Michigan Health Information Network Shared Services

Care Plan-Integrated Care Bridge Record (ICBR) Implementation Guide

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Acronyms and Abbreviations Guide

AA	Assigning Authority
CAH	Critical Access Hospital
CCD	Continuity of Care Document
CDA	Clinical Document Architecture
CGS	Common Gateway Service
DQ	Document Query
DR	Document Retrieve
DSM	Direct Secure Messaging
DS	Document Submission
HCID	Home Community ID
HIE	Health Information Exchange
HIE-QO	Health Information Exchange Qualified Data Sharing Organization
HITSP	Health Information Technology Standards Panel
HL7	Health Level Seven
ICBR	Integrated Care Bridge Record
ICO	Integrated Care Organization
ICT	Integrated Care Teams
IHE	Integrating the Healthcare Enterprise
IICSP	Individual Integrated Care and Supports Plan
MDHHS	Michigan Department of Health and Human Services
MiHIN	Michigan Health Information Network Shared Services
NHIO	Nationwide Health Information Organization
NwHIN	Nationwide Health Information Network
PIHP	Prepaid Inpatient Health Plans
QD	Query for Documents
QO	Qualified Data Sharing Organization
QRDA	Quality Reporting Document Architecture
RD	Retrieve Documents
SAML	Security Assertion Markup Language
SOAP	Simple Object Access Protocol
SSO	Sponsored Data Sharing Organization
SSSO	State Sponsored Data Sharing Organization
TDSO	Trusted Data Sharing Organization
UCA	Use Case Agreement
UCS	Use Case Summary
VPN	Virtual Private Network
XCA	Cross Community Access
XCAQ	XGQ Cross Gateway Query
XCAR	XGR Cross Gateway Retrieve
XDR	Cross-Enterprise Document Reliable Interchange
XDS	Cross-Enterprise Document Sharing
XGQ	XGQ Cross Gateway Query
XGR	Cross Gateway Retrieve
XML	Extended Mark-Up Language

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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. Health Information Technology Standards Panel (HITSP) Summary Documents using Health Level 7 (HL7) Continuity of Care Document (CCD) 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

C83. The HITSP CDA Content Modules Component. The CDA Content Modules Component defines the content modules for document based HITSP constructs utilizing clinical information- http://www.hitsp.org/ConstructSet_Details.aspx?&PrefixAlpha=4&PrefixNumeric=83

Common Gateway. The method by which data is sent and received by HIN using different 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 HIN and participating organization

DS Message. A message specific to the Document Submission (DS) Specification that conforms in content and format to the Integrating the Healthcare Enterprise's (IHE) Cross-enterprise Document Reliable Interchange specification.

EdgeSim. Simulators that are utilized in a testing environment to simulate testing with a Data Sharing Organization

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Exhibit. 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. Social Security Administration (SSA) or Veterans Affairs (VA)

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

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

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

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

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

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

IHE. IHE (Integrating the Healthcare Enterprise) is 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

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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

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

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

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

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

Michigan Care Improvement Registry. The IIS for the State of Michigan.

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

Nationwide Health Information Network. The Nationwide Health Information Network (NwHIN) is intended to provide a secure, nationwide, interoperable health information infrastructure that connects providers, consumers, and others involved in supporting health and healthcare.

Nationwide Health Information Organizations Health Information Organizations which act as nodes on the Nationwide Health Information Network are termed as NHIOs. The NHIOs use the NwHIN web services to facilitate exchange of information with other nodes in the network.

Negative Acknowledgment. "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 but not be limited to an acknowledgement of receipt or error response.

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 NwHIN 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 "submit" data for a given

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patient from an exchange partner to a Health Information Exchange (HIE) using configuration on the submission side.

NwHIN Gateway. An implementation of the Nationwide Health Information Network specified web service interfaces. These web service interfaces communicate over HTTPS secured using Public Key Infrastructure supported by the Nationwide Health Information Network Operational Infrastructure.

NwHIN Interface. The gateway accepts messages from the Nationwide Health Information Network into the gateway using web services as defined by the NwHIN specifications. These messages are then processed by various components in the gateway. These components may also be configured to work in pass-through mode, in which case the message is accepted from the Nationwide Health Information Network and passed directly to the adapter without additional processing like policy checks, patient correlation checks, etc.

NwHIN Messaging Platform Specification. 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 NwHIN network and applies to all NwHIN transactions.

NwHIN Query for Documents Web Service Interface Specification. The purpose of this specification is to define the mechanism by which an initiating NwHIN 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 (RD) Web Service Interface Specification. The purpose of this specification is to define the mechanism by which an Initiating NwHIN node can retrieve specific documents from a responding node using the Document Reference IDs obtained using a prior Query for Documents (QD) transaction.

OID. Object Identifier, as issued by Health Level 7 (HL7) (http://www.hl7.org/oid/index.cfm)

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

RD Message. A message specific to the Retrieve Documents (RD) Web Services Interface Specification that references the Integrating the Healthcare Enterprise's (IHE) Cross-Community Access (XCA) specification.

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

SOAP. SOAP, originally defined as Simple Object Access Protocol, is a lightweight protocol intended for exchanging structured information in a decentralized,

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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 Nationwide Health Information Network 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.

Specification. Specifications provide a standard set of service interfaces that enable the exchange of interoperable health information among the Health Information Exchanges (HIEs).

Target HIE. The HIE or Nationwide Health Information Network Node that the message or feedback is being addressed.

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

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

Use Case Exhibit. The legal agreement attached as an exhibit to the Master Use Case Agreement that governs participation in any specific Use Case.

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

XCA. The IHE (Integrating the Healthcare Enterprise®) standard for Cross-Community Access to support the means to query and retrieve patient relevant healthcare data held by other communities.

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

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1 Introduction

1.1 Purpose of Use Case

MI Health Link is an initiative to coordinate care for approximately 200,000 Michigan residents who are dually enrolled in Medicaid and Medicare. These "dual-eligible" beneficiaries often have complex diagnoses that require communication and coordination among physical, behavioral health and social service organizations, including integrated care organizations (ICOs) and prepaid inpatient health plans (PIHPs).

Because care management occurs independently within these organizations via integrated care teams (ICTs), there is a need for a streamlined way to exchange beneficiary health information and, in particular, integrated "Care Plans" across organizations to ensure that patient needs are met. The MI Health Link initiative promotes care coordination by sharing beneficiary information in a care plan called an Integrated Care Bridge Record (ICBR) between ICOs and members of ICTs.

The care plan contained in an ICBR delivers a comprehensive and detailed overview of a beneficiary's physical health, behavioral health, long-term care, and relevant services and support organizations. Specifically, an ICBR contains a member's history, conditions list, lab results, medications, assessments, individual integrated care and supports plan (IICSP), specialty provider reports, referrals, progress notes, and status changes.

The Exchange Care Plan - Integrated Care Bridge Record (ICBR) use case allows any participating organization to connect to the Michigan Health Information Network Shared Services (MiHIN) a single time and exchange documents with any other organization also participating in the use case. Participating organizations are defined as ICOs and PIHPs that have signed the use case agreement and that are participating in this use case.

1.2 Message Content

For this use case, message content refers to a document conforming to Clinical Document Architecture standards and adhering to the Integrated Care Bridge Record document implementation guide (separate from this document and available at www.mihin.org/care-plan-icbr/).

1.3 Data Flow and Actors

In this use case, MiHIN brokers the transport of ICBR messages between ICOs and PIHPs.

Each ICO/PIHP supports outbound submission, as well as both inbound and outbound query-based care plan exchange. This means that each organization can request information about a patient's care plan from another ICO/PIHP as well as respond to

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queries for information and send requested information to one of these participating organizations.

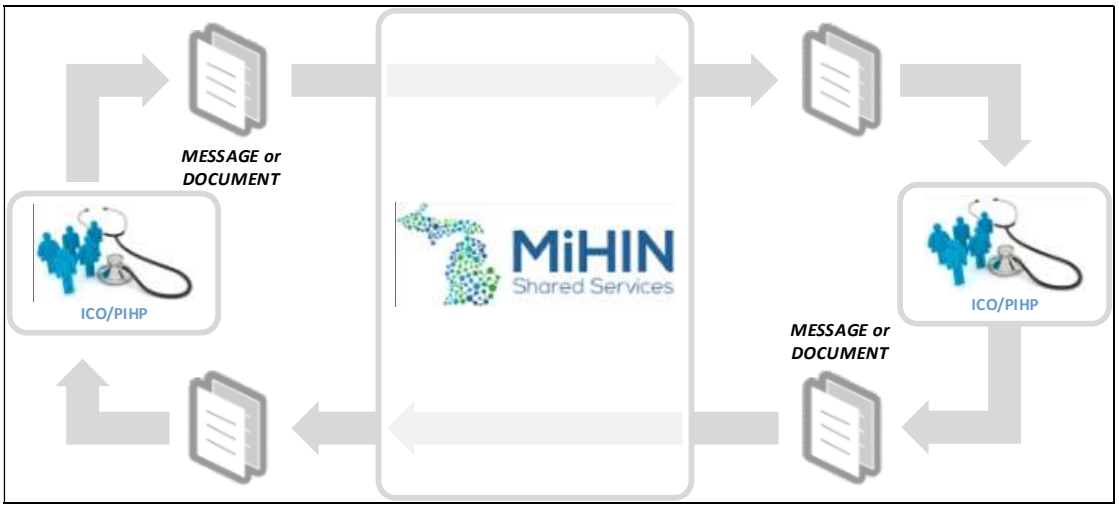

Figure 1: MiHIN Data Flow

For general information about this use case and other supported use cases, refer to the link below:

http://mihin.org/about-mihin/resources/use-cases-in-pilot/

1.3 Web Services between MiHIN and ICO/PIHP

Three of the primary component web services of the document exchange process between the ICO/PIHP and MiHIN are:

- Document Submission (DS/XDR)
- Query for Documents (QD/XGQ)
- Retrieve Documents (RD/XGR)

1.3.1 Document Submission (Outbound)

The Document Submission (DS) web service interface is used by the submitting entity (ICO/PIHP) to send a patient's ICBR care plan to another participating organization. In this case, the ICO/PIHP acts as the requesting client with the participating organization acting as the receiving gateway.

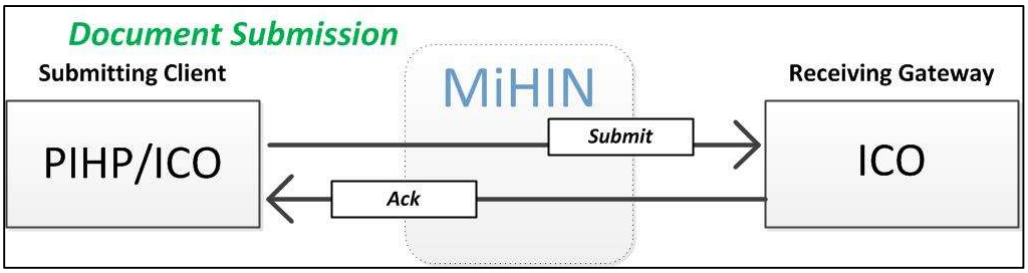

Figure 2: Outbound Document Submission

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1.3.2 Query for Documents (Inbound and Outbound)

The Query for Documents (QD) web service interface identifies the medical documents available in the responding entity's system (ICO/PIHP) for the patient specified by the Patient ID in the Patient Discovery transaction. The ICO/PIHP acts as the requesting client querying for documents from the participating organization's system, using the known beneficiary ID for the first part of the patient ID (second part would be the targeted systems assigning authority [AA] explained in the Message section). The participating organization's gateway can also initiate a QD request for patient documents from the ICO/PIHP system.

1.3.3 Retrieve Documents (Inbound and Outbound)

The Retrieve Documents (RD) web service interface obtains the patient's medical documents from the responding entity's system (participating organization or ICO/PIHP). This is accomplished using the document metadata in the QD response. e.g., the ICO/PIHP gateway acts as the requesting client retrieving documents from the participating organization's system, using the document ID and repository ID from the prior QD response. The participating organization's gateway can also initiate a RD request from the ICO/PIHP system.

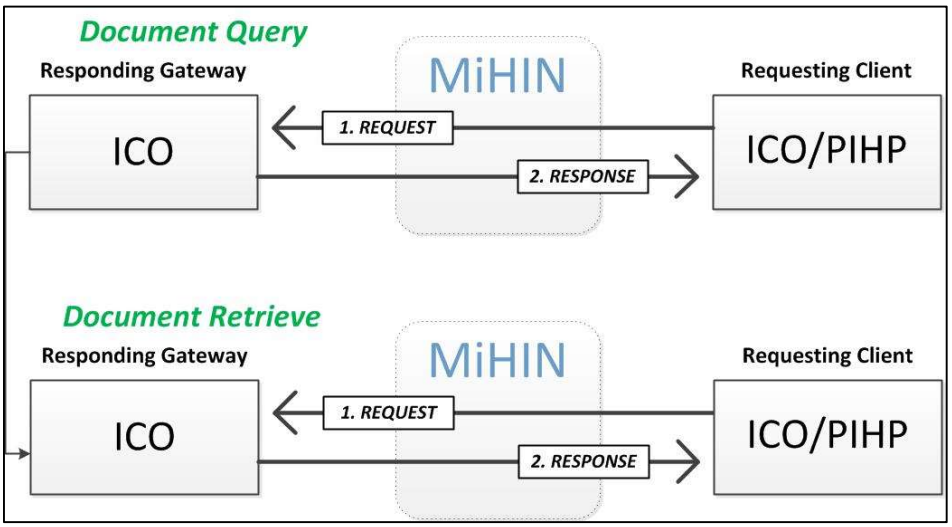

Figure 3: Query/Retrieve Workflow

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2 Standard Overview

2.1 Message

MiHIN requires certain elements within the transaction request for routing and policy decisions.

In the DS messages the XDSSubmissionSet.sourceID must be the home community ID (HCID) of the sending organization. The patientID in the submission set and in each entry must match the known beneficiary ID and the assigning authority of the sending organization. The AA is the identifier for the sender's patient index system. This value can be the same as the HCID if the organization does not have multiple patient indexes. The format for the patientID is:

"<beneficiary ID>^^^&<sender AA/HCID>&ISO

Please see Appendix B for descriptions of other key elements and Appendix C for message examples.

The message content and notices sent to and received from MiHIN's Common Gateway Service must conform to one or more of the following standards:

- IHE Cross-Community Access (XCA) specifications, supplemented with the message content required for a Nationwide Health Information Network (NwHIN) Security Assertion Markup Language (SAML)assertion
- IHE Cross-Enterprise Document Sharing (XDS.b) specifications, supplemented with the message content required for a NwHIN SAML assertion
- Exchange Specifications - the NwHIN specifications set forth on the Sequoia Project website at http://sequoiaproject.org.

2.2 Content

This guide outlines how to exchange messages which contain ICBR documents. For information regarding message payload (C-CDA), refer to the supplemental implementation guide ICBR_CCDA_SUPP_IG_v1_JUN2015, available upon request.

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3 Onboarding Process and Testing

3.1 Initial Onboarding

For organizations to share data with MiHIN under this use case, the organization undergoes legal onboarding and technical connectivity onboarding. These processes 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 by visiting www.mihin.org/requesthelp or via email at help@mihin.org.

3.2 Initial Legal Process

When an organization first undergoes the legal onboarding process with MiHIN, the organization negotiates and enters into a master Trusted Data Sharing Organization Agreement. This allows the participating organization to enter into one or more use cases by signing use case agreements. Once an organization has agreed to a master participating organization agreement, the organization can participate in an unlimited number of use cases with MiHIN.

3.3 Initial Technical Connectivity Process

MiHIN typically conducts "onboarding kickoff" meetings with new participating organizations to go through each onboarding step in detail and answer any questions.

MiHIN requires two VPN (Virtual Private Network) connection be established between the participating organization and MiHIN – one primary and one secondary for high availability.

The process for connecting to the staging Common Gateway Service is as follows:

1. The participating organization requests and submits the MiHIN site-to-site VPN request form. (The request form includes technical contacts, reason for VPN request, and IP and port values for the connecting server).
2. The new participating organization is added onto the MiHIN primary and secondary VPNs. (Confirmation performed using telnet from both sides).
3. The 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 Object Identifiers (OID))
   c) Organization Assigning Authority (unique OID)
   d) Organization Repository ID (unique OID)
   e) DS, QD, and RD service endpoints
   f) Organization assertion information
4. The participating organization receives the following from MiHIN:
   a) Self-signed Certificate from Common Gateway server (to be added to participating organization's server trust store)

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b) Common Gateway DS, QD, RD service endpoints
c) Staging simulators' HCID, assigning authority, and repository ID for onboard testing

5. The organization selects one or more connectivity methods for message transport (e.g. DS, XDR, XDS-B) based on their technical capabilities, and should communicate the selection(s) to MiHIN.

3.4 Technical Onboarding and Testing

Technical onboarding and testing is a three-step process:

1. Connectivity testing
2. Focused use case testing with the MiHIN simulators
3. End-to-end testing between the trading partners

All tests are done in the MiHIN staging environment. Upon completion of the onboarding process, the connectivity process (section 3.3) is repeated for the MiHIN production environment. Connectivity and basic partner testing will be administered after a newly onboarded organization is migrated to the production environment.

