Interoperability Services Guide

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TRUVEN
HEALTH ANALYTICS

Contents

Introduction

Objective

This document provides a technical overview of the West Virginia Health Information Network (WVHIN) and the standards-based specifications regarding connectivity to WVHIN. First, this guide is intended to serve as an introduction to the technical services, implementation methodology and national standards employed at the WVHIN. These services establish a highly secure and standards-based platform that will serve as the backbone for health information exchange in the state of West Virginia. Second, this guide will detail the national standards and technical requirements that are a requirement for WVHIN Participants.

Intended Audience

This document is intended for prospective WVHIN Participants who are seeking an introduction to the technical services provided by WVHIN and an outline of the work process required to take part in the Exchange[1]. It is intended for technical users familiar with healthcare information technology standards such as those promulgated by Integrating the Healthcare Enterprise (IHE), Healthcare Information Technology Standards Panel (HITSP) and the Office of the National Coordinator (ONC).

WVHIN Standards Overview

A Foundation Based on Standards

WVHIN is built using open technology standards that fully comply with the specifications established by the Integrating the Healthcare Enterprise (IHE), the eHealth Exchange (formerly known as the Nationwide Health Information Network, or NwHIN) and the Healthcare Information Technology Standards Panel (HITSP).

IHE

IHE is an initiative by healthcare professionals and industry to improve the way computer systems in healthcare share information. IHE promotes the coordinated use of established standards such as DICOM and HL7 to address specific clinical needs in support of optimal patient care. Systems developed in accordance with IHE communicate better with one another, are easier to implement, and enable care providers to use information more effectively.

eHealth Exchange

eHealth Exchange is a set of standards, services, and policies that enable secure health information exchange over the Internet. eHealth Exchange will provide a foundation for the exchange of health IT across diverse entities, within communities, and across the country.

[1] In the document the terms WVHIN and "the Exchange" are used interchangeably. Both refer to the West Virginia Health Information Network.

HITSP

HITSP is a cooperative partnership between the public and private sectors. The Panel was formed for the purpose of harmonizing and integrating standards that will meet clinical and business needs for sharing information among organizations and systems.

More information on all of the above standards is available in the appendix section of this document.

