Care information. The testing using this script is dependent on the patient traits identified within the MPI of the technical partner.		Request Parameters Record patient last name Record patient first name Record patient middle name Record missing trait(s)	Expected Results A patient match should be found and a patient correlation to the NHIE partner should be added after a PD request is initiated by the NHIE partner for a patient with no Social Security Number and phone number.
Sent)	The object of this test is to verify that the VA can successfully respond to a PD request from an NHIE when Social Security Number and phone number are not patient traits sent by the NHIE. The object of this test is to	•	Record patient last name	In the VW NwHIN
TSB002.1 Document Query VA Initiates (Successful Query)	verify a user in the VA system can initiate a query for NwHIN documents to another NHIE. This test is conducted by using VW and by accessing the adapter audit logs and the adapter cache.		Record patient last name Record patient middle name Record patient Social Security Number	documents page, a link to the patient's C32 document from the NHIE partner should display after the document query request is initiated by the VA.
TSB002.9 Document Query VA Initiates (No Reply Patient Opted Out At NHIE)	The object of this test is to verify that a user in the VA system can query another NHIE for a document. The external NHIE will not return document metadata for the patient because the patient is opted out at the external NHIE.		Record patient last name Record patient first name Record patient middle name Record patient Social Security Number	In the VW NwHIN documents page, a link to the patient's C32 document from the NHIE partner should not display after the document query request is initiated by the VA for a patient opted out at the NHIE partner.



Test Script	Test Description	Request Parameters	Expected Results
TSB003.1 C32 Document Retrieve VA Initiates (Successful Retrieve)	This test validates the VA can successfully retrieve a NwHIN C32 document using VW. The retrieved NwHIN document can be displayed as a whole, single document containing the VA supported content modules. The data from the NwHIN document may be viewed under the VW clinical domains where the NwHIN data is aggregated (as notated by the double dagger icon). This test validates the VA	Record patient last name Record patient first name Record patient middle name Record patient Social Security Number	The patient's C32 document from the NHIE partner should display with all the C32 data modules populated that have been identified within the partner's technical assessment report. Also, the data displays under the VW clinical domains where NwHIN data is aggregated with data from the VA VistAWeb facilities.
TSB003.2 C62 Document Retrieve VA Initiates (Successful Retrieve)	can successfully retrieve data from an NwHIN C62 document using VW. The data from the NwHIN document may be viewed under the VW clinical domains where the NwHIN data is aggregated (as notated by the double dagger icon).	Record patient first name Record patient middle name Record patient Social Security Number	document displays for each of the following C62 document types retrieved: consults and procedures, discharge summaries, radiology reports, progress notes, surgery reports, and surgical pathology reports. The data displays under the VW clinical domains where NwHIN data is aggregated with data from the VA VistAWeb facilities.
TSB004.2 Document Query VA Responds (Successful Query)	The object of this test is to verify the VA can successfully respond to a DQ request from a requesting NHIE by providing the VA document information (metadata) that could be used in a subsequent document retrieve request to retrieve the VA document. The VA system dynamicallygenerates the NwHIN document for the requested patient and stores the document and its metadata into the adapter's temporary storage/cache.	Record patient last name Record patient first name Record patient middle name Record patient Social Security Number	NHIE partner confirms that they receive a DQ response from the VA and receive VA document metadata after a DQ request has been initiated by the NHIE partner.



Test Script	Test Description	Request Parameters	Expected Results
TSB004.9 Document Query VA Responds (No Reply Patient Opted Out At VA)	The object of this test is to verify that the VA can successfully enforce the patient's data sharing permission (do not share = opt out) and correctly respond to the DQ request from the NHIE by returning an acknowledgement to the DQ request but not returning VA document metadata for the patient.	Record patient last name Record patient first name Record patient middle name Record patient Social Security Number	NHIE partner confirms that they do not receive the VA document metadata after a DQ request has been initiated by the NHIE partner for a patient opted out at the VA.
TSB005.2 Document Retrieve VA Responds (Successful Retrieve)	This test validates the VA can successfully respond to a request from a NHIE for a VA document by sending the requested document.	 NwHIN document that was requested in the NHIE's DQ has been stored in the adapter cache Record patient last name Record patient first name Record patient middle name Record patient Social Security Number	NHIE partner confirms that they can retrieve a patient's C32 document from the VA.
TSB012.1 Document Retrieve VA Initiates (Successful Retrieve and Clinical Content Validation)	No corresponding test data	No corresponding test data	Data content for the patient's C32 and C62 documents from the NHIE partner is validated successfully with no missing data and fields and no differences between the data displayed in VAP and VW for each of the C32 and C62 data modules within the documents.
TSB012.2 Dynamic C32 Retrieve VA Initiates (Successful Retrieve)	The object of this test is to verify that a user in the VA system can initiate a query for a NwHIN document to another NHIE and successfully retrieve a NwHIN document using VW after test patient data is added in the NHIE. The NHIE dynamicallygenerates the NwHIN document for the requested patient.	Record patient last name Record patient first name Record patient middle name Record patient Social Security Number	The patient's C32 document from the NHIE partner should display with the test data (allergy or problem) added by the NHIE partner.