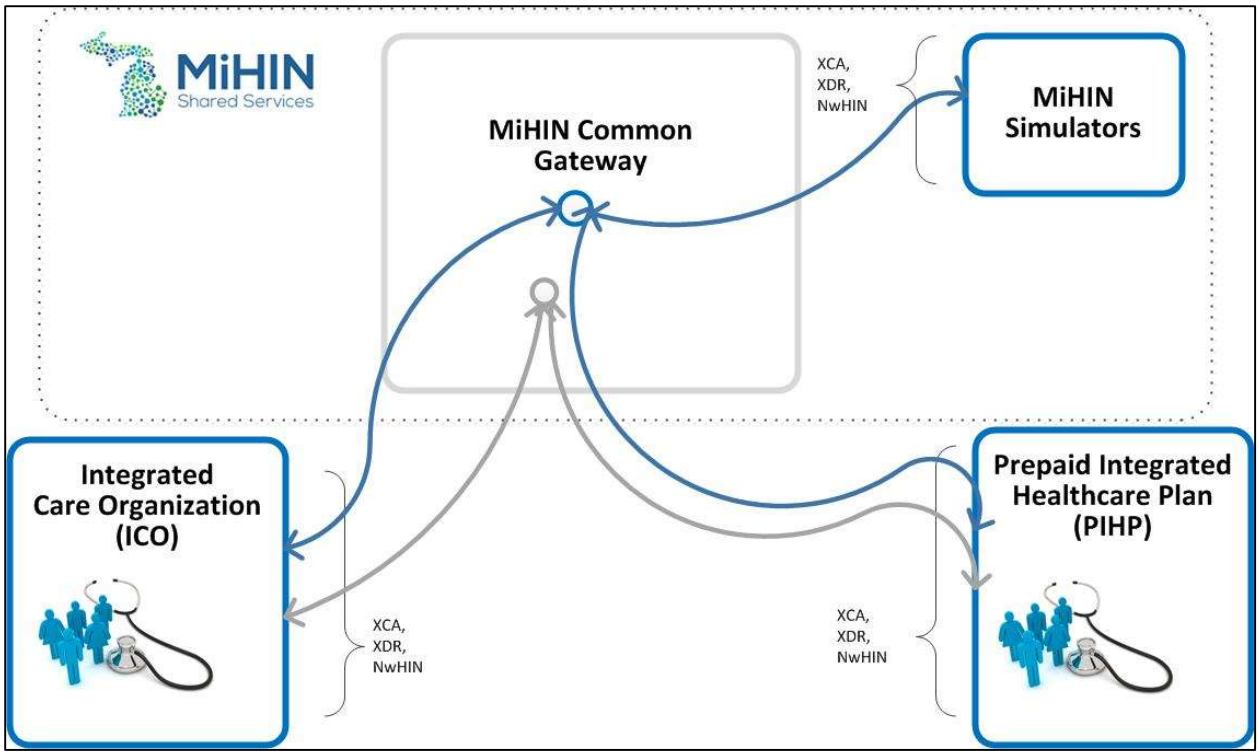

Figure 4: Technical Onboarding

3.6 Connectivity Testing

Connectivity testing confirms the existence and correct set-up of the VPN and firewall between MiHIN and the participating organization. MiHIN test resources will use ping and telnet utilities to establish connectivity to the participant's server using the provided IP and port(s).

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3.7 Simulator Testing

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 and /or out of the Common Broker, with the goal of hitting the Edge Simulator's DS/XDR, QD/XGQ, and RD/XGR endpoints. The participant's services are validated with the Edge Simulator acting as the initiator or as the recipient/responder (bidirectional testing of the ICO/PIHP). The results of the tests and various log files in the MiHIN servers are reviewed to confirm a successful transaction.

3.8 End-to-End Partner Testing (ICO to PIHP Zone)

The following tests gauge the full transport capabilities for the ICOs and PIHPs and their trading partners within their zone.

#	Scenario	Message Type	Request Parameters	Expected Response
1	**DS Happy-Path** ICO or PIHP initiates a DS request to the MiHIN Common Gateway Service	■ NwHIN Document Submission ■ IHE Cross-enterprise Document Reliable Interchange (XDR) Provided and Register Document ■ IHE Cross-Enterprise Document Sharing (XDS.b) provide and register document	■ Key document metadata ● sourcePatientId ● sourcePatientInfo ● typeCode (LOINC code for document) ● patientID (not populated) ● mime-type of document ■ CCDA payload	■ Document is sent to the responder registry ● PatientID is populated with target PatientID (beneficiary ID plus targets AA) ■ Requester receives a submission response with "Success" back
2	**DQ Happy-Path** ICO or PIHP initiates a QD request to the MiHIN gateway	■ NwHIN document query ■ IHE XGQ Cross Gateway Query (XCAQ)	■ Key request parameters ● sourcePatientInfo ● typeCode (LOINC code for document) ● patientID	■ Query for documents request is sent to the responder registry ● PatientID is populated with target PatientID ■ Requester receives a request response with document list
3	**DR Happy-Path** ICO or PIHP initiates a RD request to the MiHIN gateway	■ NwHIN document retrieve ■ IHE XGR Cross Gateway Retrieve (XCAR)	■ Key parameters ● RepositoryID ● DocumentID	■ RD request is sent to the responder registry ■ Requester receives a retrieve documents response with the document
4	**DS Connectivity Error Tests** Tests will determine if client services can handle connectivity outages related to DS messaging.	■ NwHIN document submission ■ IHE XDR provided and register document ■ IHE XDS.b provide and register document	Parameters will be the same as the happy path tests with simulated outages of the responder, the responder repository, and the MiHIN Common Gateway.	The requestor should be able to manage all produced error faults and responses.
5	**DQ Connectivity Error Tests** Tests will determine if	■ NwHIN document retrieve	Parameters will be the same as the happy path tests with simulated outages of the repository, the	The requestor should be able to manage all produced error faults and responses.

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#	Scenario	Message Type	Request Parameters	Expected Response
	client services can handle connectivity outages related to DQ messaging.	■ IHE XGR Cross Gateway Retrieve (XCAR)	producer/consumer, and the MiHIN Common Gateway.	
6	**DR Connectivity Error Tests** Tests will determine if client services can handle connectivity outages related to DR messaging.	■ NwHIN document retrieve ■ IHE XGR Cross Gateway Retrieve (XCAR)	Parameters will be the same as the happy path tests with simulated outages of the repository, the producer/consumer, and the MiHIN Common Gateway.	The requestor should be able to manage all produced error faults and responses.
7	**DS Message Error Tests** Tests determine if error responses can be produced and consumed for issues with DS message metadata.	■ NwHIN document submission ■ IHE XDR provide and register document ■ IHE XDS.b provide and register document	Requests will have to be altered with test patients that allow for errors (for example, a patient that does not exist in targeted system, or produces a document ID that already exists in the targeted system). Need to review if errors are applicable for each system and whether or not they can even be produced.	The following error codes can be expected to be produced in the DS work flow: ■ DocumentQueued ■ PartialAppendContentNotProcessed ■ PartialFolderContentNotProcessed ■ PartialReplaceContentNotProcessed ■ PartialTransformNotProcessed ■ PartialTransformReplaceNotProcessed ■ XDSDuplicateUniqueIdInRegistry ■ XDSExtraMetadataNotSaved ■ XDSMissingDocument ■ XDSMissingDocumentMetadata ■ XDSPatientIdDoesNotMatch ■ XDSRegistryBusy ■ XDSRepositoryBusy ■ XDSRegistryDeprecatedDocumentError ■ XDSRegistryDuplicateUniqueIdInMessage ■ XDSRepositoryDuplicateUniqueIdInMessage ■ XDSRegistryError ■ XDSRepositoryError ■ XDSRegistryMetadataError ■ XDSRepositoryMetadataError ■ XDSRegistryNotAvailable ■ XDSRegistryOutOfResources ■ XDSRepositoryOutOfResources ■ XDSUnknownPatientId

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#	Scenario	Message Type	Request Parameters	Expected Response
8	**DQ Message Error Tests** Tests determine if error responses can be produced and consumed for issues with DS message metadata.	■ NwHIN Document Query ■ IHE XGQ Cross Gateway Query (XCAQ)	Requests will have to be altered with test patients that allow for errors (if, for example, a certain patient or specific documents don't exist in the targeted system). Need to review if errors are applicable for each system and whether or not they can even be produced	The following error codes can be expected to be produced in the DQ work flow: ■ XDSMissingHomeCommunityId ■ XDSRegistryBusy ■ XDSRegistryError ■ XDSRegistryOutOfResources ■ XDSResultNotSinglePatient ■ XDSStoredQueryMissingParam ■ XDSStoredQueryParamNumber ■ XDSTooManyResults ■ XDSUnavailableCommunity(SQ) ■ XDSUnknownCommunity ■ XDSUnknownPatientId(XGQ) ■ XDSUnknownStoredQuery
9	**Document Retrieve Message Error Tests** Tests determine if error responses can be produced and consumed for issues with DS message metadata.	• NwHIN Document Retrieve • IHE XGR Cross Gateway Retrieve (XCAR)	Requests will have to be altered for incorrect metadata such as mismatched repository or document IDs. Need to review if errors are applicable for each system and whether or not they can even be produced	The following error codes can be expected to be produced in the DR work flow: ■ XDSMissingHomeCommunityId ■ XDSRegistryBusy ■ XDSRegistryError ■ XDSRegistryOutOfResources ■ XDSDocumentUniqueIdError ■ XDSUnavailableCommunity(SQ) ■ XDSUnknownCommunity ■ XDSUnknownRepositoryID

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4 Transactions

4.1 Specifications and Transaction Types

4.1.1 Specifications

The transports must follow NwHIN specifications or underlying IHE specifications for the given transaction type. Please see Appendix A for direct links to these specifications.

4.1.2 Transactions

The MiHIN Common Gateway supports the following transaction types for this use case. Please see Appendix A for links to Web Service Description Language (WSDLs) and schemas.

- Provide and Register Document Set-b (ITI-41)
- NwHIN Document Submission (DS)
- Registry Stored Query(ITI-18)
- Cross Gateway Query(ITI-38)
- NwHIN Query for Documents service (QD)
- Retrieve Document Set(ITI-43)
- Cross Gateway Retrieve(ITI-39)
- NwHIN Retrieve Documents service (RD)

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5 Troubleshooting

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

A list of common questions regarding Exchange Integrated Care Bridge Record can be found at:

http://mihin.org/about-mihin/resources/use-cases-in-pilot/

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

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

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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 the Health Insurance Portability and Accountability Act (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; and
f. **For any additional purposes as specified in any Use Case, provided that such purposes are consistent with Applicable Laws and Standards**.

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

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

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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, policies are subject to change and do so frequently. Message and document 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.

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Appendix A: Specifications and Web Services

A.1 Specifications

1. NwHIN (Nationwide Healthcare Information Network)
   a. NwHIN Document Submission v2.0 - http://sequoiaproject.org/wp-content/uploads/2014/11/nhin-document-submission-production-specification-v2-0-a.pdf
   b. NwHIN Query for Documents v2.0 - http://sequoiaproject.org/wp-content/uploads/2014/11/nhin-query-for-documents-production-specification-v3.0.pdf
   c. NwHIN Retrieve Documents v3.0 - http://sequoiaproject.org/wp-content/uploads/2014/11/nhin-retrieve-documents-production-specification-v3.0.pdf
   d. Authorization Framework v3.0- http://sequoiaproject.org/wp-content/uploads/2014/11/nhin-authorization-framework-production-specification-v3.0.pdf
   e. Web Services Registry v3.0- http://sequoiaproject.org/wp-content/uploads/2014/11/nhin-web-services-registry-production-specification-v3-1-508.pdf
   f. Messaging Platform v3.0 - http://sequoiaproject.org/wp-content/uploads/2014/11/nhin-messaging-platform-production-specification-v3.0.pdf
2. IHE XDR (Cross-enterprise Document Reliable Interchange)
   a. XDR TI 2009-8-10
      http://www.ihe.net/Technical_Framework/upload/IHE_ITI_TF_Supplement_Cross_Enterprise_Document_Reliable_Interchange_XDR_TI_2009-08-10.pdf
   b. IHE ITI Vol 2b
      - http://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Vol2b.pdf
3. IHE XGQ (Cross Gateway Query)
   a. XCA 2009-8-10
      http://www.ihe.net/Technical_Framework/upload/IHE_ITI_TF_Supplement_Cross_Community_Access_XCA_TI_2009-08-10.pdf
      IHE ITI Vol 2b
      - http://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Vol2b.pdf
   b. IHE ITI Vol 2b
      - http://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Vol2b.pdf
4. IHE XGR (Cross Gateway Retrieve)
   a. IHE XCA 20010-8-
      10 http://www.ihe.net/Technical_Framework/upload/IHE_ITI_Suppl_XCA_Rev2-1_TI_2010-08-10.pdf
   b. IHE ITI TF Vol 2b
      - http://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Vol2b.pdf

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A.2. Web Services Description Languages (WSDLs) and Schemas

The below links lead you to the root directories for accessing WSDLs and schema for the supported Common Gateway messaging types.

- XCA/XDR/XDS.b WSDL *ftp://ftp.ihe.net/TF_Implementation_Material/ITI/wsdl/*
- XCA/XDR/XDS.b Schemas ftp://ftp.ihe.net/TF_*Implementation*_Material/ITI/schema/
- NwHIN WSDLs (github) *https://github.com/CONNECT-Solution/CONNECT-Webservices*
- NwHIN Schema (github) *https://github.com/CONNECT-Solution/Common-Types*
- NwHIN WSDLS and Schema (maven) *http://repo1.maven.org/maven2/org/connectopensource/*

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Appendix B: Key Message Elements

Each supported message type includes various metadata elements needed for pushing or querying for documents. This section includes a description of these elements and their optionality for each message type (R = required, R2 = required if known, O = optional).

B.1 Document Submission (DS, XDR, ITI-41)

B.1.1 Request

#	Element/Field	Opt DS	Opt XDS	Opt XDR	Description
1	XDSDocumentEntry.classCode	R	R	R	The code specifying the particular kind of document (e.g., Prescription, Discharge Summary, Report).
2	XDSDocumentEntry.confidentialityCode	R	R	R	The code specifying the level of confidentiality of the Document.
3	XDSDocumentEntry.CreationTime	R	R	R	The time the author created the document.
4	XDSDocumentEntry.entryUUID	R	R	R	A globally unique identifier used to identify the entry. UUID is a globally unique identifier primarily intended for internal document management purposes. In contrast, the unique Id attribute is used for external references (e.g., links, etc.).
5	XDSDocumentEntry.formatCode	R	R	R	Code globally and uniquely specifying the format of the document.
6	XDSDocumentEntry.Hash	R	O	O	(R in DS,O in XDS/XDR) (DS)The hash contains the hash of the target document, computed following the SHA-1 algorithm. The hash value must be included. Note - In XDS.b - The Document Repository actor shall create and insert the XDSDocumentEntry.repository UniqueId, XDSDocumentEntry.size, and

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#	Element/Field	Opt DS	Opt XDS	Opt XDR	Description
					XDSDocumentEntry.hash attributes for each document received from the Provide and Register Document Set-b [ITI-41] transaction into the resulting Register Document Set-b [ITI-42] transaction metadata.
7	XDSDocumentEntry.Size	R	O	O	(R is DS, O in XDS/XDR)(DS)The actual size (in bytes) of the document must be included. Note - In XDS.b - The Document Repository actor shall create and insert the XDSDocumentEntry.repository UniqueId, XDSDocumentEntry.size, and XDSDocumentEntry.hash attributes for each document received from the Provide and Register Document Set-b [ITI-41] transaction into the resulting Register Document Set-b [ITI-42] transaction metadata.
8	XDSDocumentEntry.healthcareFacilityTypeCode	R	R	R	This code represents the type of organizational setting of the clinical encounter during which the documented act occurred (i.e. Hospital, primary care physician's office, etc.).
9	XDSDocumentEntry.homeCommunityId	O	O	O	A globally unique identifier for a community. Contained in the ebRS ExtrinsicObject home attribute for the ExtrinsicObject that corresponds to the DocumentEntry.
10	XDSDocumentEntry.languageCode	R	R	R	Specifies the human language of character data in the document. Using codes from IETF RFC 3066
11	XDSDocumentEntry.mimeType	R	R	R	MIME type of the document.
12	XDSDocumentEntry.patientId	R	R	R	(DS)The Patient ID represents the subject of care of the document (i.e. patient) from the

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#	Element/Field	Opt DS	Opt XDS	Opt XDR	Description
					Receiving NHIE's Assigning Authority domain. This value is obtained by Initiating NHIE through some verifiable means, primarily through use of the Patient Discovery Specification. The Patient ID shall contain two parts: ■ Patient Identity Assigning Authority in the form of an OID ■ An identifier in the above Assigning Authority domain
13	XDSDocumentEntry.practiceSettingCode	R	R	R	The code specifying the clinical specialty where the act that resulted in the document was performed. (e.g., Family Practice, Laboratory, Radiology)
14	XDSDocumentEntry.sourcePatientId	R	R	R	(From DS spec) The Source Patient ID represents the community identifier of the subject of care (i.e. patient) of the document from the Initiating NHIE's Assigning Authority domain. The Source Patient ID shall contain two parts: ■ Patient Identity Assigning Authority in the form of an OID ■ An identifier in the above Assigning Authority domain
15	XDSDocumentEntry.sourcePatientInfo	O	O	O	(From DS spec) This is an optional element. If included, it should specify a minimum of demographics for the patient, including first name, last name, date of birth and gender.
16	XDSDocumentEntry.typeCode	R	R	R	The code specifying the precise kind of document (e.g. Pulmonary History and Physical, Discharge Summary, Ultrasound Report).
17	XDSDocumentEntry.uniqueId	R	R	R	The globally unique identifier assigned by the document

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#	Element/Field	Opt DS	Opt XDS	Opt XDR	Description
					creator and the creating entity to this document. A document entry representing a single document is identified by the unique ID attribute; the linkage between document entry and the document it represents is made with the unique ID attribute. This unique identifier may be used in other documents to reference this document NOTE - The combination of XDSDocumentEntry.uniqueId and XDSDocumentEntry.repository UniqueId attributes value shall later be accepted in an RD Set transaction [ITI-43] for that document and the document shall be returned.
18	XDSSubmissionSet.contentTypeCode	R	R	R	The code specifying the type of clinical activity that resulted in placing the documents in this SubmissionSet.
19	XDSSubmissionSet.entryUUID	R	R	R	A globally unique identifier used to identify the SubmissionSet. entryUUID is a globally unique identifier primarily intended for internal document management purposes. In contrast, the uniqueId attribute is used for external references (e.g. links, etc.).
20	XDSSubmissionSet.homeCommunityId	O	O	O	A globally unique identifier for a community. (Home attribute to the Registry package)
21	XDSSubmissionSet.patientId	R	R	R	The patientId represents the subject of care whose longitudinal record is being reflected in this SubmissionSet (DS)The Patient ID represents the subject of care of the submission set from the Receiving NHIE's Assigning Authority domain.