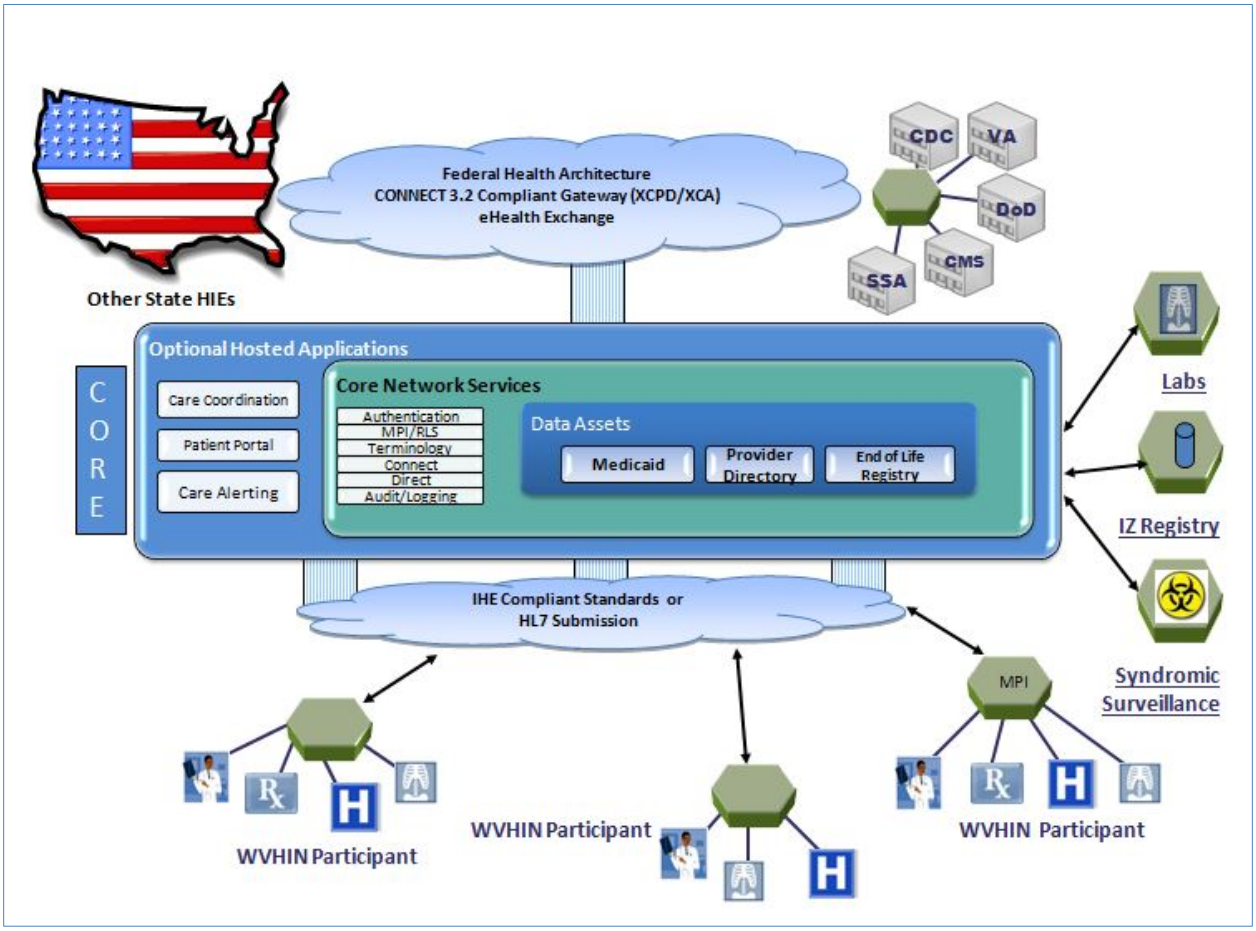
WVHIN Technology Overview

WVHIN is built on a commercial off-the-shelf software (COTS) technology stack that uses a hybrid, service-oriented architecture (SOA) to deliver a standards-compliant enterprise service infrastructure to deploy and operate a statewide HIE.

Key items of note in this architecture are its flexibility and compliance with eHealth Exchange and ARRA/HITECH Meaningful Use Final Rule standards:

- WVHIN is designed as a hybrid model where patient clinical records can be stored in repositories that are physically located adjacent to the source or could be stored in a WVHIN hosted repository that's offered as an option to Participants.
- WVHIN provides a statewide Master Patient Index (MPI) service.
- WVHIN also implements a Record Locator Service (RLS), which serve as a "white pages" for the state providing pointers to clinical information about a given patient.
- WVHIN provides the Service Access Layer, which provides a trusted uniform transport and security infrastructure based on web services following IHE standards. These standards (i.e. IHE ATNA) describe the security environment (user identification, authentication, authorization, and access control), audit requirements, and transport-level security (TLS) requirements to ensure each network node complies with the guiding principles of WVHIN for security and privacy.

WVHIN Services and Standards-based Interoperability



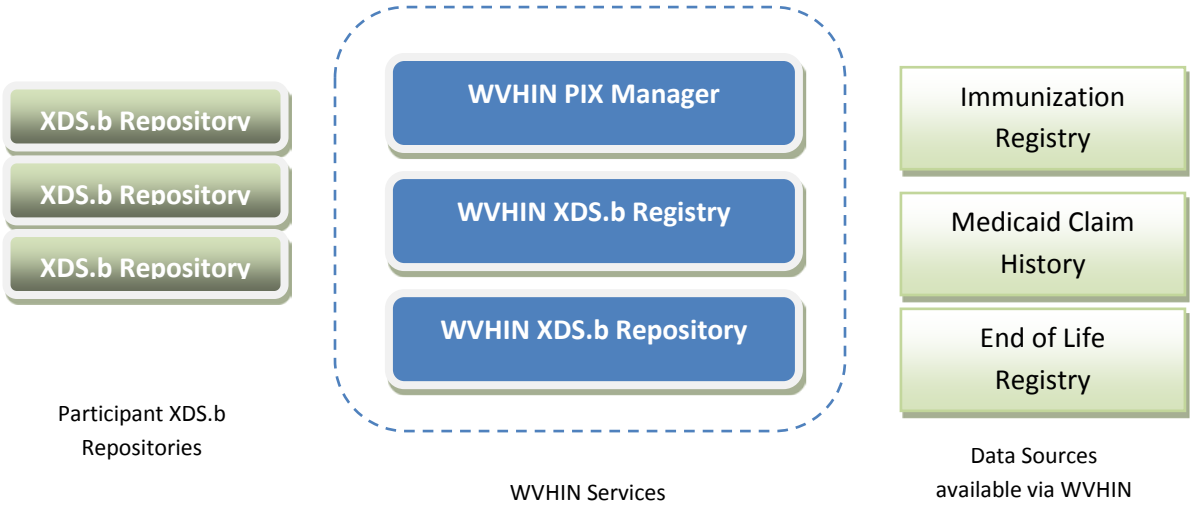
The figure above shows WVHIN Services and the interoperability standards used by healthcare providers to connect to the exchange. It also illustrates the high-level architecture of the WVHIN. The WVHIN demonstrates compliance with national interoperability standards, which facilitates connection to eHealth Exchange and to other states' exchanges. Similarly, the HITSP and IHE standards for content that are based on the Clinical Document Architecture (CDA), the IHE standards for connectivity like Patient Identifier Cross Reference (PIX), Cross Enterprise Document Sharing (XDS.b), and Audit Trail and Node Authentication (ATNA) allow providers from disparate and diverse healthcare settings within the state to connect to WVHIN and effectively and securely exchange patient information.

There are core services, data assets and other applications that are available to Participants in the Exchange. The HITSP/IHE-promoted standards apply to intrastate Participants of any kind where PIX, XDS.b, or CDA/CCD play a major role. Participants in the WVHIN can leverage the connectivity to Public Health as shown on the right. Bi-directional flow with the Immunization Registry and Electronic Submission of Labs to Public Health are some of the services that can be available based on the level of participation in the Exchange.