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Test Script	Test Description		Request Parameters	Expected Results
TSB012.3 Dynamic C32 Retrieve VA Responds (Successful Retrieve)	The object of this test is to verify that a user in the NHIE can initiate a query for NwHIN documents to the VA and successfully retrieve a NwHIN document using VW after test patient data is added in the VA. The VA system dynamically-generates the NwHIN document for the requested patient.	-	Record patient last name Record patient first name Record patient middle name Record patient Social Security Number	The NHIE partner confirms that the patient's C32 document from the VA displays with the test data (allergy or problem) added by the VA.
TSB010.1.5 Document Query VA Initiates (Patient With Merged EPID)	The object of this test is to verify a user in the VA system can initiate a query for NwHIN documents to another NHIE for a patient with a merged EPID (Enterprise Patient ID).		Record patient last name Record patient first name Record patient middle name Record patient Social Security Number	In the VW NwHIN documents page, a link to the patient's C32 document from the NHIE partner should display after the DQ request is initiated by the VA for a patient with a merged EPID.
TSB010.1.6 Document Retrieve VA Initiates (Patient With Merged EPID)	This test validates the VA can successfully retrieve an NwHIN C32 document using VW for a patient with a merged EPID. The retrieved NwHIN document can be displayed as a whole, single document containing the VA supported content modules.	-	Patient's EPID has been merged by the MVI team Record patient last name Record patient first name Record patient middle name Record patient Social Security Number	The patient's C32 document from the NHIE partner displays after the RD request is initiated for a patient with a merged EPID.
TSB010.1.7 Document Query VA Initiates (Patient With Merged ICN)	The object of this test is to verify a user in the VA system can initiate a query for NwHIN documents to another NHIE for a patient with a merged ICN	-	Record patient last name Record patient first name Record patient middle name Record patient Social Security Number	In the VW NwHIN Documents page, a link to the patient's C32 document from the NHIE partner should display after the DQ request is initiated by the VA for a patient with a merged ICN.



Test Script	Test Description	Request Parameters	Expected Results
TSB010.1.8 Document Retrieve VA Initiates (Patient With Merged ICN)	This test validates the VA can successfully retrieve a NwHIN C32 document using VW for a patient with a merged ICN (Identification Control Number). The retrieved NwHIN document can be displayed as a whole, single document containing the VA-supported content modules.	 Patient's ICN has been merged by the MVI team Record patient last name Record patient first name Record patient middle name Record patient Social Security Number 	The patient's C32 document from the NHIE partner displays after the document retrieve request is initiated for a patient with a merged ICN.



4 Specifications

4.1 Message Content Format

For messaging and content requirements related to VA use case refer to <u>VA VLER Health</u> <u>Exchange VBTR 02102014.docx</u>. The document lists additional constraints and requirements for VLER health related to:

- 1. Constraints on the SAML assertions for both inbound and outbound messages, e.g., PurposeOfUse values or SubjectRole constrained values.
- 2. Query parameters used in Query for Documents Document class codes supported, Service Start and Stop times usage, Document Entry status, Format codes and error codes
- 3. Retrieve documents for unstructured documents
- 4. Content/document for payload HITSP C32, C62

For more information on CGS-supported transactions and specifications, review the <u>Common Gateway Service Transactions and Specifications</u>.

4.2 Message Example

Sample Common Gateway Service transaction messages can be found in the <u>Common Gateway Service Sample Messages</u>.



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 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 the Information for Veterans Use Case can be found at:

https://mihin.org/information-for-veterans-use-case-2/

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

■ <u>www.mihin.org/requesthelp</u>

Phone: (517) 336-1430

■ Monday – Friday 8:00 AM – 5:00 PM (Eastern)



6 Legal Advisory Language

This reminder applies to all use cases covering the exchange of electronic health information:

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

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

Under the DSA, "Applicable Laws and Standards" means all applicable federal, state, and local laws, statutes, acts, ordinances, rules, codes, standards, regulations and judicial or administrative decisions promulgated by any governmental or self-regulatory agency, including the State of Michigan, the Michigan Health Information Technology Commission, or the Michigan Health and Hospital Association, as any of the foregoing may be amended, modified, codified, reenacted, promulgated or published, in whole or in part, and in effect from time to time. "Applicable Laws and Standards" includes but is not limited to HIPAA; the federal Confidentiality of Alcohol and Drug Abuse Patient Records statute, section 543 of the Public Health Service Act, 42 U.S.C. 290dd-2, and its implementing regulation, 42 CFR Part 2; the Michigan Mental Health Code, at MCLA §§ 333.1748 and 333.1748a; and the Michigan Public Health Code, at MCLA § 333.5131, 5114a.

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

Disclaimer: The information contained in this implementation guide was current as of the date of the latest revision in the Document History in this guide. However, Medicare and



Medicaid policies are subject to change and do so frequently. HL7 versions and formatting are also subject to updates. Therefore, links to any source documents have been provided within this guide for reference. MiHIN applies its best efforts to keep all information in this guide up-to-date. It is ultimately the responsibility of the participating organization and sending facilities to be knowledgeable of changes outside of MiHIN's control.