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#	Element/Field	Opt DS	Opt XDS	Opt XDR	Description
22	XDSSubmissionSet.sourceId	R	R	R	(From DS spec) - The Source ID represents the homeCommunityId of the Initiating NHIE. The homeCommunityId is a globally unique identifier for a community used to assist in subsequent transactions for locating the data held by that community. homeCommunityId is structured as an OID limited to 64 characters and specified in URI syntax, for example the homeCommunityId of 2.16.840.1.113883.3.166 would be formatted as urn:oid: 2.16.840.1.113883.3.166. (From IHE spec) - OID identifying the instance of the creating entity that contributed to the SubmissionSet. The globally unique, immutable identifier of the entity that contributed to the SubmissionSet. When a "broker" is involved in sending SubmissionSets from a collection of client systems, it shall use a different sourceId for submissions from each separate system to allow for tracking.
23	XDSSubmissionSet.submissionTime	R	R	R	Point in time at the creating entity when the SubmissionSet was created.
24	XDSSubmissionSet.uniqueId	R	R	R	A globally unique identifier for the SubmissionSet assigned by the creating entity
25	XDSSubmissionSet.intendedRecipient	R2	O	R2	

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B.1.2 Response

#	Element/Field	Opt DS/XDS/XDR	Description
1	RegistryResponse Status	R	Status values: urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Failure urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Success If success - RegistryErrorList element may be present. If it is present, it will contain one or more RegistryError elements with warning severity. None will have error severity If Failure -RegistryErrorList element will be present, contains one or more RegistryError elements. At least one has error severity others may have warning severity.
2	errorCode	R	RegistryError Element attribute. Possible error codes in IHE Provide and Register Document Set - ■ DocumentQueued ■ PartialAppendContentNotProcessed ■ PartialFolderContentNotProcessed ■ PartialReplaceContentNotProcessed ■ PartialTransformNotProcessed ■ PartialTransformReplaceNotProcessed ■ XDSDuplicateUniqueIdInRegistry ■ XDSExtraMetadataNotSaved ■ XDSMissingDocument ■ XDSMissingDocumentMetadata ■ XDSPatientIdDoesNotMatch ■ XDSRegistryBusy ■ XDSRepositoryBusy ■ XDSRegistryDeprecatedDocumentError ■ XDSRegistryDuplicateUniqueIdInMessage ■ XDSRepositoryDuplicateUniqueIdInMessage ■ XDSRegistryError ■ XDSRepositoryError ■ XDSRegistryMetadataError ■ XDSRepositoryMetadataError ■ XDSRegistryNotAvailable ■ XDSRegistryOutOfResources ■ XDSRepositoryOutOfResources ■ XDSUnknownPatientId
3	codeContext	R	RegistryError Element attribute. Supplies additional detail for the errorCode.
4	Location	O	RegistryError Element attribute. Supplies the location of the error: module name and line number or stack trace if appropriate.
5	Severity	R	RegistryError Element attribute. Indicates the severity of the error. Shall be one of:Severity values:

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#	Element/Field	Opt DS/XDS/XDR	Description
			urn:oasis:names:tc:ebxml-regrep:ErrorSeverityType:Error urn:oasis:names:tc:ebxml-regrep:ErrorSeverityType:Warning

B.2 Document Query (QD, XGQ ITI-38, ITI-18)

Mult - Multiple values can be included in query.

The following are key elements of the FindDocuments query type.

#	Element/Field	Opt	Mult	Description
1	Query ID	R		This parameter holds the UUID assigned to the query to be invoked e.g. FindDocuments, Refer to 3.18.4.1.2.4 for possible query values. (From QD spec) For document searches on the NHIN, it is recommended to use the following elements as the primary search parameters: ■ Patient ID ■ Class code ■ Practice Setting Code ■ Healthcare Facility Type ■ Document Creation Time (From XGQ)The Initiating Gateway shall specify the homeCommunityId parameter within all queries which do not include a patient identifier parameter. These would be queries which specify an entryUUID or uniqueID. The homeCommunityId shall contain the value that identifies the community associated with the Responding Gateway. The homeCommunityId value is specified as the home attribute on the AdhocQuery element of the query request, as in: <AdhocQuery id="…" home="urn:oid:1.2.3" … >
Find Documents				
2	$XDSDocumentEntry.PatientId	R		XDSDocumentEntry. patientId The Patient ID (PID) is the technical identifier used to represent the subject (patient) for whom documents are sought. This identifier shall originate from ann Assigning Authority Domain supporting the NHIO

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#	Element/Field	Opt	Mult	Description
3	$XDSDocumentEntryStatus	R	M	Represents the status of the DocumentEntry. A DocumentEntry shall have one of two availability statuses: Approved: The document is available for patient care. Deprecated: The document is obsolete. This attribute is typically omitted in a submission of new documents. If present in a submission, the sent value is ignored. It is always set to Approved as a result of the successful submission of new documents. It may be changed to Deprecated under the primary responsibility of the creating entity.
4	$XDSDocumentEntry.ClassCode	O	M	XDSDocumentEntry. classCode
5	$XDSDocumentEntryTypeCode	O	M	XDSDocumentEntry.typeCode
6	$XDSDocumentEntryPracticeSettingCode	O	M	XDSDocumentEntry.practiceSettingCode
7	$XDSDocumentEntryCreationTimeFrom $XDSDocumentEntryCreationTimeTo	O		Lower and upper values of XDSDocumentEntry.CreationTime $XDSDocumentEntryCreationTimeFrom (and To) are optional parameters that may be included in the Find Documents query variant of Nationwide Health Information Network Query for Documents.
8	$XDSDocumentEntryServiceStartTimeFrom $XDSDocumentEntryServiceStartTimeTo	O		Lower and upper values of XDSDocumentEntry.serviceStartTime
9	$XDSDocumentEntryServiceStopTimeFrom $XDSDocumentEntryServiceStopTimeTo	O		Lower and upper values of XDSDocumentEntry.serviceStopTime
10	$XDSDocumentEntryHealthcareFacilityTypeCode	O	M	XDSDocumentEntry.healthcareFacilityTypeCode
11	$XDSDocumentEntryEventCodeList	O	M	XDSDocumentEntry.eventCodeList
12	$XDSDocumentEntryType	O		The new XDSDocumentEntryType is described in Section 3.18.4.1.2.3.6.2 of the IHE On-Demand Documents Supplement. The default value is to return only Stable Document Entries so

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#	Element/Field	Opt	Mult	Description
				if an NHIO desires on-demand document entries it is required to add this request as a parameter to the stored query The valid DocumentEntryType parameter values used in the Registry Stored Query are: ■ urn:uuid:7edca82f-054d-47f2-a032-9b2a5b5186c1 – requests Stable Document Entries be included in the response. This is the default value. ■ urn:uuid:34268e47-fdf5-41a6-ba33-82133c465248 – requests On-Demand Document Entries be included in the response.
13	$XDSDocumentEntryConfidentialityCode	O	M	XDSDocumentEntry.confidentialityCode
14	$XDSDocumentEntryAuthorPerson	O	M	XDSDocumentEntry. Author
15	$XDSDocumentEntryFormatCode	O	M	XDSDocumentEntry. formatCode

B.2.1 Response

(Key elements only)

This section lists those attributes that contain content in a query transaction response.

Folder attributes are not included

#	Element/Field	Opt QD	Opt XDS	Opt XCA	Description
1	AdhocQueryResponse Status	R	R	R	Status values: urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Success urn:ihe:iti:2007:ResponseStatusType:PartialSuccess urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Failure If success - RegistryErrorList element may be present. If present, it will contain one or more RegistryError elements with warning severity. None will have/present error severity If Failure -RegistryErrorList element will be present, contains one or more RegistryError elements. At least one has error severity and others may have warning severity.

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#	Element/Field	Opt QD	Opt XDS	Opt XCA	Description
2	errorCode	R	R	R	RegistryError Element attribute. Possible error codes in Registry Stored Query ■ XDSMissingHomeCommunityId ■ XDSRegistryBusy ■ XDSRegistryError ■ XDSRegistryOutOfResources ■ XDSResultNotSinglePatient ■ XDSStoredQueryMissingParam ■ XDSStoredQueryParamNumber ■ XDSTooManyResults ■ XDSUnavailableCommunity(SQ) ■ XDSUnknownCommunity ■ XDSUnknownPatientId(XGQ) ■ XDSUnknownStoredQuery
3	codeContext	R	R	R	RegistryError Element attribute. Supplies additional detail for the errorCode
4	location	O	O	O	RegistryError Element attribute. ■ Ensure that every RegistryError element returned in the response shall have the location attribute set to the homeCommunityId of the Responding Gateway.(Vol 2b XGQ)
5	Severity	R	R	R	RegistryError Element attribute. Indicates the severity of the error. Shall be one of:Severity values: urn:oasis:names:tc:ebxml-regrep:ErrorSeverityType:Error urn:oasis:names:tc:ebxml-regrep:ErrorSeverityType:Warning
Metadata					
7	DocumentEntry.availabilityStatus	R	R	R	Represents the status of the DocumentEntry. A DocumentEntry shall have one of two availability statuses: Approved: The document is available for patient care. Deprecated: The document is obsolete. This attribute is typically omitted in a submission of new documents. If present in a submission, this value is ignored. It is always set to Approved as a result of the successful submission of new documents. It may be changed to Deprecated under the primary responsibility of the creating entity.

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#	Element/Field	Opt QD	Opt XDS	Opt XCA	Description
8	DocumentEntry.classCode	R	R	R	The code specifying the particular kind of document (e.g. Prescription, Discharge Summary,Report)
9	DocumentEntry.confidentialityCode	R	R	R	The code specifying the level of confidentiality of the document
10	DocumentEntry.creationTime	R	R	R	Represents the time the author created the document
11	DocumentEntry.entryUUID	R	R	R	entryUUID is a globally unique identifier primarily intended for internal document management purposes. In contrast, the uniqueId attribute is used for external references (e.g., links, etc.).
12	DocumentEntry.formatCode	R	R	R	Globally unique code specifying the format of the document
13	DocumentEntry.hash	R	R	R	The hash of the contents of the document
14	DocumentEntry .healthcareFacilityTypeCode	R	R	R	This code represents the type of organizational setting of the clinical encounter during which the documented act occurred.
15	DocumentEntry .homeCommunityId	R	O	R	(For XGQ and XGR) The response should contain the value identifying the Responding Gateway's community for the HCID attribute in every appropriate element. The elements that shall include the ebRIM home attribute are: ■ If returntype="LeafClass" the ExtrinsicObject and RegistryPackage elements shall contain the home attribute. ■ If returnType="ObjectRef" the ObjectRef element shall contain the home attribute. ■ Ensure that every RegistryError element returned in the response shall have the location attribute set to the homeCommunityId of the Responding Gateway.
16	DocumentEntry.languageCode	R	R	R	Specifies the human language of character data in the document

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#	Element/Field	Opt QD	Opt XDS	Opt XCA	Description
17	DocumentEntry.mimeType	R	R	R	MIME type of the document in the repository
18	DocumentEntry.patientId	R	R	R	The patientId represents the subject of care of the document. For XDS the patient identifier domain is the XDS Affinity Domain Patient Identifier Domain (XAD-PID).
19	DocumentEntry.practiceSettingCode	R	R	R	The code specifying the clinical specialty where the act that resulted in the document was performed (e.g. Family Practice, Laboratory, Radiology)
20	DocumentEntry.repositoryUniqueId	R	R	R	The globally unique, immutable identifier of the repository where the document is stored
21	DocumentEntry.Size	R	R	R	Size in bytes of the byte stream that comprises the document
22	DocumentEntry.sourcePatientId	R	R	R	The sourcePatientId represents the subject of care's medical record Identifier (e.g. Patient ID) in the local patient identifier domain of the creating entity at the time the document entry was sent.
23	DocumentEntry.typeCode	R	R	R	The code specifying the precise kind of document (e.g. Pulmonary History and Physical,Discharge Summary, Ultrasound Report)
24	DocumentEntry.uniqueId	R	R	R	Globally unique identifier assigned to the document by the creating entity. A DocumentEntry representing a single document is identified by the uniqueId attribute; the linkage between DocumentEntry and the document it represents is made with the uniqueId attribute (probably means the value shall be the Clinical Document/ID in the HL7 CDA R2 header).
25	SubmissionSet.availabilityStatus	R	R	R	Represents the status of the SubmissionSet. Since the deprecation of SubmissionSets is not allowed, this value shall always be Approved.

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#	Element/Field	Opt QD	Opt XDS	Opt XCA	Description
26	SubmissionSet.contentTypeCode	R	R	R	The code specifying the type of clinical activity that resulted in placing these DocumentEntries,Folders, and/or Associations in this SubmissionSet.
27	SubmissionSet.entryUUID	R	R	R	entryUUID is a globally unique identifier primarily intended for internal document management purposes. In contrast, the uniqueId attribute is used for external references (e.g. links, etc.).
28	SubmissionSet.patientId	R	R	R	The patientId represents the primary subject of care of the SubmissionSet
29	SubmissionSet.sourceId	R	R	R	The globally unique, immutable identifier of the entity that contributed the SubmissionSet. When a "broker" is involved in sending SubmissionSets from a collection of client systems, it shall use a different sourceId for submissions from each separate system to allow for tracking.
30	SubmissionSet.submissionTime	R	R	R	Represents the point in time when the creating entity sent the Submission Set. This shall be provided by the sent system.
31	SubmissionSet.uniqueId	R	R	R	The globally unique identifier for the SubmissionSet assigned by the entity that contributed the SubmissionSet.
32	SubmissionSet.homeCommunityId	R	O	R	A globally unique identifier for a community.

B.3 Document Retrieve (RD, XGR ITI-39, ITI-41)

B.3.1 Request

#	Element/Field	Opt	Description
1	repositoryUniqueId	R	Identifies the repository from which the document is to be retrieved. This value corresponds to XDSDocumentEntry.repositoryUniqueId. (The repositoryUniqueId associated with each requested document can be different, therefore allowing a single request to identify multiple repositories.)
2	documentUniqueId	R	Identifies the document within the repository. This value corresponds to the XDSDocumentEntry.uniqueId.

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#	Element/Field	Opt	Description
3	homeCommunityId	R	Identifies the community holding the document. The homeCommunityId element must be specified in the Cross Gateway Retrieve request.

B.3.2 Response

#	Element/Field	Opt RD	Opt XDS	Opt XCA	Description
1	RegistryResponse Status	R	R	R	Status values: urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Success - All documents were successfully retrieved urn:ihe:iti:2007:ResponseStatusType:PartialSuccess - Some documents were successfully retrieved urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Failure - No documents were successfully retrieved If success - RegistryErrorList element may be present. If it is present, it will contain one or more RegistryError elements with warning severity. None will have error severity If Failure -RegistryErrorList element will be present, contains one or more RegistryError elements. At least one has error severity others may have warning severity. ■ XDSDocumentUniqueIdError ■ XDSMissingHomeCommunityId ■ XDSRepositoryBusy ■ XDSRepositoryError ■ XDSRepositoryOutOfResources ■ XDSUnavailableCommunity(SQ) ■ XDSUnknownCommunity ■ XDSUnknownRepositoryId
2	homeCommunityId.	R	O	R	Optional on RD set, but required for Cross Gateway Retrieve.
3	repositoryUniqueId	R	R	R	Identifies the repository from which the document is to be retrieved. This value shall be the same as the value of the repositoryUniqueId in the original Retrieve Document Set Request Message. This value corresponds to XDSDocumentEntry.repositoryUniqueId.
4	documentUniqueId	R	R	R	Identifies the document within the repository. This value shall be the same as the documentUniqueId in the original Retrieve Document Set Request Message. This value corresponds to the XDSDocumentEntry.uniqueId

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#	Element/Field	Opt RD	Opt XDS	Opt XCA	Description
5	NewDocumentUniqueId	O	O	O	An optional NewDocumentUniqueId used when the request was for an On-Demand Document
6	NewRepositoryUniqueId	O	O	O	An optional NewRepositoryUniqueId used when the request was for an On-Demand Document
7	Document	R	R	R	The retrieved document as a XOP Info set
8	MIMEType	R			The MIME type of the retrieved document
9	Errors	C			Errors or warnings in case the document(s) could not be retrieved successfully Every RegistryError element returned in the response shall have the location attribute set to the homeCommunityId of the Responding Gateway For each document requested in a /RetrieveDocumentSetRequest/DocumentRequest element: If a warning is reported when retrieving the document, then an /RetrieveDocumentSetResponse/rs:RegistryResponse/rs:RegistryErrorList/rs:RegistryError element shall be returned with: ■ @severity is urn:oasis:names:tc:ebxml-regrep:ErrorSeverityType:Warning ■ @errorCode is specified ■ @codeContext contains the warning message ■ @location contains the DocumentUniqueId of the document requested If an error is reported when retrieving a document, then an /RetrieveDocumentSetResponse/rs:RegistryResponse/rs:RegistryErrorList/rs:RegistryError element shall be returned with: ■ @severity is urn:oasis:names:tc:ebxml-regrep:ErrorSeverityType:Error ■ @errorCode is specified ■ @codeContext contains the error message ■ @location contains the DocumentUniqueId of the document requested

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Appendix C: Message Examples

C.1 NwHIN Document Submission Request


```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
    <soap:Header>
        <wsse:Security xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-
1.0.xsd"
xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd"
soap:mustUnderstand="true">
            <saml2:Assertion xmlns:saml2="urn:oasis:names:tc:SAML:2.0:assertion"
xmlns:xs="http://www.w3.org/2001/XMLSchema" ID="_9f9d488d90a94864aa210c2f4a5ba647" IssueInstant="2014-
09-17T19:39:33.887Z" Version="2.0">
                <saml2:Issuer
Format="urn:oasis:names:tc:SAML:1.1:nameid-
format:X509SubjectName">CN=connectgw.mihin.org,OU=mihin,O=mihin,L=East Lansing,ST=MI,C=US</saml2:Issuer>
                <ds:Signature
xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
                    <ds:SignedInfo>
                        <ds:CanonicalizationMethod Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"/>
                        <ds:SignatureMethod
Algorithm="http://www.w3.org/2000/09/xmldsig#rsa-sha1"/>
                        <ds:Reference URI="#_9f9d488d90a94864aa210c2f4a5ba647">
                            <ds:Transforms>
                                <ds:Transform
Algorithm="http://www.w3.org/2000/09/xmldsig#enveloped-signature"/>
                                <ds:Transform Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#">
                                    <ec:InclusiveNamespaces
xmlns:ec="http://www.w3.org/2001/10/xml-exc-c14n#" PrefixList="xs"/>
                                </ds:Transform>
                            </ds:Transforms>
                            <ds:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldsig#sha1"/>
                            <ds:DigestValue>0nt7bp4fig39SNwMPrdXh1ijfg0=</ds:DigestValue>
                        </ds:Reference>
                    </ds:SignedInfo>

    <ds:SignatureValue>gtXdimI4B113v5cfXtvgldxnH4HapScw0xDClZjZpL2vUTGS8Ws79kW/UdA++pcWJhOsO/NeS8G7
MfkFeZ5B4VBdDndtd0V5uVxjeJjGUTo7pZ1kAIWAIQFAf4RvADlQOHn/gHazrdN4qcKVomZLonuG3rNzpXr/IP8hzNcwlcY=
                    </ds:SignatureValue>
                    <ds:KeyInfo>
                        <ds:KeyValue>
                            <ds:RSAKeyValue>

    <ds:Modulus>jh8AZgq9a6h/lsJyZoxsS9rYJWEBa9nRA+m3tNP2EevwHgRTYnhMhozu1hR60H4c+j8FC8oL+A/m
0qupVCwQQVcBlCNt0U9ApqA+Xr2vDTPvtf6t3vhkS0xkB4Mw1PAUe6z9psSS0vmAXfQW5HuGlFsL
b8Sw3+TZ3w1L4dD4BVk=</ds:Modulus>
                                <ds:Exponent>AQAB</ds:Exponent>
                            </ds:RSAKeyValue>
                        </ds:KeyValue>
                    </ds:KeyInfo>
                </ds:Signature>
                <saml2:Subject>
                    <saml2:NameID
Format="urn:oasis:names:tc:SAML:1.1:nameid-format:X509SubjectName">UID=kskagerb</saml2:NameID>
                    <saml2:SubjectConfirmation Method="urn:oasis:names:tc:SAML:2.0:cm:holder-of-key">
                        <saml2:SubjectConfirmationData>
                            <ds:KeyInfo xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
                                <ds:KeyValue>
```