The WVHIN has the ability to participate in inter-state exchange though the use of standards such as a Cross-Community Patient Discovery (XCPD) gateway that allows for patient discovery and a Cross-Community Access (XCA) gateway that manages exchange of patient clinical information with other states or federal entities. This service is available to Participants that wish to participate at an inter-state level.

Resources Provided to Participants by the WVHIN

The WVHIN implements a set of IHE profiles and eHealth Exchange standards compliant services to facilitate the flow of clinical data between Participants. These network-level services are intended to support the management of clinical data by providing secure patient identity management and record location for all patients in the state of West Virginia.



WVHIN PIX Management Service

The WVHIN PIX Management service provides identity management services to WVHIN Participants. Participants will send demographic information for the patients they manage to the WVHIN PIX Manager which implements a record-linking algorithm to link together patient records across the state.

The WVHIN PIX Management Service implements the PIX (Patient Identifier Cross-Referencing) IHE integration profile. WVHIN supports PIX version 2 and PIX version 3. Profile and transactions for both versions are listed below.

Profile	Transactions
PIX v2	ITI-8 (Patient Identity Feed)
PIX v2	ITI-9 (PIX Query)

PIX v2	ITI-10 PIX Update Notification
Profile	**Transactions**
PIX v3	ITI-44 (Patient Identity Feed)
PIX v3	ITI-45 (PIX Query)
PIX v3	ITI-46 PIX Update Notification

WVHIN XDS.b Document Registry

The WVHIN provides a statewide XDS.b Document Registry that provides record location services (RLS) for all clinical data available through the WVHIN. Participants will register metadata describing the clinical documents they are making available through their XDS.b Repositories so other Participants can easily obtain a catalog of all clinical data and its managing repository for a particular patient.

The WVHIN Document Registry implements the XDS.b (Cross Enterprise Document Sharing-b) IHE integration profile. Profile and transactions for registering documents is listed below.

Profile	**Transactions**
XDS.b Document Registry	ITI-42 (Register Document Set-b)

As part of the WVHIN connectivity testing, Participants will be provided guidance on certain required metadata values such as the correct PIX namespace, Repository ID (to avoid conflicts across Participants), Source ID root object identifier (OID)[2], and Document ID root OID. The required OIDs will be based on the WVHIN Root OID,1.3.6.1.4.1.38674 and each Participant will be provided child OIDs for their organization by the WVHIN when the on-boarding process is initiated.

Each Participant must ensure that each facility within their organization that is connecting to the WVHIN is assigned a different source ID based on the Source ID root OID that is provided. Similarly, the document IDs being submitted by each Participant should be based on the Document ID root OID.

[2] Many standards define certain objects for which unambiguous identification is required. This is achieved by registration. Registration is the assignment of an object identifier (OID) to an object in a way which makes the assignment available to interested parties. Different types of "objects" can be identified by an OID, including but not limited to a country, a company, a project, and ISO standards. OIDs are in use widely in the HL7 standard to specify concepts like identifier namespaces, terminology identification, value sets, conformance profiles, v3 templates.

WVHIN XDS.b Document Repository

As part of the WVHIN interoperability, Participants are required to implement XDS.b repository functionality. Participants can choose to use XDS.b repository functionality that might already be available to them through some internal system, implement their own, or delegate this responsibility to the WVHIN.

The WVHIN provides an optional XDS.b Document Repository to Participants who prefer a hosted XDS.b repository. If Participants choose to use this option, the WVHIN XDS.b Repository will host the clinical documents on the Participants' behalf. Participants will have to provide the clinical documents to the WVHIN repository along with some metadata information. The repository then registers the document with the WVHIN XDS.b Document Registry and handles subsequent requests for document retrieval.

NOTE: this option can only be used if Participants are publishing a stable clinical document. If a Participant chooses to only publish on-demand documents that are created at the time of document request, the registration as well as retrieval requests for those documents is expected to be handled directly by the Participant.

Audit Services

The WVHIN captures audit data for identity management and its core clinical data services. The WVHIN does not provide a centralized store of audit information for clinical data that is managed in locally implemented XDS.b repositories unless Participants route their requests for clinical documents to other Participant repositories via the WVHIN gateway. Participants who are managing locally implemented repositories are required to also implement appropriate audit services, as described by the IHE ATNA Secure Node Integration Profile.

What it means to "Connect to the WVHIN"

Connecting to the WVHIN means that Participants will be able to send and receive health information amongst other WVHIN Participants that have been connected to the WVHIN by leveraging the MPI, RLS, and core network services offered by the WVHIN.

Participants must agree to abide by all policies and procedures that govern the operation of WVHIN (see www.wvhin.org for detailed policy documents).

In order to connect to the WVHIN, Participants' health information systems will need to implement the technical services and interfaces described in the Step-by-Step Overview of WVHIN Data Flow section. In addition, Participants will need to complete the testing steps outlined in the WVHIN Testing Guide in order to demonstrate standards-based exchange capabilities and obtain production credentials and connectivity information.

IHE Transactions and Integration Profiles Required for the WVHIN

IHE is an industry-leading initiative that seeks to facilitate the exchange of information among healthcare systems by creating detailed specifications for specific use cases that optimize established standards.