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<ds:RSAKeyValue>

<ds:Modulus>jh8AZgq9a6h/lsJyZoxsS9rYJWEBa9nRA+m3tNP2EevwHgRTYnhMhozu1hR60H4c+j8FC8oL+A/m
0qupVCwQQVcBlCNt0U9ApqA+Xr2vDTPvtf6t3vhkS0xkB4Mw1PAUe6z9psSS0vmAXfQW5HuGlFsL
b8Sw3+TZ3w1L4dD4BVk=</ds:Modulus>
<ds:Exponent>AQAB</ds:Exponent>
</ds:RSAKeyValue>
</ds:KeyValue>
</ds:KeyInfo>
</saml2:SubjectConfirmationData>
</saml2:SubjectConfirmation>
</saml2:Subject>
<saml2:AuthnStatement AuthnInstant="2009-04-16T13:15:39.000Z" SessionIndex="987">
<saml2:SubjectLocality Address="158.147.185.168" DNSName="158.147.185.168"/>
<saml2:AuthnContext>

<saml2:AuthnContextClassRef>urn:oasis:names:tc:SAML:2.0:ac:classes:X509</saml2:AuthnContextClassRef>
</saml2:AuthnContext>
</saml2:AuthnStatement>
<saml2:AttributeStatement>
<saml2:Attribute
Name="urn:oasis:names:tc:xspa:1.0:subject:subject-id" NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-
format:uri">
<saml2:AttributeValue xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="xs:string">Karl S Skagerberg</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>
<saml2:AttributeStatement>
<saml2:Attribute
Name="urn:oasis:names:tc:xspa:1.0:subject:organization" NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-
format:uri">
<saml2:AttributeValue xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:type="xs:string">26.489.24</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>
<saml2:AttributeStatement>
<saml2:Attribute
Name="urn:oasis:names:tc:xspa:1.0:subject:organization-id" NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-
format:uri">
<saml2:AttributeValue xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:type="xs:string">26.489.24</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>
<saml2:AttributeStatement>
<saml2:Attribute
Name="urn:nhin:names:saml:homeCommunityId" NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-format:uri">
<saml2:AttributeValue xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="xs:string">26.489.24</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>
<saml2:AttributeStatement>
<saml2:Attribute
Name="urn:oasis:names:tc:xacml:2.0:resource:resource-id" NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-
format:uri">
<saml2:AttributeValue xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:type="xs:string">500000000^^^&1.1&ISO</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>
<saml2:AttributeStatement>
<saml2:Attribute
Name="urn:oasis:names:tc:xacml:2.0:subject:role" NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-format:uri">

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<saml2:AttributeValue>
<hl7:Role xmlns:hl7="urn:hl7-org:v3" code="307969004"
codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED_CT" displayName="Public Health" type="hl7:CE"/>
</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>
<saml2:AttributeStatement>
<saml2:Attribute Name="urn:oasis:names:tc:xspa:1.0:subject:purposeofuse"
NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-format:uri">
<saml2:AttributeValue>
<hl7:PurposeOfUse xmlns:hl7="urn:hl7-org:v3" code="PUBLICHEALTH"
codeSystem="2.16.840.1.113883.3.18.7.1" codeSystemName="nhin-purpose" displayName="Use or disclosure of
Psychotherapy Notes"/>
</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>
<saml2:AuthzDecisionStatement Decision="Permit"
Resource="https://158.147.185.168:8181/SamlReceiveService/SamlProcessWS">
<saml2:Action Namespace="urn:oasis:names:tc:SAML:1.0:action:rwedc">Execute</saml2:Action>
<saml2:Evidence>
<saml2:Assertion xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
ID="40df7c0a-
ff3e-4b26-baeb-f2910f6d05a9" IssueInstant="2009-04-16T13:10:39.093Z" Version="2.0"
xsi:type="saml2:AssertionType">
<saml2:Issuer Format="urn:oasis:names:tc:SAML:1.1:nameid-
format:X509SubjectName">CN=SAML User,OU=Harris,O=HITS,L=Melbourne,ST=FL,C=US</saml2:Issuer>
<saml2:Subject>
<saml2:NameID Format="urn:oasis:names:tc:SAML:1.1:nameid-
format:X509SubjectName">UID=kskagerb</saml2:NameID>
<saml2:SubjectConfirmation Method="urn:oasis:names:tc:SAML:2.0:cm:holder-of-
key">
<saml2:SubjectConfirmationData>
<ds:KeyInfo
xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
<ds:KeyValue>
<ds:RSAKeyValue>

<ds:Modulus>jh8AZgq9a6h/lsJyZoxsS9rYJWEBa9nRA+m3tNP2EevwHgRTYnhMhozu1hR60H4c+j8FC8oL+A/m
0qupVCwQQVcBlCNt0U9ApqA+Xr2vDTPvtf6t3vhkS0xkB4Mw1PAUe6z9psSS0vmAXfQW5HuGlFsL
b8Sw3+TZ3w1L4dD4BVk=</ds:Modulus>
<ds:Exponent>AQAB</ds:Exponent>
</ds:RSAKeyValue>
</ds:KeyValue>
</ds:KeyInfo>
</saml2:SubjectConfirmationData>
</saml2:SubjectConfirmation>
</saml2:Subject>
<saml2:Conditions NotBefore="2009-04-16T13:10:39.093Z" NotOnOrAfter="2014-09-
17T19:44:33.977Z"/>
<saml2:AttributeStatement>
<saml2:Attribute Name="AccessConsentPolicy"
NameFormat="http://www.hhs.gov/healthit/nhin">
<saml2:AttributeValue xsi:type="xs:string">Claim-Ref-
1234</saml2:AttributeValue>
</saml2:Attribute>
<saml2:Attribute
Name="InstanceAccessConsentPolicy" NameFormat="http://www.hhs.gov/healthit/nhin">
<saml2:AttributeValue xsi:type="xs:string">Claim-Instance-
1</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>

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```
                    </saml2:Assertion>
                </saml2:Evidence>
            </saml2:AuthzDecisionStatement>
        </saml2:Assertion>
        <ds:Signature xmlns:ds="http://www.w3.org/2000/09/xmldsig#" Id="SIG-2">
            <ds:SignedInfo>
                <ds:CanonicalizationMethod Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#">
                    <ec:InclusiveNamespaces xmlns:ec="http://www.w3.org/2001/10/xml-exc-c14n#"
PrefixList="soap"/>
                </ds:CanonicalizationMethod>
                <ds:SignatureMethod Algorithm="http://www.w3.org/2000/09/xmldsig#rsa-sha1"/>
                <ds:Reference URI="#TS-1">
                    <ds:Transforms>
                        <ds:Transform
Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#">
                            <ec:InclusiveNamespaces xmlns:ec="http://www.w3.org/2001/10/xml-exc-c14n#"
PrefixList="wsse soap"/>
                        </ds:Transform>
                    </ds:Transforms>
                    <ds:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldsig#sha1"/>
                    <ds:DigestValue>8hlTRzqcxG92spi0nrAzczV9MLs=</ds:DigestValue>
                </ds:Reference>
            </ds:SignedInfo>

    <ds:SignatureValue>XMqeny5LA33WQusSo6Xc/MSCf+/MfE9gKq40p55fxG+x1o9bpVG8g5tQdR+9caJYT6ZZ+M8AqZ
5Hdbv3qot6zrblJecmOLUkUuYwsVpS9oNNYpQguhlZCTgPQksc3Itq6ZKB5/trKTXAOpU4ztoyoSCmA9quPZDsIPaNUH/Ols
4=
            </ds:SignatureValue>
            <ds:KeyInfo Id="KeyId-A4E3FB88883741BCA314109827741281">
                <wsse:SecurityTokenReference xmlns:wsse11="http://docs.oasis-open.org/wss/oasis-wss-
wssecurity-secext-1.1.xsd"
wsse11:TokenType="http://docs.oasis-open.org/wss/oasis-wss-saml-token-profile-1.1#SAMLV2.0" wsu:Id="STRId-
A4E3FB88883741BCA314109827741282">
                    <wsse:KeyIdentifier ValueType="http://docs.oasis-
open.org/wss/oasis-wss-saml-token-profile-
1.1#SAMLID">_9f9d488d90a94864aa210c2f4a5ba647</wsse:KeyIdentifier>
                </wsse:SecurityTokenReference>
            </ds:KeyInfo>
        </ds:Signature>
        <wsu:Timestamp
wsu:Id="TS-1">
            <wsu:Created>2014-09-17T19:39:23.964Z</wsu:Created>
            <wsu:Expires>2014-09-17T20:39:23.964Z</wsu:Expires>
        </wsu:Timestamp>
    </wsse:Security>
    <Action
xmlns="http://www.w3.org/2005/08/addressing">urn:ihe:iti:2007:ProvideAndRegisterDocumentSet-b</Action>
    <MessageID xmlns="http://www.w3.org/2005/08/addressing">urn:uuid:db8d2428-a032-404b-9f69-
288bd08bdd00</MessageID>
    <To
xmlns="http://www.w3.org/2005/08/addressing">https://172.16.14.94:8181/Gateway/DocumentSubmission/2_0/Do
cumentRepositoryXDR_Service</To>
    <ReplyTo
xmlns="http://www.w3.org/2005/08/addressing">
        <Address>http://www.w3.org/2005/08/addressing/anonymous</Address>
    </ReplyTo>
</soap:Header>
<soap:Body>
    <ProvideAndRegisterDocumentSetRequest
xmlns="urn:ihe:iti:xds-b:2007" xmlns:ns2="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
xmlns:ns3="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0" xmlns:ns4="urn:oasis:names:tc:ebxml-
```


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```
regrep:xsd:query:3.0" xmlns:ns5="urn:oasis:names:tc:ebxml-regrep:xsd:lcm:3.0">
                <ns5:SubmitObjectsRequest comment="comments" id="123">
                    <ns2:RegistryObjectList>
                        <ns2:ExtrinsicObject id="MiWay7662" mimeType="xml" objectType="urn:uuid:7edca82f-054d-
47f2-a032-9b2a5b5186c1">
                            <ns2:Slot name="creationTime">
                                <ns2:ValueList>
                                    <ns2:Value>20140917</ns2:Value>
                                </ns2:ValueList>
                            </ns2:Slot>
                            <ns2:Slot
name="languageCode">
                                <ns2:ValueList>
                                    <ns2:Value>en-us</ns2:Value>
                                </ns2:ValueList>
                            </ns2:Slot>
                            <ns2:Slot name="serviceStartTime">
                                <ns2:ValueList>
                                    <ns2:Value>201409171539</ns2:Value>
                                </ns2:ValueList>
                            </ns2:Slot>
                            <ns2:Slot name="serviceStopTime">
                                <ns2:ValueList>
                                    <ns2:Value>201609171539</ns2:Value>
                                </ns2:ValueList>
                            </ns2:Slot>
                            <ns2:Slot name="sourcePatientId">
                                <ns2:ValueList>
                                    <ns2:Value>PID-
3|14377^^^&amp;amp;26.489.24&amp;amp;ISO</ns2:Value>
                                </ns2:ValueList>
                            </ns2:Slot>
                            <ns2:Slot name="sourcePatientInfo">
                                <ns2:ValueList>
                                    <ns2:Value>PID-5|Doe^John^^^</ns2:Value>
                                    <ns2:Value>PID-
7|19560527</ns2:Value>
                                    <ns2:Value>PID-8|M</ns2:Value>
                                    <ns2:Value>PID-11|100 Main St^^East Lansing^MI^48918^USA</ns2:Value>
                                </ns2:ValueList>
                            </ns2:Slot>
                            <ns2:Name>
                                <ns2:LocalizedString
value="Physical"/>
                            </ns2:Name>
                            <ns2:Description/>
                            <ns2:Classification classificationScheme="urn:uuid:93606bcf-9494-43ec-9b4e-
a7748d1a838d" classifiedObject="Document01" id="cl01">
                                <ns2:Slot
name="authorPerson">
                                    <ns2:ValueList>
                                        <ns2:Value>John Jones</ns2:Value>
                                    </ns2:ValueList>
                                </ns2:Slot>
                                <ns2:Slot name="authorInstitution">
                                    <ns2:ValueList>
                                        <ns2:Value>East Lansing Clinic</ns2:Value>
                                        <ns2:Value>East Lansing Community</ns2:Value>
                                    </ns2:ValueList>
                                </ns2:Slot>
                                <ns2:Slot name="authorRole">
```


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```
                                        <ns2:ValueList>
                                            <ns2:Value>Attending</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Slot
name="authorSpecialty">
                                        <ns2:ValueList>
                                            <ns2:Value>Orthopedic</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                </ns2:Classification>
                                <ns2:Classification classificationScheme="urn:uuid:41a5887f-8865-4c09-
adf7-e362475b143a" classifiedObject="Document01" id="cl02" nodeRepresentation="34133-9">
                                    <ns2:Slot name="codingScheme">
                                        <ns2:ValueList>
                                            <ns2:Value>Connect-a-thon classCodes</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Name>
                                        <ns2:LocalizedString value="History and Physical"/>
                                    </ns2:Name>
                                </ns2:Classification>
                                <ns2:Classification classificationScheme="urn:uuid:f4f85eac-e6cb-4883-
b524-f2705394840f" classifiedObject="Document01" id="cl03" nodeRepresentation="1.3.6.1.4.1.21367.2006.7.101">
                                    <ns2:Slot name="codingScheme">
                                        <ns2:ValueList>
                                            <ns2:Value>Connect-a-thon
confidentialityCodes</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Name>
                                        <ns2:LocalizedString value="Clinical-Staff"/>
                                    </ns2:Name>
                                </ns2:Classification>
                                <ns2:Classification
classificationScheme="urn:uuid:a09d5840-386c-46f2-b5ad-9c3699a4309d" classifiedObject="Document01" id="cl04"
nodeRepresentation="CDAR2/IHE 1.0">
                                    <ns2:Slot name="codingScheme">
                                        <ns2:ValueList>
                                            <ns2:Value>Connect-a-thon formatCodes</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Name>
                                        <ns2:LocalizedString value="CDAR2/IHE 1.0"/>
                                    </ns2:Name>
                                </ns2:Classification>
                                <ns2:Classification
classificationScheme="urn:uuid:f33fb8ac-18af-42cc-ae0e-ed0b0bdb91e1" classifiedObject="Document01" id="cl05"
nodeRepresentation="Outpatient">
                                    <ns2:Slot name="codingScheme">
                                        <ns2:ValueList>
                                            <ns2:Value>Connect-a-thon healthcareFacilityTypeCodes</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Name>
                                        <ns2:LocalizedString value="Outpatient"/>
                                    </ns2:Name>
                                </ns2:Classification>
                                <ns2:Classification classificationScheme="urn:uuid:cccf5598-8b07-4b77-a05e-
ae952c785ead" classifiedObject="Document01" id="cl06" nodeRepresentation="General Medicine">
                                    <ns2:Slot
```


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```
name="codingScheme">
                                        <ns2:ValueList>
                                            <ns2:Value>Connect-a-thon practiceSettingCodes</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Name>
                                        <ns2:LocalizedString value="General Medicine"/>
                                    </ns2:Name>
                                </ns2:Classification>
                                <ns2:Classification classificationScheme="urn:uuid:f0306f51-975f-434e-a61c-
c59651d33983" classifiedObject="Document01" id="cl07" nodeRepresentation="34133-9">
                                    <ns2:Slot
name="codingScheme">
                                        <ns2:ValueList>
                                            <ns2:Value>LOINC</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Name>
                                        <ns2:LocalizedString value="Outpatient Evaluation And Management"/>
                                    </ns2:Name>
                                </ns2:Classification>
                                <ns2:ExternalIdentifier id="ei01" identificationScheme="urn:uuid:58a6f841-87b3-4a3e-
92fd-a8ffeff98427" registryObject="Document01" value="4321^^^&amp;amp;26.489.22&amp;amp;ISO">
                                    <ns2:Name>
                                        <ns2:LocalizedString value="XDSDocumentEntry.patientId"/>
                                    </ns2:Name>
                                </ns2:ExternalIdentifier>
                                <ns2:ExternalIdentifier id="ei02" identificationScheme="urn:uuid:2e82c1f6-a085-4c72-
9da3-8640a32e42ab" registryObject="Document01" value="MiWay7662">
                                    <ns2:Name>
                                        <ns2:LocalizedString value="XDSDocumentEntry.uniqueId"/>
                                    </ns2:Name>
                                </ns2:ExternalIdentifier>
                            </ns2:ExtrinsicObject>
                            <ns2:RegistryPackage id="SubmissionSet01">
                                <ns2:Slot name="submissionTime">
                                    <ns2:ValueList>
                                        <ns2:Value>201409171539</ns2:Value>
                                    </ns2:ValueList>
                                </ns2:Slot>
                                <ns2:Name>
                                    <ns2:LocalizedString
value="Physical"/>
                                </ns2:Name>
                                <ns2:Description>
                                    <ns2:LocalizedString value="Annual physical"/>
                                </ns2:Description>
                                <ns2:Classification classificationScheme="urn:uuid:a7058bb9-b4e4-4307-ba5b-
e3f0ab85e12d" classifiedObject="SubmissionSet01" id="cl08">
                                    <ns2:Slot name="authorPerson">
                                        <ns2:ValueList>
                                            <ns2:Value>James Smith</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Slot
name="authorInstitution">
                                        <ns2:ValueList>
                                            <ns2:Value>East Lansing Clinic</ns2:Value>
                                            <ns2:Value>East Lansing Community</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
```