IHE has published a set of "Integration Profiles" (an amalgamation of existing standards and supplemental usage constraints designed for a specific use case) that define the core interoperability services implemented by WVHIN. Specifically, the following integration profiles must be understood and implemented by Participants:

1. **PIX:** Patient Identifier Cross Reference
    - PIX does matching based on demographics to map patient identifiers from across independent sources for the same patient
2. **XDS.b:** Cross Enterprise Document Sharing
    - XDS.b refers to two major components: an XDS.b Document Registry and an XDS.b Document Repository
    - XDS.b Registry is like a card catalog in a library and maintains metadata about each document that is made known to the registry. It does not store the actual document but contains a link to the actual document in the repository in which it is stored
    - XDS.b Repository is analogous to the stacks in a library where the books are actually stored. The XDS.b Repository is where the actual clinical documents are stored. The WVHIN supports a hybrid model of document repositories. The Participant is responsible for registering its documents to the WVHIN XDS.b Registry
3. **XCA:** Cross Community Access
    - WVHIN utilizes XCA for managing document requests and retrieval
    - An XCA initiating query gateway service is used when a Participant requests documents from the WVHIN
    - An XCA initiating retrieval gateway service is used when a Participant retrieves documents from the WVHIN
4. **ATNA:** Audit Trail and Node Authentication
    - ATNA is the IHE profile that supports the authentication of various Participants in a network and defines rules to ensure that communication is secure
5. **CT:** Consistent Time
    - CT provides consistent definition of date/time enabling time synchronization across multiple systems
6. **BPPC:** Basic Patient Privacy and Consent
    - BPPC provides a mechanism to record patient opt preferences
7. Subset of Content Profiles like the HITSP C32, XPHR, MS, IC, etc.

IHE also tests and verifies compliance with these integration profiles at carefully planned and supervised events called Connectathons®. The WVHIN core network service technologies have been verified for

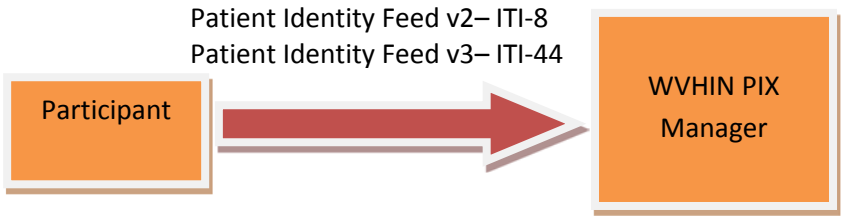
compliance with regards to the relevant integration profiles. Participants can inquire whether vendors supplying interoperability services to their organizations have also been at a recent Connectathon® in order to assess the vendor capabilities.

A Step-by-Step Overview of WVHIN Data Flow

The following section describes the basic data flow in the WVHIN and applies to all Participants.

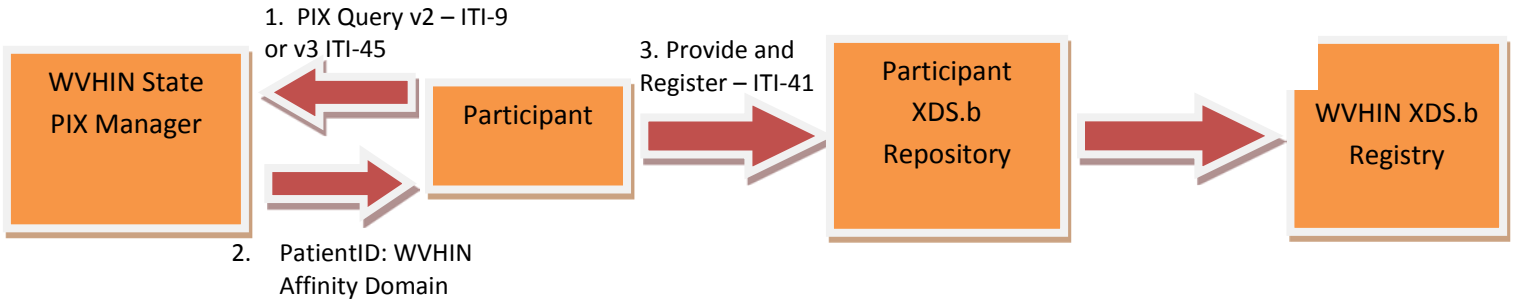
Patient demographic information and clinical data flow through WVHIN and utilize its standards-compliant services in the following manner:

Step 1 – Provide Patient Information



The Participant (the Patient Identity Source) sends a Patient Identify Feed (PIXv2 ITI-8 or PIXv3 ITI-44) transaction to add/update a patient in the domain specified in the transaction. The WVHIN PIX Manager then handles the cross-referencing of patients across multiple domains and ensures that any documents in the Registry will be associated with this patient. Patient information must be provided to and processed by the WVHIN PIX Manager before documents can be registered to the WVHIN XDS.b registry and retrieved by other Participants for that patient.

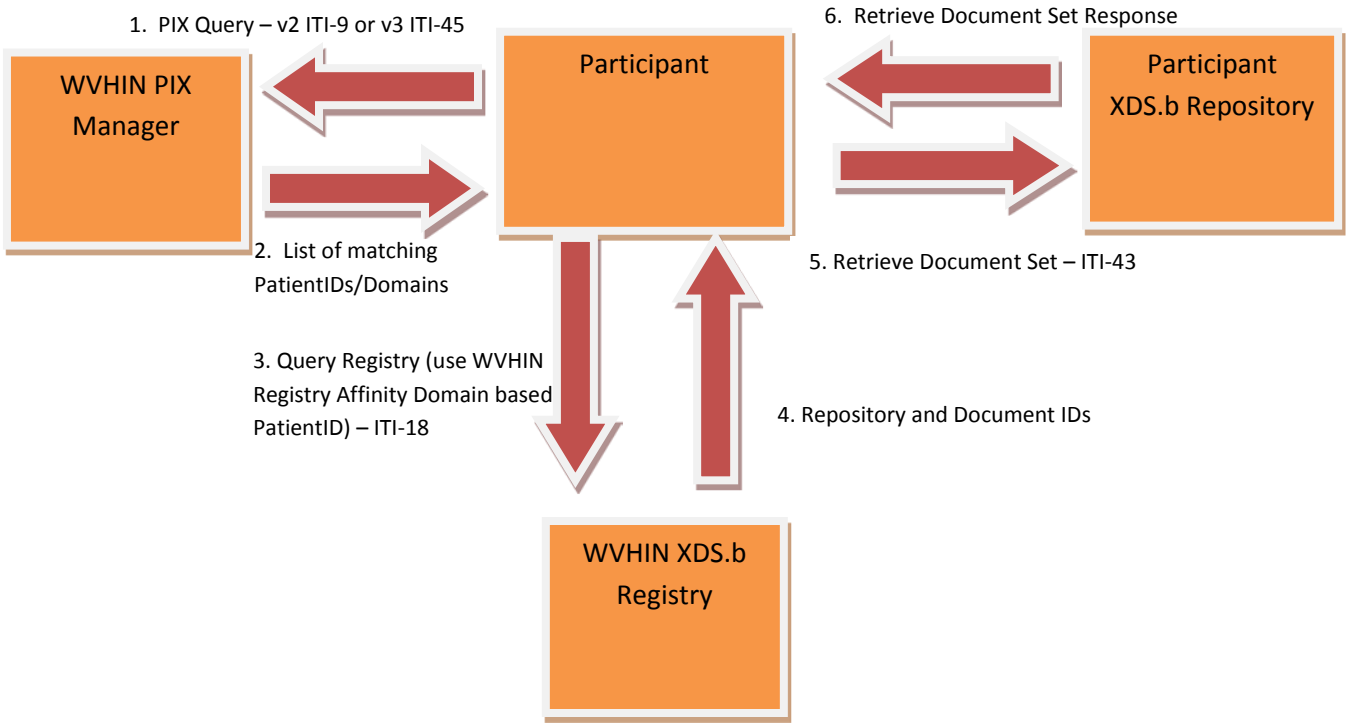
Step 2 – Provide Documents



Now that a patient is in the system, the Participant can begin adding documents associated with that patient. The Participant (the Document Source) will send a Provide and Register Document Set-b (ITI-41) transaction to an XDS.b repository. The XDS.b repository will then send a Register Document transaction (ITI-42) to the WVHIN XDS.b Registry. The results of this transaction are:

- The document(s) in the transaction are then stored in an XDS.b Repository and available for retrieval
- The provided documents are registered with the WVHIN XDS.b Registry

Step 3 – Retrieve Documents



After patient information is provided to the WVHIN PIX Manager and there are documents associated with the patient, the general flow required to retrieve available documents for a patient is as follows:

- Participant sends a PIX Query (v2 ITI-9 or v3 ITI-45) transaction (step 1). The WVHIN PIX Manager responds with a list of cross-referenced matching PatientIDs/domains (step 2). The PatientID associated with the "WVHIN" Registry Affinity Domain should be the ID used for registry transactions.
- Participant queries the WVHIN XDS.b Registry via a Registry Stored Query (ITI-18) transaction (step 3) using the cross-referenced WVHIN Registry Affinity Domain based identifier that was received from the PIX Manager. The cross-referenced WVHIN Registry Affinity Domain based identifier that was received from the PIX Manager is required in the ITI-18 transaction. The XCA initiating query gateway service returns a response containing document information (step 4).
- Using the information contained in the response from the XCA initiating gateway, the Participant sends a request to the WVHIN XCA initiating retrieval gateway using the Retrieve Document Set (ITI-43) transaction (step 5). The WVHIN XCA initiating retrieval gateway will then retrieve the documents from the appropriate repositories on behalf of the requesting Participant (Step 6).

The result of these transactions will be a clinical document set that may contain demographics, problems, procedures, medications, allergies, etc. (depending on the information available on the patient in question). This document set will contain the clinical information from other WVHIN Participants about the patient in question.

WVHIN Data Flow Summary

Participants who choose this connection model to the WVHIN will do so using IHE standards noted throughout this document. Participants will utilize the WVHIN PIX Manager Service and XDS.b Registry Service for Master Patient Index and Record Location functionality. The actual clinical content and its storage are the responsibility of each Participant.