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```
                                    <ns2:Slot name="authorRole">
                                        <ns2:ValueList>
                                            <ns2:Value>Pulmonary Surgeon</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Slot name="authorSpecialty">
                                        <ns2:ValueList>
                                            <ns2:Value>Orthopedic</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                </ns2:Classification>
                                <ns2:Classification classificationScheme="urn:uuid:aa543740-bdda-424e-8c96-
df4873be8500" classifiedObject="SubmissionSet01" id="cl09" nodeRepresentation="History and
Physical">
                                    <ns2:Slot name="codingScheme">
                                        <ns2:ValueList>
                                            <ns2:Value>Connect-a-thon contentTypeCodes</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Name>
                                        <ns2:LocalizedString value="History and
Physical"/>
                                    </ns2:Name>
                                </ns2:Classification>
                                <ns2:ExternalIdentifier id="ei03" identificationScheme="urn:uuid:96fdda7c-d067-4183-
912e-bf5ee74998a8" registryObject="SubmissionSet01"
value="7.5.0.5.6.8.7.5.2.1">
                                    <ns2:Name>
                                        <ns2:LocalizedString value="XDSSubmissionSet.uniqueId"/>
                                    </ns2:Name>
                                </ns2:ExternalIdentifier>
                                <ns2:ExternalIdentifier id="ei04"
identificationScheme="urn:uuid:554ac39e-e3fe-47fe-b233-965d2a147832" registryObject="SubmissionSet01"
value="3670984664">
                                    <ns2:Name>
                                        <ns2:LocalizedString value="XDSSubmissionSet.sourceId"/>
                                    </ns2:Name>
                                </ns2:ExternalIdentifier>
                                <ns2:ExternalIdentifier id="ei05" identificationScheme="urn:uuid:6b5aea1a-874d-4603-
a4bc-96a0a7b38446" registryObject="SubmissionSet01"
value="4321^^^&amp;amp;26.489.22&amp;amp;ISO">
                                    <ns2:Name>
                                        <ns2:LocalizedString value="XDSSubmissionSet.patientId"/>
                                    </ns2:Name>
                                </ns2:ExternalIdentifier>
                            </ns2:RegistryPackage>
                            <ns2:Classification
classificationNode="urn:uuid:a54d6aa5-d40d-43f9-88c5-b4633d873bdd" classifiedObject="SubmissionSet01"
id="cl10"/>
                            <ns2:Association associationType="HasMember" id="as01"
sourceObject="SubmissionSet01" targetObject="Document01">
                                <ns2:Slot name="SubmissionSetStatus">
                                    <ns2:ValueList>
                                        <ns2:Value>Original</ns2:Value>
                                    </ns2:ValueList>
                                </ns2:Slot>
                            </ns2:Association>
                        </ns2:RegistryObjectList>
                    </ns5:SubmitObjectsRequest>
                    <Document id="MiWay7662">
```


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<xop:Include xmlns:xop="http://www.w3.org/2004/08/xop/include" href="cid:ffa15fe4-bc14-4ea3-b4e3-c2920ee11f7e-1@urn%3Aihe%3Aiti%3Axds-b%3A2007"/>
</Document>
</ProvideAndRegisterDocumentSetRequest>
</soap:Body>
</soap:Envelope>

C.2 NwHIN Document Submission Response

<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
<soap:Header>
<Action xmlns="http://www.w3.org/2005/08/addressing">urn:ihe:iti:2007:ProvideAndRegisterDocumentSet-bResponse</Action>
<MessageID xmlns="http://www.w3.org/2005/08/addressing">urn:uuid:baf9e8fc-f918-46eb-ade2-d2c64c98085c</MessageID>
<To xmlns="http://www.w3.org/2005/08/addressing">http://www.w3.org/2005/08/addressing/anonymous</To>
<RelatesTo xmlns="http://www.w3.org/2005/08/addressing">urn:uuid:db8d2428-a032-404b-9f69-288bd08bdd00</RelatesTo>
<wsse:Security xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd" xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd" soap:mustUnderstand="true">
<wsu:Timestamp wsu:Id="TS-13">
<wsu:Created>2014-09-17T19:39:53.886Z</wsu:Created>
<wsu:Expires>2014-09-17T19:44:53.886Z</wsu:Expires>
</wsu:Timestamp>
<wsse11:SignatureConfirmation xmlns:wsse11="http://docs.oasis-open.org/wss/oasis-wss-wssecurity-secext-1.1.xsd" Value="XMqeny5LA33WQusSo6Xc/MSCf+/MfE9gKq40p55fxG+x1o9bpVG8g5tQdR+9caJYT6ZZ+M8AqZ5Hdbv3qot6zrblJecmOLUkUuYwsVpS9oNNYpQguhlZCTgPQksc3Itq6ZKB5/trKTXAOpU4ztoyoSCmA9quPZDsIPaNUH/Ols4=" wsu:Id="SC-14"/>
</wsse:Security>
</soap:Header>
<soap:Body>
<ns3:RegistryResponse xmlns="urn:ihe:iti:xds-b:2007" xmlns:ns2="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0" xmlns:ns3="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0" xmlns:ns4="urn:oasis:names:tc:ebxml-regrep:xsd:query:3.0" xmlns:ns5="urn:oasis:names:tc:ebxml-regrep:xsd:lcm:3.0" status="urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Success"/>
</soap:Body>
</soap:Envelope>

C.3 IHE Provide and Register Document Set-b Request

<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
<soap:Header>
<MessageID xmlns="http://www.w3.org/2005/08/addressing">2085e1ae-b7ef-4a87-bdfa-c173f64bd139</MessageID>
</soap:Header>
<soap:Body>
<ProvideAndRegisterDocumentSetRequest xmlns="urn:ihe:iti:xds-b:2007" xmlns:ns2="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0" xmlns:ns3="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0" xmlns:ns4="urn:oasis:names:tc:ebxml-regrep:xsd:query:3.0" xmlns:ns5="urn:oasis:names:tc:ebxml-regrep:xsd:lcm:3.0">
<ns5:SubmitObjectsRequest id="123" comment="comments">
<ns2:RegistryObjectList>
<ns2:ExtrinsicObject mimeType="application/pdf" objectType="urn:uuid:7edca82f-054d-47f2-a032-9b2a5b5186c1" id="Document01">

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```
                                <ns2:Slot name="creationTime">
                                    <ns2:ValueList>
                                        <ns2:Value>20140829</ns2:Value>
                                    </ns2:ValueList>
                                </ns2:Slot>
                                <ns2:Slot name="languageCode">
                                    <ns2:ValueList>
                                        <ns2:Value>en-us</ns2:Value>
                                    </ns2:ValueList>
                                </ns2:Slot>
                                <ns2:Slot name="serviceStartTime">
                                    <ns2:ValueList>
                                        <ns2:Value>201408291516</ns2:Value>
                                    </ns2:ValueList>
                                </ns2:Slot>
                                <ns2:Slot name="serviceStopTime">
                                    <ns2:ValueList>
                                        <ns2:Value>201608291516</ns2:Value>
                                    </ns2:ValueList>
                                </ns2:Slot>
                                <ns2:Slot name="sourcePatientId">
                                    <ns2:ValueList>
                                        <ns2:Value>87409^^^&amp;amp;26.489.22&amp;amp;ISO</ns2:Value>
                                    </ns2:ValueList>
                                </ns2:Slot>
                                <ns2:Slot name="sourcePatientInfo">
                                    <ns2:ValueList>
                                        <ns2:Value>PID
3|87409^^^&amp;amp;26.489.22&amp;amp;ISO</ns2:Value>
                                        <ns2:Value>PID-5|Doe^John^^^</ns2:Value>
                                        <ns2:Value>PID-7|19560527</ns2:Value>
                                        <ns2:Value>PID-8|M</ns2:Value>
                                        <ns2:Value>PID-11|100
Main St^^Metropolis^Il^44130^USA</ns2:Value>
                                    </ns2:ValueList>
                                </ns2:Slot>
                                <ns2:Name>
                                    <ns2:LocalizedString value="Physical"/>
                                </ns2:Name>
                                <ns2:Description/>
                                <ns2:Classification
classificationScheme="urn:uuid:93606bcf-9494-43ec-9b4e-a7748d1a838d" classifiedObject="Document01" id="cl01">
                                    <ns2:Slot name="authorPerson">
                                        <ns2:ValueList>
                                            <ns2:Value>John
Jones</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Slot name="authorInstitution">
                                        <ns2:ValueList>
                                            <ns2:Value>East Lansing Clinic</ns2:Value>
                                            <ns2:Value>East Lansing
Community</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Slot name="authorRole">
                                        <ns2:ValueList>
                                            <ns2:Value>Attending</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Slot
```


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```
name="authorSpecialty">
                                        <ns2:ValueList>
                                            <ns2:Value>Orthopedic</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                </ns2:Classification>
                                <ns2:Classification
classificationScheme="urn:uuid:41a5887f-8865-4c09-adf7-e362475b143a" classifiedObject="Document01"
nodeRepresentation="History and Physical" id="cl02">
                                    <ns2:Slot
name="codingScheme">
                                        <ns2:ValueList>
                                            <ns2:Value>Connect-a-thon classCodes</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Name>
                                        <ns2:LocalizedString value="History and Physical"/>
                                    </ns2:Name>
                                </ns2:Classification>
                                <ns2:Classification classificationScheme="urn:uuid:f4f85eac-e6cb-4883-b524-
f2705394840f" classifiedObject="Document01"
nodeRepresentation="1.3.6.1.4.1.21367.2006.7.101" id="cl03">
                                    <ns2:Slot name="codingScheme">
                                        <ns2:ValueList>
                                            <ns2:Value>Connect-a-thon confidentialityCodes</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Name>
                                        <ns2:LocalizedString value="Clinical-Staff"/>
                                    </ns2:Name>
                                </ns2:Classification>
                                <ns2:Classification
classificationScheme="urn:uuid:a09d5840-386c-46f2-b5ad-9c3699a4309d" classifiedObject="Document01"
nodeRepresentation="CDAR2/IHE 1.0" id="cl04">
                                    <ns2:Slot
name="codingScheme">
                                        <ns2:ValueList>
                                            <ns2:Value>Connect-a-thon formatCodes</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Name>
                                        <ns2:LocalizedString value="CDAR2/IHE 1.0"/>
                                    </ns2:Name>
                                </ns2:Classification>
                                <ns2:Classification classificationScheme="urn:uuid:f33fb8ac-18af-42cc-ae0e-ed0b0bdb91e1"
classifiedObject="Document01"
nodeRepresentation="Outpatient" id="cl05">
                                    <ns2:Slot name="codingScheme">
                                        <ns2:ValueList>
                                            <ns2:Value>Connect-a-thon healthcareFacilityTypeCodes</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Name>
                                        <ns2:LocalizedString value="Outpatient"/>
                                    </ns2:Name>
                                </ns2:Classification>
                                <ns2:Classification classificationScheme="urn:uuid:cccf5598-8b07-4b77-a05e-
ae952c785ead" classifiedObject="Document01" nodeRepresentation="General Medicine" id="cl06">
                                    <ns2:Slot name="codingScheme">
                                        <ns2:ValueList>
                                            <ns2:Value>Connect-a-thon
```


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```
practiceSettingCodes</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Name>
                                        <ns2:LocalizedString value="General Medicine"/>
                                    </ns2:Name>
                                </ns2:Classification>
                                <ns2:Classification
classificationScheme="urn:uuid:f0306f51-975f-434e-a61c-c59651d33983" classifiedObject="Document01"
nodeRepresentation="34108-1" id="cl07">
                                    <ns2:Slot name="codingScheme">
                                        <ns2:ValueList>
                                            <ns2:Value>LOINC</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Name>
                                        <ns2:LocalizedString value="Outpatient Evaluation And Management"/>
                                    </ns2:Name>
                                </ns2:Classification>
                                <ns2:ExternalIdentifier registryObject="Document01"
identificationScheme="urn:uuid:58a6f841-87b3-4a3e-92fd-a8ffeff98427"
value="D333222^^^&amp;amp;26.489.22&amp;amp;ISO" id="ei01">
                                    <ns2:Name>
                                        <ns2:LocalizedString value="XDSDocumentEntry.patientId"/>
                                    </ns2:Name>
                                </ns2:ExternalIdentifier>

                                <ns2:ExternalIdentifier registryObject="Document01"
identificationScheme="urn:uuid:2e82c1f6-a085-4c72-9da3-8640a32e42ab" value="MiWay1234" id="ei02">
                                    <ns2:Name>
                                        <ns2:LocalizedString value="XDSDocumentEntry.uniqueId"/>
                                    </ns2:Name>
                                </ns2:ExternalIdentifier>
                            </ns2:ExtrinsicObject>
                            <ns2:RegistryPackage id="SubmissionSet01">
                                <ns2:Slot
name="submissionTime">
                                    <ns2:ValueList>
                                        <ns2:Value>201408291516</ns2:Value>
                                    </ns2:ValueList>
                                </ns2:Slot>
                                <ns2:Name>
                                    <ns2:LocalizedString value="Physical"/>
                                </ns2:Name>
                                <ns2:Description>
                                    <ns2:LocalizedString value="Annual physical"/>
                                </ns2:Description>
                                <ns2:Classification classificationScheme="urn:uuid:a7058bb9-b4e4-4307-ba5b-
e3f0ab85e12d"
classifiedObject="SubmissionSet01" id="cl08">
                                    <ns2:Slot name="authorPerson">
                                        <ns2:ValueList>
                                            <ns2:Value>James Smith</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Slot
name="authorInstitution">
                                        <ns2:ValueList>
                                            <ns2:Value>East Lansing Clinic</ns2:Value>
                                            <ns2:Value>East Lansing Community</ns2:Value>
                                        </ns2:ValueList>
```


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```
                                    </ns2:Slot>
                                    <ns2:Slot
name="authorRole">
                                        <ns2:ValueList>
                                            <ns2:Value>Pulmonary Surgeon</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Slot name="authorSpecialty">
                                        <ns2:ValueList>
                                            <ns2:Value>Orthopedic</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                </ns2:Classification>
                                <ns2:Classification classificationScheme="urn:uuid:aa543740-bdda-424e-8c96-
df4873be8500"
classifiedObject="SubmissionSet01" nodeRepresentation="History and Physical" id="cl09">
                                    <ns2:Slot name="codingScheme">
                                        <ns2:ValueList>
                                            <ns2:Value>Connect-a-thon
contentTypeCodes</ns2:Value>
                                        </ns2:ValueList>
                                    </ns2:Slot>
                                    <ns2:Name>
                                        <ns2:LocalizedString value="History and Physical"/>
                                    </ns2:Name>
                                </ns2:Classification>
                                <ns2:ExternalIdentifier
registryObject="SubmissionSet01" identificationScheme="urn:uuid:96fdda7c-d067-4183-912e-bf5ee74998a8"
value="1.0.6.5.6.8.2.6.7.1" id="ei03">
                                    <ns2:Name>
                                        <ns2:LocalizedString
value="XDSSubmissionSet.uniqueId"/>
                                    </ns2:Name>
                                </ns2:ExternalIdentifier>
                                <ns2:ExternalIdentifier registryObject="SubmissionSet01"
identificationScheme="urn:uuid:554ac39e-e3fe-
47fe-b233-965d2a147832" value="26.489.22" id="ei04">
                                    <ns2:Name>
                                        <ns2:LocalizedString value="XDSSubmissionSet.sourceId"/>
                                    </ns2:Name>
                                </ns2:ExternalIdentifier>
                                <ns2:ExternalIdentifier registryObject="SubmissionSet01"
identificationScheme="urn:uuid:6b5aea1a-874d-4603-a4bc-96a0a7b38446"
value="D333222^^^&amp;amp;26.489.22&amp;amp;ISO"
id="ei05">
                                    <ns2:Name>
                                        <ns2:LocalizedString value="XDSSubmissionSet.patientId"/>
                                    </ns2:Name>
                                </ns2:ExternalIdentifier>
                            </ns2:RegistryPackage>
                            <ns2:Classification
classifiedObject="SubmissionSet01" classificationNode="urn:uuid:a54d6aa5-d40d-43f9-88c5-b4633d873bdd"
id="cl10"/>
                            <ns2:Association associationType="HasMember"
sourceObject="SubmissionSet01" targetObject="Document01" id="as01">
                                <ns2:Slot name="SubmissionSetStatus">
                                    <ns2:ValueList>
                                        <ns2:Value>Original</ns2:Value>
                                    </ns2:ValueList>
                                </ns2:Slot>
                            </ns2:Association>
```


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```
                </ns2:RegistryObjectList>
            </ns5:SubmitObjectsRequest>
            <Document id="Document01">JVBERi0xLjMNCiXi48/TDQoxIDAgDQo=</Document>
        </ProvideAndRegisterDocumentSetRequest>
    </soap:Body>
</soap:Envelope>
```