Participants will register the document with the WVHIN XDS.b Registry. Participants can choose to implement their own XDS.b Repository or they can use the XDS.b repository offered by the WVHIN. Participants' chosen XDS.b repository is responsible for responding to document retrieval requests from other Participants in the Exchange for documents registered by that specific repository.

The WVHIN requires that Participants successfully complete the required steps listed in the WVHIN Interoperability Testing Guide. Completion of the steps in the Testing Guide demonstrates that the Participant supports the IHE profiles and the Interoperability workflow described in this document.

The minimum required transactions to be implemented by Participants are listed below.

Minimum required transactions to be implemented by Participants

Integration Profile	Description of Required Functionality
ITI-8: Patient Identity Feed v2 or ITI-44: Patient Identity Feed v3 (as Patient Identity Source)	Participants will send patient demographics to the WVHIN PIX Management Service.
ITI-9: PIX Query v2 or ITI-45 PIX Query v3 (as Consumer)	Participants will query the WVHIN PIX Manager to receive a record location list.
ITI-18: Query Registry (as Consumer)	Participants must query the WVHIN XDS.b Registry for data from other WVHIN Participants. Note that it is required that Participant be able to query for both "stable" as well as "on-demand" documents, since either could be registered by any given document source/repository.
ITI-41: Provide and Register Document Set-b (as Source)	This is required of Participants choosing to leverage the WVHIN XDS.b Repository. Participants must populate the WVHIN XDS.b Repository with clinical data for its patients.
ITI-42: Register Document Set-b (as Repository or Integrated Document Source/Repository)	This is required of Participants choosing to implement their own XDS.b repository. In this case, sending the "Provide and Register" transaction to the right repository is the responsibility of each Participant and that repository must send a Register Document Set-b transaction to the WVHIN XDS.b Registry

	Participants must populate the WVHIN XDS.b Registry with meta data for its patients' clinical documents.
ITI-43: Retrieve Document Set (Repository or Integrated Document Source/Repository)	This is required of participants choosing to implement their own XDS.b Repository. Participants must respond to queries to its XDS.b repository from other WVHIN Participants.
ITI-43: Retrieve Document Set (as Consumer)	Participants must be capable of issuing a Retrieve Document Set transaction in order to retrieve clinical documents from other participant repositories

WVHIN Interoperability Services

Each Participant has to decide what their goals are for connecting to the WVHIN. The WVHIN requires that CDA based documents be registered. The WVHIN also provides services that allow Participants to communicate patient consent and options for retrieving data from eHealth nodes that the WVHIN connects with.

Clinical Document Architecture (CDA) Content Service

The CDA Content service requires Participants to register and publish CDA compliant documents with the WVHIN. CDA content is highly recommended because of the harmonized metadata elements in the document header which allows for efficient document exploration before engaging in more voluminous data exchange. Meaningful Use NwHIN/eHealth Exchange efforts are already driving content standards based on the CDA. A Participant pursuing Meaningful Use should not have difficulty participating at this level.

The WVHIN supports a number of industry standard content formats that can be registered in the WVHIN XDS.b Document Registry. All acceptable document formats are specific implementations of the CDA specification. Document standard content formats that will pass validation and can be registered with the WVHIN include but are not limited to:

1. Consolidated CDA (CCDA) Documents
2. HITSP/C32 v2.x Summary Documents
3. IHE XDS-MS Referral Summary (HITSP/C48)- 2009 (or later)
4. IHE XDS-MS Discharge Summary (HITSP/C48)- 2009 (or later)
5. IHE EDR Emergency Department Referral (HITSP/C84)- 2009 (or later)
6. IHE XPHR Personal Health Record Abstract- 2009 (or later)
7. IHE IC Immunization Content- 2009 (or later)
8. IHE BPPC Basic Patient Privacy Consents- 2009 (or later)
9. IHE XDS-SD Cross Enterprise Sharing of Scanned Documents- 2009 (or later)
10. IHE Laboratory Report- 2008 (or later)
11. IHE Laboratory Report (HITSP/C37)- 2007 (or later)

Additional formats not shown on the above list may be validated and accepted by the WVHIN. Please contact a WVHIN technical resource if additional content specifications are needed. Please indicate what supporting use cases are involved.

Additional information about content standards is included in Appendix B.

The WVHIN requires that Participants have successfully completed the NIST testing process to ensure that compliant CCD/C32 and other document content profiles are supported by the sending system.

BPPC/Record Patient Consent Service

The BPPC/Record Patient Consent service allows Participants to communicate patient consent status from within their EHR system providing maximum convenience for managing patient opt-in and opt-out status. This level enables Participants to communicate patient consent status electronically to the WVHIN.

A Participant choosing this service must implement the IHE Basic Patient Privacy Consent (BPPC) profile. The IHE BPPC profile is used to record and communicate patient "opt-out" and "opt-in" preferences. These preferences are global, triggering a system wide implementation of the patient's desired status. Participants can choose to produce the BPPC document with or without a scanned document part.

The BPPC document registered must be registered as a stable document.

Participants must successfully complete the NIST testing process and complete the WVHIN Interoperability Testing Guide to ensure they can produce a BPPC-compliant document.

eHealth Exchange Service

The eHealth Exchange service allows Participants to leverage the WVHIN connection to the eHealth Exchange and avoid having to on-board to eHealth nodes individually. This service allows Participants to retrieve data from other eHealth Exchange nodes that the WVHIN is connected to.