C.4 IHE Provide and Register Document Set-b Response

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"><soap:Body><ns3:RegistryResponse xmlns="urn:ihe:iti:xds-b:2007" xmlns:ns2="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0" xmlns:ns3="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0" xmlns:ns4="urn:oasis:names:tc:ebxml-regrep:xsd:query:3.0" xmlns:ns5="urn:oasis:names:tc:ebxml-regrep:xsd:lcm:3.0" status="urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Success"/></soap:Body></soap:Envelope>
```

C.5 NwHIN Query for Documents Request

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
    <soap:Header>
        <wsse:Security xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd" xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd" soap:mustUnderstand="true">
            <saml2:Assertion xmlns:saml2="urn:oasis:names:tc:SAML:2.0:assertion" xmlns:xs="http://www.w3.org/2001/XMLSchema" ID="_dc55c36c56c04e41b183f23e4f88eaf2" IssueInstant="2014-02-25T16:39:02.811Z" Version="2.0">
                <saml2:Issuer Format="urn:oasis:names:tc:SAML:1.1:nameid-format:X509SubjectName">CN=connectgw.mihin.org,OU=mihin,O=mihin,L=East Lansing,ST=MI,C=US</saml2:Issuer>
                <ds:Signature xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
                    <ds:SignedInfo>
                        <ds:CanonicalizationMethod Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"/>
                        <ds:SignatureMethod Algorithm="http://www.w3.org/2000/09/xmldsig#rsa-sha1"/>
                        <ds:Reference URI="#_dc55c36c56c04e41b183f23e4f88eaf2">
                            <ds:Transforms>
                                <ds:Transform Algorithm="http://www.w3.org/2000/09/xmldsig#enveloped-signature"/>
                                <ds:Transform Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#">
                                    <ec:InclusiveNamespaces xmlns:ec="http://www.w3.org/2001/10/xml-exc-c14n#" PrefixList="xs"/>
                                </ds:Transform>
                            </ds:Transforms>
                            <ds:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldsig#sha1"/>
                            <ds:DigestValue>bO1b+9326fbaA23KmOky7fFAYlU=</ds:DigestValue>
                        </ds:Reference>
                    </ds:SignedInfo>

    <ds:SignatureValue>VCOV6IFkpxay21IbAwTzHZgayJe6RwtcGCWEH95DaAmlPDgtesbW2lgkcri8V00XI4L+sRuCcIWTwvrGlY3WE8nd8vj0rASRbBWcHVefCuzrfY+0OWvKmDWBLW+wJ2X7waXN5rMw5A3jmQ3kh0352gXQquxtVr8SELV8f7MXZ/I=
                    </ds:SignatureValue>
                    <ds:KeyInfo>
                        <ds:KeyValue>
                            <ds:RSAKeyValue>

    <ds:Modulus>jh8AZgq9a6h/lsJyZoxsS9rYJWEBa9nRA+m3tNP2EevwHgRTYnhMhozu1hR60H4c+j8FC8oL+A/m0qupVCwQQVcBlCNt0U9ApqA+Xr2vDTPvtf6t3vhkS0xkB4Mw1PAUe6z9psSS0vmAXfQW5HuGlFsLb8Sw3+TZ3w1L4dD4BVk=</ds:Modulus>
                            <ds:Exponent>AQAB</ds:Exponent>
```


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```
                                    </ds:RSAKeyValue>
                                </ds:KeyValue>
                            </ds:KeyInfo>
                        </ds:Signature>
                        <saml2:Subject>
                            <saml2:NameID
Format="urn:oasis:names:tc:SAML:1.1:nameid-format:X509SubjectName">UID=kskagerb</saml2:NameID>
                            <saml2:SubjectConfirmation Method="urn:oasis:names:tc:SAML:2.0:cm:holder-of-key">
                                <saml2:SubjectConfirmationData>
                                    <ds:KeyInfo xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
                                        <ds:KeyValue>
                                            <ds:RSAKeyValue>

    <ds:Modulus>jh8AZgq9a6h/lsJyZoxsS9rYJWEBa9nRA+m3tNP2EevwHgRTYnhMhozu1hR60H4c+j8FC8oL+A/m
0qupVCwQQVcBlCNt0U9ApqA+Xr2vDTPvtf6t3vhkS0xkB4Mw1PAUe6z9psSS0vmAXfQW5HuGlFsL
b8Sw3+TZ3w1L4dD4BVk=</ds:Modulus>
                                                <ds:Exponent>AQAB</ds:Exponent>
                                            </ds:RSAKeyValue>
                                        </ds:KeyValue>
                                    </ds:KeyInfo>
                                </saml2:SubjectConfirmationData>
                            </saml2:SubjectConfirmation>
                        </saml2:Subject>
                        <saml2:AuthnStatement AuthnInstant="2009-04-16T13:15:39.000Z" SessionIndex="987">
                            <saml2:SubjectLocality Address="158.147.185.168" DNSName="158.147.185.168"/>
                            <saml2:AuthnContext>

    <saml2:AuthnContextClassRef>urn:oasis:names:tc:SAML:2.0:ac:classes:X509</saml2:AuthnContextClassRef>
                            </saml2:AuthnContext>
                        </saml2:AuthnStatement>
                        <saml2:AttributeStatement>
                            <saml2:Attribute
Name="urn:oasis:names:tc:xspa:1.0:subject:subject-id" NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-
format:uri">
                                <saml2:AttributeValue xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="xs:string">Karl S Skagerberg</saml2:AttributeValue>
                            </saml2:Attribute>
                        </saml2:AttributeStatement>
                        <saml2:AttributeStatement>
                            <saml2:Attribute
Name="urn:oasis:names:tc:xspa:1.0:subject:organization" NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-
format:uri">
                                <saml2:AttributeValue xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:type="xs:string">26.489.24</saml2:AttributeValue>
                            </saml2:Attribute>
                        </saml2:AttributeStatement>
                        <saml2:AttributeStatement>
                            <saml2:Attribute
Name="urn:oasis:names:tc:xspa:1.0:subject:organization-id" NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-
format:uri">
                                <saml2:AttributeValue xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:type="xs:string">26.489.24</saml2:AttributeValue>
                            </saml2:Attribute>
                        </saml2:AttributeStatement>
                        <saml2:AttributeStatement>
                            <saml2:Attribute
Name="urn:nhin:names:saml:homeCommunityId" NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-format:uri">
                                <saml2:AttributeValue xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="xs:string">26.489.24</saml2:AttributeValue>
                            </saml2:Attribute>
                        </saml2:AttributeStatement>
```


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```
                    <saml2:AttributeStatement>
                        <saml2:Attribute
Name="urn:oasis:names:tc:xacml:2.0:resource:resource-id" NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-
format:uri">
                            <saml2:AttributeValue xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:type="xs:string">500000000^^^&amp;1.1&amp;ISO</saml2:AttributeValue>
                        </saml2:Attribute>
                    </saml2:AttributeStatement>
                    <saml2:AttributeStatement>
                        <saml2:Attribute
Name="urn:oasis:names:tc:xacml:2.0:subject:role" NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-format:uri">
                            <saml2:AttributeValue>
                                <hl7:Role xmlns:hl7="urn:hl7-org:v3" code="307969004"
codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED_CT" displayName="Public Health" type="hl7:CE"/>
                            </saml2:AttributeValue>
                        </saml2:Attribute>
                    </saml2:AttributeStatement>
                    <saml2:AttributeStatement>
                        <saml2:Attribute Name="urn:oasis:names:tc:xspa:1.0:subject:purposeofuse"
NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-format:uri">
                            <saml2:AttributeValue>
                                <hl7:PurposeOfUse xmlns:hl7="urn:hl7-org:v3" code="PUBLICHEALTH"
codeSystem="2.16.840.1.113883.3.18.7.1" codeSystemName="nhin-purpose" displayName="Use or disclosure of
Psychotherapy Notes"/>
                            </saml2:AttributeValue>
                        </saml2:Attribute>
                    </saml2:AttributeStatement>
                    <saml2:AuthzDecisionStatement Decision="Permit"
Resource="https://158.147.185.168:8181/SamlReceiveService/SamlProcessWS">
                        <saml2:Action Namespace="urn:oasis:names:tc:SAML:1.0:action:rwedc">Execute</saml2:Action>
                        <saml2:Evidence>
                            <saml2:Assertion xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
ID="40df7c0a-
ff3e-4b26-baeb-f2910f6d05a9" IssueInstant="2009-04-16T13:10:39.093Z" Version="2.0"
xsi:type="saml2:AssertionType">
                                <saml2:Issuer Format="urn:oasis:names:tc:SAML:1.1:nameid-
format:X509SubjectName">CN=SAML User,OU=Harris,O=HITS,L=Melbourne,ST=FL,C=US</saml2:Issuer>
                                <saml2:Subject>
                                    <saml2:NameID Format="urn:oasis:names:tc:SAML:1.1:nameid-
format:X509SubjectName">UID=kskagerb</saml2:NameID>
                                    <saml2:SubjectConfirmation Method="urn:oasis:names:tc:SAML:2.0:cm:holder-of-
key">
                                        <saml2:SubjectConfirmationData>
                                            <ds:KeyInfo
xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
                                                <ds:KeyValue>
                                                    <ds:RSAKeyValue>

    <ds:Modulus>jh8AZgq9a6h/lsJyZoxsS9rYJWEBa9nRA+m3tNP2EevwHgRTYnhMhozu1hR60H4c+j8FC8oL+A/m
0qupVCwQQVcBlCNt0U9ApqA+Xr2vDTPvtf6t3vhkS0xkB4Mw1PAUe6z9psSS0vmAXfQW5HuGlFsL
b8Sw3+TZ3w1L4dD4BVk=</ds:Modulus>
                                                        <ds:Exponent>AQAB</ds:Exponent>
                                                    </ds:RSAKeyValue>
                                                </ds:KeyValue>
                                            </ds:KeyInfo>
                                        </saml2:SubjectConfirmationData>
                                    </saml2:SubjectConfirmation>
                                </saml2:Subject>
                                <saml2:Conditions NotBefore="2009-04-16T13:10:39.093Z" NotOnOrAfter="2014-02-
25T16:44:02.813Z"/>
                                <saml2:AttributeStatement>
```


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<saml2:Attribute Name="AccessConsentPolicy"
NameFormat="http://www.hhs.gov/healthit/nhin">
<saml2:AttributeValue xsi:type="xs:string">Claim-Ref-
1234</saml2:AttributeValue>
</saml2:Attribute>
<saml2:Attribute
Name="InstanceAccessConsentPolicy" NameFormat="http://www.hhs.gov/healthit/nhin">
<saml2:AttributeValue xsi:type="xs:string">Claim-Instance-
1</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>
</saml2:Assertion>
</saml2:Evidence>
</saml2:AuthzDecisionStatement>
</saml2:Assertion>
<ds:Signature xmlns:ds="http://www.w3.org/2000/09/xmldsig#" Id="SIG-64">
<ds:SignedInfo>
<ds:CanonicalizationMethod Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#">
<ec:InclusiveNamespaces xmlns:ec="http://www.w3.org/2001/10/xml-exc-c14n#"
PrefixList="soap"/>
</ds:CanonicalizationMethod>
<ds:SignatureMethod Algorithm="http://www.w3.org/2000/09/xmldsig#rsa-sha1"/>
<ds:Reference URI="#TS-63">
<ds:Transforms>
<ds:Transform
Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#">
<ec:InclusiveNamespaces xmlns:ec="http://www.w3.org/2001/10/xml-exc-c14n#"
PrefixList="wsse soap"/>
</ds:Transform>
</ds:Transforms>
<ds:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldsig#sha1"/>
<ds:DigestValue>sn63WA8EffEM7PC7UcYHZT3DCmw=</ds:DigestValue>
</ds:Reference>
</ds:SignedInfo>

<ds:SignatureValue>VU+k7Jbd6d6OHcdr6z6xxaa6oDOAnBVloRIUQgoBYpFsJs3GGrwlZltWxRfjDoR0fSRtVQsB5vL3av
Y46ey3Dm/FJGrYWgIfEz3Sdth3aYukWMHI9wU348ZwMAz+217TC5cUH+spuT0hT+UsdYUJ3RnLbnzPVab4o1V9waLbbN
4=
</ds:SignatureValue>
<ds:KeyInfo Id="KeyId-78A91B91C2FC4746F0139334634283337">
<wsse:SecurityTokenReference xmlns:wsse11="http://docs.oasis-open.org/wss/oasis-wss-
wssecurity-secext-1.1.xsd"
wsse11:TokenType="http://docs.oasis-open.org/wss/oasis-wss-saml-token-profile-1.1#SAMLV2.0" wsu:Id="STRId-
78A91B91C2FC4746F0139334634283338">
<wsse:KeyIdentifier ValueType="http://docs.oasis-
open.org/wss/oasis-wss-saml-token-profile-1.1#SAMLID">_dc55c36c56c04e41b183f23e4f88eaf2</wsse:KeyIdentifier>
</wsse:SecurityTokenReference>
</ds:KeyInfo>
</ds:Signature>
<wsu:Timestamp
wsu:Id="TS-63">
<wsu:Created>2014-02-25T16:39:02.811Z</wsu:Created>
<wsu:Expires>2014-02-25T17:39:02.811Z</wsu:Expires>
</wsu:Timestamp>
</wsse:Security>
<Action
xmlns="http://www.w3.org/2005/08/addressing">urn:ihe:iti:2007:CrossGatewayQuery</Action>
<MessageID xmlns="http://www.w3.org/2005/08/addressing">urn:uuid:5ccb3899-77c1-44e9-90d9-
87b5e246f6af</MessageID>

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```
        <To
xmlns="http://www.w3.org/2005/08/addressing">https://172.16.14.94:8181/Gateway/DocumentQuery/3_0/NhinSer
vice/RespondingGateway_Query_Service/DocQuery</To>
        <ReplyTo
xmlns="http://www.w3.org/2005/08/addressing">
            <Address>http://www.w3.org/2005/08/addressing/anonymous</Address>
        </ReplyTo>
    </soap:Header>
    <soap:Body>
        <ns3:AdhocQueryRequest
xmlns="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0" xmlns:ns2="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0"
xmlns:ns3="urn:oasis:names:tc:ebxml-regrep:xsd:query:3.0"
xmlns:ns4="urn:oasis:names:tc:ebxml-regrep:xsd:lcm:3.0" comment="?" federated="false" federation="?" id="?"
maxResults="-1" startIndex="0">
            <ns3:ResponseOption returnComposedObjects="true"
returnType="LeafClass"/>
            <AdhocQuery home="urn:oid:2.16.840.1.113883.3.1481.2.4.1" id="urn:uuid:14d4debf-8f97-4251-9a74-
a90016b0af0d" lid="?" objectType="?" status="?">
                <Slot
name="$XDSDocumentEntryPatientId" slotType="?">
                    <ValueList>
                        <Value>'1111.4444^^^&amp;amp;26.489.22&amp;amp;ISO'</Value>
                    </ValueList>
                </Slot>
                <Slot name="$XDSDocumentEntryStatus" slotType="?">
                    <ValueList>
                        <Value>('urn:oasis:names:tc:ebxml-regrep:StatusType:Approved')</Value>
                    </ValueList>
                </Slot>
                <Slot name="$XDSDocumentEntryClassCode">
                    <ValueList>
                        <Value>34133-9^^2.16.840.1.113883.6.1</Value>
                    </ValueList>
                </Slot>
                <Slot name="$XDSDocumentEntryClassCodeScheme">
                    <ValueList>
                        <Value>2.16.840.1.113883.6.1</Value>
                    </ValueList>
                </Slot>
            </AdhocQuery>
        </ns3:AdhocQueryRequest>
    </soap:Body>
</soap:Envelope>
```

C.6 NwHIN Query for Documents Response

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
    <soap:Header>
        <Action
xmlns="http://www.w3.org/2005/08/addressing">urn:ihe:iti:2007:CrossGatewayQueryResponse</Action>
        <MessageID xmlns="http://www.w3.org/2005/08/addressing">urn:uuid:a95f7ef0-5030-4e5f-
8d13-2f05e6c6df0b</MessageID>
        <To
xmlns="http://www.w3.org/2005/08/addressing">http://www.w3.org/2005/08/addressing/anonymous</To>
        <RelatesTo
xmlns="http://www.w3.org/2005/08/addressing">urn:uuid:5ccb3899-77c1-44e9-90d9-87b5e246f6af</RelatesTo>
        <wsse:Security xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-
200401-wss-wssecurity-secext-1.0.xsd" xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-
wssecurity-utility-1.0.xsd" soap:mustUnderstand="true">
            <wsu:Timestamp
```


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```
wsu:Id="TS-1">
                        <wsu:Created>2014-02-25T16:39:15.084Z</wsu:Created>
                        <wsu:Expires>2014-02-25T16:44:15.084Z</wsu:Expires>
                    </wsu:Timestamp>
                    <wsse11:SignatureConfirmation
xmlns:wsse11="http://docs.oasis-open.org/wss/oasis-wss-wssecurity-secext-1.1.xsd"
Value="VU+k7Jbd6d6OHcdr6z6xxaa6oDOAnBVloRIUQgoBYpFsJs3GGrwlZltWxRfjDoR0fSRtVQsB5vL3avY46ey3Dm/FJGr
YWgIfEz3Sdth3aYukWMHI9wU348ZwMAz+217TC5cUH+spuT0hT+UsdYUJ3RnLbnzPVab4o1V9waLbbN4="
wsu:Id="SC-2"/>
            </wsse:Security>
        </soap:Header>
        <soap:Body>
            <ns3:AdhocQueryResponse xmlns="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
xmlns:ns2="urn:oasis:names:tc:ebxml-
regrep:xsd:rs:3.0" xmlns:ns3="urn:oasis:names:tc:ebxml-regrep:xsd:query:3.0" xmlns:ns4="urn:oasis:names:tc:ebxml-
regrep:xsd:lcm:3.0" status="urn:oasis:names:tc:ebxml-
regrep:ResponseStatusType:Success">
                    <RegistryObjectList>
                        <ExtrinsicObject home="urn:oid:26.489.22" id="urn:uuid:0dcd6457-cd26-4f64-b6a8-9e3259ce49ff"
isOpaque="false"
mimeType="text/xml" objectType="urn:uuid:7edca82f-054d-47f2-a032-9b2a5b5186c1" status="Available">
                            <Slot name="creationTime">
                                <ValueList>
                                    <Value>20140225163914</Value>
                                </ValueList>
                            </Slot>
                            <Slot name="hash">
                                <ValueList>
                                    <Value>hash</Value>
                                </ValueList>
                            </Slot>
                            <Slot name="intendedRecipient">
                                <ValueList>
                                    <Value>James Jones</Value>
                                </ValueList>
                            </Slot>
                            <Slot
name="languageCode">
                                <ValueList>
                                    <Value>en-us</Value>
                                </ValueList>
                            </Slot>
                            <Slot name="legalAuthenticator">
                                <ValueList>
                                    <Value>legal</Value>
                                </ValueList>
                            </Slot>
                            <Slot
name="serviceStartTime">
                                <ValueList>
                                    <Value>20140225163914</Value>
                                </ValueList>
                            </Slot>
                            <Slot name="serviceStopTime">
                                <ValueList>
                                    <Value>20150225163914</Value>
                                </ValueList>
                            </Slot>
                            <Slot
name="size">
                                <ValueList>
```


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```
                                <Value>1064</Value>
                            </ValueList>
                        </Slot>
                        <Slot name="sourcePatientId">
                            <ValueList>
                                <Value>'1111.4444^^^&amp;amp;26.489.22&amp;amp;ISO'</Value>
                            </ValueList>
                        </Slot>
                        <Slot
name="sourcePatientInfo">
                            <ValueList>
                                <Value>PID-3|pid1^^^domain</Value>
                                <Value>PID-5|Patient^Name^^^</Value>
                                <Value>PID-7|19751010</Value>
                                <Value>PID-8|M</Value>
                                <Value>PID-11|123 Fake
Street Arlington, VA 22222</Value>
                            </ValueList>
                        </Slot>
                        <Slot name="URI">
                            <ValueList>
                                <Value>1.8344.7845</Value>
                            </ValueList>
                        </Slot>
                        <Slot name="repositoryUniqueId">
                            <ValueList>
                                <Value>1.3.9.13</Value>
                            </ValueList>
                        </Slot>
                        <Description>
                            <LocalizedString value="Simulator Document"/>
                        </Description>
                        <Classification classificationScheme="urn:uuid:93606bcf-9494-43ec-
9b4e-a7748d1a838d" classifiedObject="urn:uuid:0dcd6457-cd26-4f64-b6a8-9e3259ce49ff" id=""
nodeRepresentation="">
                            <Slot name="authorPerson">
                                <ValueList>
                                    <Value>John Jones</Value>
                                </ValueList>
                            </Slot>
                            <Slot name="authorInstitution">
                                <ValueList>
                                    <Value>Hospital</Value>
                                </ValueList>
                            </Slot>
                            <Slot name="authorRole">
                                <ValueList>
                                    <Value>Doctor</Value>
                                </ValueList>
                            </Slot>
                            <Slot name="authorSpecialty">
                                <ValueList>
                                    <Value>Specialty</Value>
                                </ValueList>
                            </Slot>
                        </Classification>
                        <Classification classificationScheme="urn:uuid:41a5887f-8865-4c09-adf7-
e362475b143a" classifiedObject="urn:uuid:0dcd6457-cd26-4f64-b6a8-9e3259ce49ff" id=""
nodeRepresentation="ClassCode">
                            <Slot name="codingScheme">
                                <ValueList>
```