As a certified member of the eHealth Exchange and in support of inter-state communication, the WVHIN follows the eHealth Exchange specifications and has implemented XCPD Initiating and Responding gateways as well as XCA Initiating and Responding gateways (See **Figure 3** for CSS architecture). This implementation of the XCPD, XCA profiles enables the WVHIN to exchange patient and clinical information with other nodes on the eHealth Exchange that WVHIN has chosen to connect with.

For additional information or a list of eHealth nodes that the WVHIN has connected with, please contact a WVHIN technical resource.

Participant Requirements to Leverage WVHIN eHealth Exchange Connectivity

Integration Profile	Description of Required Functionality
ITI-43: Retrieve Document Set	Participants must be capable of issuing a Retrieve Document Set transaction *to the CSS XCA Initiating Gateway*, providing it with **three**

(as Consumer)	**required parameters**: HomeCommunityId, DocumentId, and RepositoryId. (Note that prior to this, Participants, in the role of a document consumer, should have issued a Registry Stored Query by PatientID and would have received all three parameters in the response. It is required that Participants have the capability of retaining and sending the HomeCommunitityId, the DocumentID and the RepositoryID if they wish to retrieve the document content.)

Appendix A: Brief Overview of eHealth Exchange Standards and IHE

Standards for Connectivity

It is required of all WVHIN Participants to have a basic understanding of the standards, services and policies (some mandated and some indirectly driven by the eHealth Exchange) that form the basis for the technical requirements specified in this document. An introduction to the core standards and specifications is provided in this section. Detailed documents describing these standards and specifications are available here:

Integrating the Healthcare Enterprise: Technical Framework

Of specific relevance to WVHIN are the IHE *IT-Infrastructure (**ITI**) and Patient Care Coordination (**PCC**)* profiles that are described here:

- http://www.ihe.net/Technical_Framework/index.cfm#IT

eHealth Exchange History and Background

The eHealth Exchange evolved from the NwHIN Exchange in October 2012, and is administered by HealtheWay, a non-profit public/private partnership. More information the organization and their standards for exchange can be found on their website:

- http://healthewayinc.org/index.php/exchange/participant-fees/2-uncategorised/7-vision-and-mission

NwHIN History and Background

Although NwHIN Exchange has now transitioned to eHealth Exchange, the specifications prescribed are still relevant to the WVHIN. The WVHIN has implemented the specifications prescribed by NwHIN and provides the necessary Gateway Services to be a node on NwHIN Exchange. Background on NwHIN can be found here:

- http://www.healthit.gov/policy-researchers-implementers/nwhin-history-background

HITSP Harmonization Framework

- http://www.hitsp.org/harmonization.aspx
- http://www.hitsp.org/default.aspx#c

Appendix B: Content Standards

While the majority of this document focuses on the transport, handshake, and mechanism of exchange, the actual "content" of what health information may be exchanged from a technology standpoint is governed by the following industry standards:

Clinical Document Architecture

Clinical Document Architecture (CDA) is an HL7 document markup standard that specifies the structure and semantics of "clinical documents" for the purpose of exchange. CDA documents derive their machine-processable meaning from the HL7 Reference Information Model (RIM) and use the HL7 Version 3 Data Types. CDA is a flexible XML-based clinical document architecture**.** CDA itself is not a specific document, but can be used to express many types of documents.

A CDA document can contain many data sections, all of which contain narrative text. Some CDA sections contain structured data elements, and some of those data elements are coded. There are many types of CDA documents, including CCD, XPHR, HITSP C32, MS Discharge Summary (HITSP C48), History and Physical (HITSP C84), Lab Report (HITSP C37), etc. Some of the more common ones are described below.

Consolidated CDA or CCDA

From HL7: "The Consolidated Templated implementation guide contains a library of CDA templates, incorporating and harmonizing previous efforts from Health Level Seven (HL7), Integrating the Healthcare Enterprise (IHE), and Health Information Technology Standards Panel (HITSP). It represents harmonization of the HL7 Health Story guides, HITSP C32, related components of IHE Patient Care Coordination (IHE PCC), and Continuity of Care (CCD), and it includes all required CDA templates in Final Rules for Stage 1 Meaningful Use and 45 CFR Part 170 – Health Information Technology: Initial Set of Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology; Final Rule.[3]"

Continuity of Care Document

Continuity of Care Document (CCD) describes constraints on the HL7 Clinical Document Architecture, Release 2 (CDA) specification. It specifies a core data set of the most relevant administrative, demographic, and clinical information facts about a patient's healthcare, covering one or more healthcare encounters. It provides a means for one healthcare practitioner, system, or setting to aggregate all of the pertinent data about a patient and forward it to another practitioner, system, or setting to support the continuity of care.

CCD is just one type of CDA document. Other types of CDA documents can contain some of the same CCD sections, but different sections as well.

[3] HL7 Implementation Guide for CDA® Release 2: IHE Health Story Consolidation, Release 1.1 - US Realm. July 2012.