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```
                                    <Value>ClassCodeScheme</Value>
                                </ValueList>
                            </Slot>
                            <Name>
                                <LocalizedString value="ClassCodeDisplayName"/>
                            </Name>
                        </Classification>
                        <Classification
classificationScheme="urn:uuid:f4f85eac-e6cb-4883-b524-f2705394840f" classifiedObject="urn:uuid:0dcd6457-cd26-
4f64-b6a8-9e3259ce49ff" id="" nodeRepresentation="ConfidentialityCode">
                            <Slot name="codingScheme">
                                <ValueList>
                                    <Value>ConfidentialityCodeScheme</Value>
                                </ValueList>
                            </Slot>
                            <Name>
                                <LocalizedString value="ConfidentialityCodeName"/>
                            </Name>
                        </Classification>
                        <Classification classificationScheme="urn:uuid:2c6b8cb7-8b2a-4051-b291-b1ae6a575ef4"
classifiedObject="urn:uuid:0dcd6457-cd26-4f64-b6a8-9e3259ce49ff" id=""
nodeRepresentation="EventCode">
                            <Slot name="codingScheme">
                                <ValueList>
                                    <Value>EventCodeScheme</Value>
                                </ValueList>
                            </Slot>
                            <Name>
                                <LocalizedString value="EventDisplayName"/>
                            </Name>
                        </Classification>
                        <Classification classificationScheme="urn:uuid:a09d5840-386c-46f2-b5ad-9c3699a4309d"
classifiedObject="urn:uuid:0dcd6457-cd26-4f64-b6a8-9e3259ce49ff" id=""
nodeRepresentation="FormatCode">
                            <Slot name="codingScheme">
                                <ValueList>
                                    <Value>FormatCodeDisplayScheme</Value>
                                </ValueList>
                            </Slot>
                            <Name>
                                <LocalizedString value="FormatCodeDisplayName"/>
                            </Name>
                        </Classification>
                        <Classification classificationScheme="urn:uuid:f33fb8ac-18af-42cc-ae0e-ed0b0bdb91e1"
classifiedObject="urn:uuid:0dcd6457-cd26-4f64-b6a8-9e3259ce49ff" id=""
nodeRepresentation="FacilityCode">
                            <Slot name="codingScheme">
                                <ValueList>
                                    <Value>FacilityCodeScheme</Value>
                                </ValueList>
                            </Slot>
                            <Name>
                                <LocalizedString value="FacilityCodeDisplayName"/>
                            </Name>
                        </Classification>
                        <Classification classificationScheme="urn:uuid:cccf5598-8b07-4b77-a05e-ae952c785ead"
classifiedObject="urn:uuid:0dcd6457-cd26-4f64-b6a8-9e3259ce49ff" id=""
nodeRepresentation="PracticeSetting">
                            <Slot name="codingScheme">
                                <ValueList>
                                    <Value>PracticeSettingScheme</Value>
```


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```
                                    </ValueList>
                                </Slot>
                                <Name>
                                    <LocalizedString
value="PracticeSettingDisplayName"/>
                                </Name>
                            </Classification>
                            <Classification classificationScheme="urn:uuid:f0306f51-975f-434e-a61c-c59651d33983"
classifiedObject="urn:uuid:0dcd6457-
cd26-4f64-b6a8-9e3259ce49ff" id="" nodeRepresentation="TypeCode">
                                <Slot name="codingScheme">
                                    <ValueList>
                                        <Value>TypeCodeScheme</Value>
                                    </ValueList>
                                </Slot>
                                <Name>
                                    <LocalizedString
value="TypeCodeDisplayName"/>
                                </Name>
                            </Classification>
                            <ExternalIdentifier id="" identificationScheme="urn:uuid:2e82c1f6-a085-4c72-9da3-
8640a32e42ab"
registryObject="urn:uuid:0dcd6457-cd26-4f64-b6a8-9e3259ce49ff" value="1.8344.7845">
                                <Name>
                                    <LocalizedString value="XDSDocumentEntry.uniqueId"/>
                                </Name>
                            </ExternalIdentifier>
                            <ExternalIdentifier id="" identificationScheme="urn:uuid:58a6f841-87b3-4a3e-92fd-
a8ffeff98427" registryObject="urn:uuid:0dcd6457-cd26-4f64-b6a8-9e3259ce49ff"
value="'1111.4444^^^&amp;26.489.22&amp;ISO'">
                                <Name>
                                    <LocalizedString value="XDSDocumentEntry.patientId"/>
                                </Name>
                            </ExternalIdentifier>
                        </ExtrinsicObject>
                    </RegistryObjectList>
                </ns3:AdhocQueryResponse>
            </soap:Body>
        </soap:Envelope>
```

C.7 XGO Request

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
    <soap:Header>
        <MessageID xmlns="http://www.w3.org/2005/08/addressing">5ce2e996-221c-47ff-afca-
94b3a1b95242</MessageID>
        <home xmlns="http://mihin.org/home">26.489.22</home>
    </soap:Header>
    <soap:Body>
        <ns3:AdhocQueryRequest xmlns="urn:oasis:names:tc:ebxml-
regrep:xsd:rim:3.0" xmlns:ns2="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0" xmlns:ns3="urn:oasis:names:tc:ebxml-
regrep:xsd:query:3.0" xmlns:ns4="urn:oasis:names:tc:ebxml-
regrep:xsd:lcm:3.0" xmlns:ns5="urn:ihe:iti:xds-b:2007" federated="false" federation="?" startIndex="0" maxResults="-1"
id="?" comment="?">
            <ns3:ResponseOption
returnType="RegistryObject" returnComposedObjects="false"/>
            <AdhocQuery lid="?" objectType="?" status="?" id="urn:uuid:14d4debf-8f97-4251-9a74-a90016b0af0d"
home="urn:oid:26.489.22">
                <Slot name="$XDSDocumentEntryPatientId" slotType="?">
                    <ValueList>
```


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```
                        <Value>'4321^^^&amp;amp;26.489.22&amp;amp;ISO'</Value>
                    </ValueList>
                </Slot>
                <Slot
name="$XDSDocumentEntryStatus" slotType="?">
                    <ValueList>
                        <Value>('urn:oasis:names:tc:ebxml-regrep:StatusType:Approved')</Value>
                    </ValueList>
                </Slot>
                <Slot
name="$XDSDocumentEntryClassCode">
                    <ValueList>
                        <Value>34133-9</Value>
                    </ValueList>
                </Slot>
                <Slot name="$XDSDocumentEntryClassCodeScheme">
                    <ValueList>
                        <Value>2.16.840.1.113883.6.1</Value>
                    </ValueList>
                </Slot>
            </AdhocQuery>
        </ns3:AdhocQueryRequest>
    </soap:Body>
</soap:Envelope>
```

C.8 XGO Response

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
    <soap:Body>
        <ns3:AdhocQueryResponse xmlns="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
xmlns:ns2="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0" xmlns:ns3="urn:oasis:names:tc:ebxml-regrep:xsd:query:3.0"
xmlns:ns4="urn:oasis:names:tc:ebxml-regrep:xsd:lcm:3.0"
status="urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Success">
            <RegistryObjectList>
                <ExtrinsicObject mimeType="text/xml" isOpaque="false" objectType="urn:uuid:7edca82f-
054d-47f2-a032-9b2a5b5186c1" status="Active" id="urn:uuid:02243530-22f8-4efe-889e-e6b42717933b"
home="26.489.22">
                    <Slot name="creationTime">
                        <ValueList>
                            <Value>20140923203321</Value>
                        </ValueList>
                    </Slot>
                    <Slot name="intendedRecipient">
                        <ValueList>
                            <Value>John Jones</Value>
                        </ValueList>
                    </Slot>
                    <Slot name="languageCode">
                        <ValueList>
                            <Value>en-US</Value>
                        </ValueList>
                    </Slot>
                    <Slot name="legalAuthenticator">
                        <ValueList>
                            <Value>legal</Value>
                        </ValueList>
                    </Slot>
                    <Slot name="serviceStartTime">
                        <ValueList>
                            <Value>20140923203321</Value>
```


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```
                    </ValueList>
                </Slot>
                <Slot name="serviceStopTime">
                    <ValueList>
                        <Value>20160131170000</Value>
                    </ValueList>
                </Slot>
                <Slot name="sourcePatientId">
                    <ValueList>
                        <Value>4512454^^^&amp;26.489.22&amp;ISO</Value>
                    </ValueList>
                </Slot>
                <Slot name="sourcePatientInfo">
                    <ValueList>
                        <Value>PID-3|pid1^^^domain</Value>
                        <Value>PID-
5|Lastname^Firstname^^^</Value>
                        <Value>PID-7|19801010</Value>
                        <Value>PID-8|F</Value>
                        <Value>PID-11|Street^^City^State^Zip^Country</Value>
                    </ValueList>
                </Slot>
                <Slot name="URI">
                    <ValueList>
                        <Value>1.5563.5150</Value>
                    </ValueList>
                </Slot>
                <Slot name="repositoryUniqueId">
                    <ValueList>
                        <Value>26.489.22</Value>
                    </ValueList>
                </Slot>
                <Name>
                    <LocalizedString
value="EdgeSim Test Document"/>
                </Name>
                <Description>
                    <LocalizedString value="Comments..."/>
                </Description>
                <Classification classificationScheme="urn:uuid:93606bcf-9494-43ec-
9b4e-a7748d1a838d" classifiedObject="urn:uuid:02243530-22f8-4efe-889e-e6b42717933b" nodeRepresentation=""
id="">
                    <Slot name="authorPerson">
                        <ValueList>
                            <Value>EdgeSim</Value>
                        </ValueList>
                    </Slot>
                    <Slot name="authorInstitution">
                        <ValueList>
                            <Value>Mihin EHealth Exchange</Value>
                        </ValueList>
                    </Slot>
                    <Slot name="authorRole">
                        <ValueList>
                            <Value>Primary Care
Provider</Value>
                        </ValueList>
                    </Slot>
                    <Slot name="authorSpecialty">
                        <ValueList>
                            <Value>General</Value>
```


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```
                    </ValueList>
                </Slot>
            </Classification>
            <Classification
classificationScheme="urn:uuid:41a5887f-8865-4c09-adf7-e362475b143a" classifiedObject="urn:uuid:02243530-22f8-
4efe-889e-e6b42717933b" nodeRepresentation="34133-9" id="">
                <Slot name="codingScheme">
                    <ValueList>
                        <Value>Confidential</Value>
                    </ValueList>
                </Slot>
                <Name>
                    <LocalizedString value="Summarization of Episode Note"/>
                </Name>
            </Classification>
            <Classification classificationScheme="urn:uuid:f4f85eac-e6cb-4883-b524-f2705394840f"
classifiedObject="urn:uuid:02243530-22f8-4efe-889e-e6b42717933b"
nodeRepresentation="Confidential" id="">
                <Name>
                    <LocalizedString value="Confidential"/>
                </Name>
            </Classification>
            <Classification classificationScheme="urn:uuid:a09d5840-386c-
46f2-b5ad-9c3699a4309d" classifiedObject="urn:uuid:02243530-22f8-4efe-889e-e6b42717933b"
nodeRepresentation="CDAR2/IHE 1.0" id="">
                <Slot name="codingScheme">
                    <ValueList>
                        <Value>FormatCodeScheme_value</Value>
                    </ValueList>
                </Slot>
                <Name>
                    <LocalizedString value="FormatCodeDisplayName_value"/>
                </Name>
            </Classification>
            <Classification
classificationScheme="urn:uuid:f33fb8ac-18af-42cc-ae0e-ed0b0bdb91e1" classifiedObject="urn:uuid:02243530-22f8-
4efe-889e-e6b42717933b" nodeRepresentation="UTF-8" id="">
                <Slot
name="codingScheme">
                    <ValueList>
                        <Value>UTF-8</Value>
                    </ValueList>
                </Slot>
                <Name>
                    <LocalizedString value="UTF-8"/>
                </Name>
            </Classification>
            <Classification
classificationScheme="urn:uuid:cccf5598-8b07-4b77-a05e-ae952c785ead" classifiedObject="urn:uuid:02243530-22f8-
4efe-889e-e6b42717933b" nodeRepresentation="test" id="">
                <Slot
name="codingScheme">
                    <ValueList>
                        <Value>test</Value>
                    </ValueList>
                </Slot>
                <Name>
                    <LocalizedString value="test"/>
                </Name>
            </Classification>
            <Classification
```


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```
classificationScheme="urn:uuid:f0306f51-975f-434e-a61c-c59651d33983" classifiedObject="urn:uuid:02243530-22f8-4efe-889e-e6b42717933b" nodeRepresentation="test" id="">
                                <Slot name="codingScheme">
                                    <ValueList>
                                        <Value>test</Value>
                                    </ValueList>
                                </Slot>
                                <Name>
                                    <LocalizedString value="test"/>
                                </Name>
                            </Classification>
                            <ExternalIdentifier registryObject="urn:uuid:02243530-22f8-4efe-889e-e6b42717933b" identificationScheme="urn:uuid:2e82c1f6-a085-4c72-9da3-8640a32e42ab" value="1.5563.5150" id="">
                                <Name>
                                    <LocalizedString value="XDSDocumentEntry.uniqueId"/>
                                </Name>
                            </ExternalIdentifier>
                            <ExternalIdentifier registryObject="urn:uuid:02243530-22f8-4efe-889e-e6b42717933b" identificationScheme="urn:uuid:58a6f841-87b3-4a3e-92fd-a8ffeff98427" value="4512454^^^&amp;amp;26.489.22&amp;amp;ISO" id="">
                                <Name>
                                    <LocalizedString value="XDSDocumentEntry.patientId"/>
                                </Name>
                            </ExternalIdentifier>
                        </ExtrinsicObject>
                    </RegistryObjectList>
                </ns3:AdhocQueryResponse>
            </soap:Body>
        </soap:Envelope>
```


C.9 NwHIN Retrieve Documents Request


```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
    <soap:Header>
        <wsse:Security xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd" xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd" soap:mustUnderstand="true">
            <saml2:Assertion xmlns:saml2="urn:oasis:names:tc:SAML:2.0:assertion" xmlns:xs="http://www.w3.org/2001/XMLSchema" ID="_501da60966a24a95af3cecbd7844157a" IssueInstant="2014-02-27T19:11:52.051Z" Version="2.0">
                <saml2:Issuer Format="urn:oasis:names:tc:SAML:1.1:nameid-format:X509SubjectName">CN=connectgw.mihin.org,OU=mihin,O=mihin,L=East Lansing,ST=MI,C=US</saml2:Issuer>
                <ds:Signature xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
                    <ds:SignedInfo>
                        <ds:CanonicalizationMethod Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#"/>
                        <ds:SignatureMethod Algorithm="http://www.w3.org/2000/09/xmldsig#rsa-sha1"/>
                        <ds:Reference URI="#_501da60966a24a95af3cecbd7844157a">
                            <ds:Transforms>
                                <ds:Transform Algorithm="http://www.w3.org/2000/09/xmldsig#enveloped-signature"/>
                                <ds:Transform Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#">
                                    <ec:InclusiveNamespaces xmlns:ec="http://www.w3.org/2001/10/xml-exc-c14n#" PrefixList="xs"/>
                                </ds:Transform>
                            </ds:Transforms>
                            <ds:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldsig#sha1"/>
                            <ds:DigestValue>267L6UaKCPiUqpgNaDO5pJw0Y9I=</ds:DigestValue>
```


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```
                    </ds:Reference>
                </ds:SignedInfo>

    <ds:SignatureValue>RLroNtcu6FzyXw+EkOvi+mRG2raelQbcrDEvhD/JLvTnlD/I88yJnBzenuTnPP3Hz3txAvNn0lnPV
UNwnDjREJE0ybK6bO7S83An+EDD+TU7dG+vtArvvbN3bRuwtqNI/RcxnNLaDjTUghOFfxb0Zac+NR830tvpaz/u9VC/KUiJl
uxA/Agu3M3YeqaCpNzqzP3gm5EuUPqJUuXrYfW7D6y7/GU4dNUvHyMVNtCjORe168EaTHV+Anwzi1jRqZXugMgXiGorAV
kTRiL86OI2ec3GpznY9GImLho6sQ1W/LO2HMiUscrbF+9lS9NnErCfa9ZehMjbqRU3KXuT7BZK5g==
                    </ds:SignatureValue>
                    <ds:KeyInfo>
                        <ds:KeyValue>
                            <ds:RSAKeyValue>

    <ds:Modulus>i/o8BHNMv0vfqyqELbHtlvEZtHmyhTObHy2Y/sBG/8uK0rwlL4s4FF6I9cc0iDLv8aw9BvRSAnqo
zmvdSWFIIJ0vJIkq7H1LMQrR115C2lRYi7xrHR/sgeM3Mkc28ICrpR+9pzJUJ0yWUehY9a5XPSji
jBpBsBYBZV4co6p8y0bKHVyprYIQ9xPjMjODyjoIkKBnAKetjrcoNrbH9Gs0UIt8B3CMMLuBFTEX
PGMlgk9EcQXUZ2zk23x2mK6u8q7DYJuv75xYpJ5PVJQjfpKvkBXrCVWdyypVMLsNm4oOX/GkJpHQ
yzekLwGkUOWIePDXHeJwuK88v3z4voc2sC2pZw==</ds:Modulus>
                            <ds:Exponent>AQAB</ds:Exponent>
                        </ds:RSAKeyValue>
                    </ds:KeyValue>
                </ds:KeyInfo>
            </ds:Signature>
            <saml2:Subject>
                <saml2:NameID Format="urn:oasis:names:tc:SAML:1.1:nameid-
format:X509SubjectName">UID=kskagerb</saml2:NameID>
                <saml2:SubjectConfirmation Method="urn:oasis:names:tc:SAML:2.0:cm:holder-of-key">
                    <saml2:SubjectConfirmationData>
                        <ds:KeyInfo xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
                            <ds:KeyValue>
                                <ds:RSAKeyValue>

    <ds:Modulus>i/o8BHNMv0vfqyqELbHtlvEZtHmyhTObHy2Y/sBG/8uK0rwlL4s4FF6I9cc0iDLv8aw9BvRSAnqo
zmvdSWFIIJ0vJIkq7H1LMQrR115C2lRYi7xrHR/sgeM3Mkc28ICrpR+9pzJUJ0yWUehY9a5XPSji
jBpBsBYBZV4co6p8y0bKHVyprYIQ9xPjMjODyjoIkKBnAKetjrcoNrbH9Gs0UIt8B3CMMLuBFTEX
PGMlgk9EcQXUZ2zk23x2mK6u8q7DYJuv75xYpJ5PVJQjfpKvkBXrCVWdyypVMLsNm4oOX/GkJpHQ
yzekLwGkUOWIePDXHeJwuK88v3z4voc2sC2pZw==</ds:Modulus>
                                    <ds:Exponent>AQAB</ds:Exponent>
                                </ds:RSAKeyValue>
                            </ds:KeyValue>
                        </ds:KeyInfo>
                    </saml2:SubjectConfirmationData>
                </saml2:SubjectConfirmation>
            </saml2:Subject>
            <saml2:AuthnStatement AuthnInstant="2009-04-16T13:15:39.000Z" SessionIndex="987">
                <saml2:SubjectLocality Address="158.147.185.168" DNSName="158.147.185.168"/>
                <saml2:AuthnContext>

    <saml2:AuthnContextClassRef>urn:oasis:names:tc:SAML:2.0:ac:classes:X509</saml2:AuthnContextClassRef>
                </saml2:AuthnContext>
            </saml2:AuthnStatement>
            <saml2:AttributeStatement>
                <saml2:Attribute Name="urn:oasis:names:tc:xspa:1.0:subject:subject-id"
NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-format:uri">
                    <saml2:AttributeValue
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="xs:string">Karl S
Skagerberg</saml2:AttributeValue>
                </saml2:Attribute>
            </saml2:AttributeStatement>
            <saml2:AttributeStatement>
                <saml2:Attribute Name="urn:oasis:names:tc:xspa:1.0:subject:organization"
NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-format:uri">
```


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<saml2:AttributeValue
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="xs:string">2.16.840.1.113883.3.1481.2.4.1</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>
<saml2:AttributeStatement>
<saml2:Attribute Name="urn:oasis:names:tc:xspa:1.0:subject:organization-id"
NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-format:uri">
<saml2:AttributeValue
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="xs:string">2.16.840.1.113883.3.1481.2.4.1</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>
<saml2:AttributeStatement>
<saml2:Attribute Name="urn:nhin:names:saml:homeCommunityId"
NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-format:uri">
<saml2:AttributeValue
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="xs:string">2.16.840.1.113883.3.1481.2.4.1</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>
<saml2:AttributeStatement>
<saml2:Attribute Name="urn:oasis:names:tc:xacml:2.0:resource:resource-id"
NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-format:uri">
<saml2:AttributeValue
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="xs:string">500000000^^^&1.1&ISO</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>
<saml2:AttributeStatement>
<saml2:Attribute Name="urn:oasis:names:tc:xacml:2.0:subject:role"
NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-format:uri">
<saml2:AttributeValue>
<hl7:Role
xmlns:hl7="urn:hl7-org:v3" code="307969004" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED_CT"
displayName="Public Health" type="hl7:CE"/>
</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>
<saml2:AttributeStatement>
<saml2:Attribute Name="urn:oasis:names:tc:xspa:1.0:subject:purposeofuse"
NameFormat="urn:oasis:names:tc:SAML:2.0:attrname-format:uri">
<saml2:AttributeValue>
<hl7:PurposeOfUse xmlns:hl7="urn:hl7-org:v3" code="PUBLICHEALTH"
codeSystem="2.16.840.1.113883.3.18.7.1" codeSystemName="nhin-purpose" displayName="Use or disclosure of
Psychotherapy Notes"/>
</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>
<saml2:AuthzDecisionStatement Decision="Permit"
Resource="https://158.147.185.168:8181/SamlReceiveService/SamlProcessWS">
<saml2:Action Namespace="urn:oasis:names:tc:SAML:1.0:action:rwedc">Execute</saml2:Action>
<saml2:Evidence>
<saml2:Assertion xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
ID="40df7c0a-ff3e-4b26-baeb-f2910f6d05a9" IssueInstant="2009-04-
16T13:10:39.093Z" Version="2.0" xsi:type="saml2:AssertionType">
<saml2:Issuer Format="urn:oasis:names:tc:SAML:1.1:nameid-
format:X509SubjectName">CN=SAML User,OU=Harris,O=HITS,L=Melbourne,ST=FL,C=US</saml2:Issuer>
<saml2:Subject>
<saml2:NameID Format="urn:oasis:names:tc:SAML:1.1:nameid-
format:X509SubjectName">UID=kskagerb</saml2:NameID>

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<saml2:SubjectConfirmation
Method="urn:oasis:names:tc:SAML:2.0:cm:holder-of-key">
<saml2:SubjectConfirmationData>
<ds:KeyInfo xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
<ds:KeyValue>
<ds:RSAKeyValue>

<ds:Modulus>i/o8BHNMv0vfqyqELbHtlvEZtHmyhTObHy2Y/sBG/8uK0rwlL4s4FF6I9cc0iDLv8aw9BvRSAnqo
zmvdSWFIIJ0vJIkq7H1LMQrR115C2lRYi7xrHR/sgeM3Mkc28ICrpR+9pzJUJ0yWUehY9a5XPSji
jBpBsBYBZV4co6p8y0bKHVyprYIQ9xPjMjODyjoIkKBnAKetjrcoNrbH9Gs0UIt8B3CMMLuBFTEX
PGMlgk9EcQXUZ2zk23x2mK6u8q7DYJuv75xYpJ5PVJQjfpKvkBXrCVWdyypVMLsNm4oOX/GkJpHQ
yzekLwGkUOWIePDXHeJwuK88v3z4voc2sC2pZw==</ds:Modulus>
<ds:Exponent>AQAB</ds:Exponent>
</ds:RSAKeyValue>
</ds:KeyValue>
</ds:KeyInfo>
</saml2:SubjectConfirmationData>
</saml2:SubjectConfirmation>
</saml2:Subject>
<saml2:Conditions NotBefore="2009-04-16T13:10:39.093Z" NotOnOrAfter="2014-02-
27T19:16:52.056Z"/>
<saml2:AttributeStatement>
<saml2:Attribute
Name="AccessConsentPolicy" NameFormat="http://www.hhs.gov/healthit/nhin">
<saml2:AttributeValue xsi:type="xs:string">Claim-Ref-
1234</saml2:AttributeValue>
</saml2:Attribute>
<saml2:Attribute Name="InstanceAccessConsentPolicy"
NameFormat="http://www.hhs.gov/healthit/nhin">
<saml2:AttributeValue xsi:type="xs:string">Claim-Instance-
1</saml2:AttributeValue>
</saml2:Attribute>
</saml2:AttributeStatement>
</saml2:Assertion>
</saml2:Evidence>
</saml2:AuthzDecisionStatement>
</saml2:Assertion>
<ds:Signature xmlns:ds="http://www.w3.org/2000/09/xmldsig#" Id="SIG-94">
<ds:SignedInfo>
<ds:CanonicalizationMethod Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#">
<ec:InclusiveNamespaces xmlns:ec="http://www.w3.org/2001/10/xml-exc-
c14n#" PrefixList="soap"/>
</ds:CanonicalizationMethod>
<ds:SignatureMethod Algorithm="http://www.w3.org/2000/09/xmldsig#rsa-sha1"/>
<ds:Reference URI="#TS-93">
<ds:Transforms>
<ds:Transform Algorithm="http://www.w3.org/2001/10/xml-exc-c14n#">
<ec:InclusiveNamespaces xmlns:ec="http://www.w3.org/2001/10/xml-exc-c14n#"
PrefixList="wsse soap"/>
</ds:Transform>
</ds:Transforms>
<ds:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldsig#sha1"/>
<ds:DigestValue>KFO+D3HIeJK5cT4XF1XVLmTsuTw=</ds:DigestValue>
</ds:Reference>
</ds:SignedInfo>

<ds:SignatureValue>ehYtBMWMmseoCEpP31BqXCVfLZwq71qChE9kqNiHoJTOdXoWUKiUNJg0MNUJtfWP3wsu+iz3
Tc4Q7LC18s/nJ8CnYDQC6IRxAWCplNrE9hHa1HwuCnkbKMcB/wkJFx/oSnj6BMhmehM+SXKHkq7C7Aq+ShZ3sxGA5ns3
C+jhnYAFpGro18iskuq5cBU40UINtPk5JH589BPOTGSK1Ovuzt7sdx8EOJ9bFXdchVT0PEL85Di1jEfxihPcSFWaxX4u+wGYe
QgEy+1R0Ar+0c/gMeiIiQ8bilskEu3aU34n7KR957iD9Rtv+keWdsEV+t1l2f4A0HTtbCfVHtvySybTdA==
</ds:SignatureValue>

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```
                    <ds:KeyInfo Id="KeyId-E4D1C77DCE8157D95A13935283120933">
                        <wsse:SecurityTokenReference xmlns:wsse11="http://docs.oasis-open.org/wss/oasis-wss-
wssecurity-secext-1.1.xsd" wsse11:TokenType="http://docs.oasis-open.org/wss/oasis-wss-saml-token-profile-
1.1#SAMLV2.0" wsu:Id="STRId-E4D1C77DCE8157D95A13935283120934">
                            <wsse:KeyIdentifier
ValueType="http://docs.oasis-open.org/wss/oasis-wss-saml-token-profile-
1.1#SAMLID">_501da60966a24a95af3cecbd7844157a</wsse:KeyIdentifier>
                        </wsse:SecurityTokenReference>
                    </ds:KeyInfo>
                </ds:Signature>
                <wsu:Timestamp wsu:Id="TS-93">
                    <wsu:Created>2014-02-27T19:11:52.048Z</wsu:Created>
                    <wsu:Expires>2014-02-27T20:11:52.048Z</wsu:Expires>
                </wsu:Timestamp>
            </wsse:Security>
            <Action xmlns="http://www.w3.org/2005/08/addressing">urn:ihe:iti:2007:CrossGatewayRetrieve</Action>
            <MessageID xmlns="http://www.w3.org/2005/08/addressing">urn:uuid:5fa16d63-f157-4e1b-a5a6-
80f9ef2fb758</MessageID>
            <To
xmlns="http://www.w3.org/2005/08/addressing">https://172.16.13.80:9191/Gateway/DocumentRetrieve/2_0/NhinS
ervice/RespondingGateway_Retrieve_Service/DocRetrieve</To>
            <ReplyTo xmlns="http://www.w3.org/2005/08/addressing">
                <Address>http://www.w3.org/2005/08/addressing/anonymous</Address>
            </ReplyTo>
        </soap:Header>
        <soap:Body>
            <RetrieveDocumentSetRequest
xmlns="urn:ihe:iti:xds-b:2007" xmlns:ns2="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
xmlns:ns3="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0" xmlns:ns4="urn:oasis:names:tc:ebxml-regrep:xsd:query:3.0"
xmlns:ns5="urn:oasis:names:tc:ebxml-regrep:xsd:lcm:3.0">
                <DocumentRequest>
                    <HomeCommunityId>urn:oid:26.489.24</HomeCommunityId>
                    <RepositoryUniqueId>1.3.9.16</RepositoryUniqueId>
                    <DocumentUniqueId>1234.1234</DocumentUniqueId>
                </DocumentRequest>
            </RetrieveDocumentSetRequest>
        </soap:Body>
</soap:Envelope>
```


C.10 NwHIN Retrieve Documents Response


```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
    <soap:Header>
        <Action
xmlns="http://www.w3.org/2005/08/addressing">urn:ihe:iti:2007:CrossGatewayRetrieveResponse</Action>
        <MessageID xmlns="http://www.w3.org/2005/08/addressing">urn:uuid:72ac0466-9a1d-4dc2-a18f-
ca5caf79e8d3</MessageID>
        <To
xmlns="http://www.w3.org/2005/08/addressing">http://www.w3.org/2005/08/addressing/anonymous</To>
        <RelatesTo xmlns="http://www.w3.org/2005/08/addressing">urn:uuid:5fa16d63-f157-4e1b-a5a6-
80f9ef2fb758</RelatesTo>
        <wsse:Security xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-
1.0.xsd" xmlns:wsu="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd" soap:mustUnderstand="true">
            <wsu:Timestamp wsu:Id="TS-75">
                <wsu:Created>2014-02-27T19:11:53.145Z</wsu:Created>
                <wsu:Expires>2014-02-27T19:16:53.145Z</wsu:Expires>
            </wsu:Timestamp>
            <wsse11:SignatureConfirmation xmlns:wsse11="http://docs.oasis-open.org/wss/oasis-wss-wssecurity-
secext-1.1.xsd"
```


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Value="ehYtBMWMmseoCEpP31BqXCVfLZwq71qChE9kqNiHoJTOdXoWUKiUNJg0MNUJtfWP3wsu+iz3Tc4Q7LC18s/nJ8C
nYDQC6IRxAWCplNrE9hHa1HwuCnkbKMcB/wkJFx/oSnj6BMhmehM+SXKHkq7C7Aq+ShZ3sxGA5ns3C+jhnYAFpGro18is
kuq5cBU40UINtPk5JH589BPOTGSK1Ovuzt7sdx8EOJ9bFXdchVT0PEL85Di1jEfxihPcSFWaxX4u+wGYeQgEy+1R0Ar+0c/g
MeiIiQ8bilskEu3aU34n7KR957iD9Rtv+keWdsEV+t1l2f4A0HTtbCfVHtvySybTdA==" wsu:Id="SC-76"/>
</wsse:Security>
</soap:Header>
<soap:Body>
<RetrieveDocumentSetResponse xmlns="urn:ihe:iti:xds-b:2007" xmlns:ns2="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0" xmlns:ns3="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0" xmlns:ns4="urn:oasis:names:tc:ebxml-regrep:xsd:query:3.0" xmlns:ns5="urn:oasis:names:tc:ebxml-regrep:xsd:lcm:3.0">
<ns3:RegistryResponse status="urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Success"/>
<DocumentResponse>
<HomeCommunityId>urn:oid:26.489.24</HomeCommunityId>
<RepositoryUniqueId>1.3.9.16</RepositoryUniqueId>
<DocumentUniqueId>1234.1234</DocumentUniqueId>
<mimeType>text/xml</mimeType>
<Document>
<xop:Include xmlns:xop="http://www.w3.org/2004/08/xop/include" href="cid:3329721f-4f22-4a66-a74e-0ac2dd81197b-2@urn%3Aihe%3Aiti%3Axds-b%3A2007"/>
</Document>
</DocumentResponse>
</RetrieveDocumentSetResponse>
</soap:Body>
</soap:Envelope>
--uuid:b76c5c07-c96c-4ef6-a6cf-31fd6dd5e5f6
Content-Type: application/xml
Content-Transfer-Encoding: binary
Content-ID: <3329721f-4f22-4a66-a74e-0ac2dd81197b-2@urn:ihe:iti:xds-b:2007>
Content-Disposition: attachment;name="file:file"

C.11 XGR Request

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
    <soap:Header>
        <MessageID xmlns="http://www.w3.org/2005/08/addressing">6ef57073-576a-48d8-a88f-2f43199dc29d</MessageID>
        <home xmlns="http://mihin.org/home">26.489.22</home>
    </soap:Header>
    <soap:Body>
        <RetrieveDocumentSetRequest xmlns="urn:ihe:iti:xds-b:2007" xmlns:ns2="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0" xmlns:ns3="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0" xmlns:ns4="urn:oasis:names:tc:ebxml-regrep:xsd:query:3.0" xmlns:ns5="urn:oasis:names:tc:ebxml-regrep:xsd:lcm:3.0">
            <DocumentRequest>
                <HomeCommunityId>26.489.22</HomeCommunityId>
                <RepositoryUniqueId>26.489.22</RepositoryUniqueId>
                <DocumentUniqueId>1234</DocumentUniqueId>
            </DocumentRequest>
        </RetrieveDocumentSetRequest>
    </soap:Body>
</soap:Envelope>
```

C.12 XGR Response

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
    <soap:Body>
        <RetrieveDocumentSetResponse xmlns="urn:ihe:iti:xds-b:2007"
```


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```
xmlns:ns2="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0" xmlns:ns3="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0"
xmlns:ns4="urn:oasis:names:tc:ebxml-regrep:xsd:query:3.0"
xmlns:ns5="urn:oasis:names:tc:ebxml-regrep:xsd:lcm:3.0">
                <ns3:RegistryResponse status="urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Success"/>
                <DocumentResponse>
                    <HomeCommunityId>26.489.22</HomeCommunityId>
                    <RepositoryUniqueId>26.489.22</RepositoryUniqueId>
                    <DocumentUniqueId>1234</DocumentUniqueId>
                    <mimeType>text/xml</mimeType>

    <Document>CQk8IS0tIFByb3ZpZGVyIFRlbXBsYXRlIElkICAtLT4NCgkJCQkJCQkJPHRlbXBsYXRlSWQ==</Document>
                </DocumentResponse>
            </RetrieveDocumentSetResponse>
    </soap:Body>
</soap:Envelope>
```


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