HITSP C32

The HITSP Summary Document using the HL7 Continuity of Care Document (CCD) Component, HITSP C32, describes the document content summarizing a patient's medical status for the purpose of information exchange. HITSP C32 is based on a CCD but further constrains the CCD specification.

The content may include administrative (e.g., registration, demographics, insurance, etc.) and clinical (e.g., problem list, medication list, allergies, test results, etc.) information. Any specific use of this component by another HITSP specification may constrain the content further based upon the requirements and context of the document exchange. This specification defines content in order to promote interoperability between participating systems. Any given system creating or consuming the document may contain much more information than conveyed by this specification. Such systems may include Personal Health Records (PHRs), EHRs (Electronic Health Records), Practice Management Applications, and other persons and systems as identified and permitted.

HITSP CDA Content Modules (C83)

HITSP CDA Content Modules (C83) specification is a library of the HITSP-defined data elements utilized for mapping to data elements from selected standards on which HITSP is based. It is used by other HITSP components to establish the set of harmonized constraints that HITSP applies across the selected standards.

Note that the HITSP C32 has a dependency on the HITSP C83 as far as the constraints on each content module's data elements.

IHE Patient Care Coordination (PCC) Profiles

IHE PCC domain was established in July 2005 to deal with integration issues that cross providers, patient problems or time. It deals with general clinical care aspects such as document exchange, order processing, and coordination with other specialty domains. PCC also addresses workflows that are common to multiple specialty areas and the integration needs of specialty areas that do not have a separate domain within IHE.

IHE PCC does not refer to a single CDA based document but a series of various medical summary document types. Some of the more common IHE PCC Profiles include document types like Medical Summary (MS), Emergency Department Referral (EDR), Exchange of Personal Health Record Content (XPHR), and Immunization Content (IC). These form some of the initial sets of documents accepted by the WVHIN registry.

Additional Resources and References

PIX and XDS.b and BPPC Profiles

http://www.ihe.net/Technical_Framework/upload/IHE_ITI_TF_Rev8-0_Vol1_FT_2011-08-19.pdf

http://www.ihe.net/Technical_Framework/upload/IHE_ITI_TF_Rev8-0_Vol2a_FT_2011-08-19.pdf

http://www.ihe.net/Technical_Framework/upload/IHE_ITI_TF_Rev8-0_Vol2b_FT_2011-08-19.pdf

http://www.ihe.net/Technical_Framework/upload/IHE_ITI_TF_Rev8-0_Vol3_FT_2011-08-19.pdf

http://www.ihe.net/Technical_Framework/upload/IHE_ITI_Suppl_On_Demand_Documents_Rev1-2_TI_2011-08-19.pdf (On-demand documents)

http://www.ihe.net/technical_frameworks/ (Link to latest IHE Technical Profiles)

IHE Patient Care Coordination (PCC) Profiles or Content profiles

http://www.ihe.net/Technical_Framework/upload/IHE_PCC_TF_Rev7-0_Vol_1_2011-09-09.pdf

http://www.ihe.net/Technical_Framework/upload/IHE_PCC_TF_Rev7-0_Vol_2_2011-09-09.pdf

http://www.ihe.net/Technical_Framework/upload/IHE_PCC_Suppl_Immunization_Content_Rev2-2_TI_2011-09-09.pdf

HITSP C32

http://www.hitsp.org/ConstructSet_Details.aspx?&PrefixAlpha=4&PrefixNumeric=32

Wiki Pages

http://wiki.ihe.net/index.php?title=Patient_Identifier_Cross_Referencing

http://wiki.ihe.net/index.php?title=Cross_Enterprise_Document_Sharing

Annotated XDS.b Examples

http://wiki.ihe.net/index.php?title=Annotated_StoredQuery_Transaction

http://wiki.ihe.net/index.php?title=Annotated_ProvideAndRegister.b_Transaction

http://wiki.ihe.net/index.php?title=Annotated_Retrieve_Document_Set_Transaction

Glossary of Terms

Acronym	Term
ARRA	American Recovery and Reinvestment Act (of 2009)
ATNA	Audit Trail and Node Authentication
BPPC	Basic Patient Privacy Consents
CCD	Continuity of Care Document
CCDA	Consolidated CDA
CDA	Clinical Document Architecture
COTS	Commercial Off The Shelf
CT	Consistent Time
CVX	Refers to “Vaccines administered”
C32	Refers to HITSP C32
EDR	Emergency Department Referral
eHealth Exchange	National HIE successor to NwHIN (administered by HealtheWay).
HER	Electronic Health Record
HIE	Health Information Exchange
HITECH	Health Information Technology for Economic and Clinical Health
HITSP	Healthcare Information Technology Standards Panel
HL7	Health Level 7
IC	Immunization Content
IDN	Integrated Delivery Network
IHE	Integrating the Healthcare Enterprise
ITI	IT Infrastructure (IHE Profile set)
MPI	Master Patient Index
NIST	National Institute of Standards and Technology
NwHIN	Nationwide Health Information Network (now known as eHealth Exchange)
OID	Object Identifier
ONC	Office of National Coordinator
PCC	Patient Care Coordination (IHE Profile set for content standards)
PHR	Personal Health Record
PIX	Patient Identifier Cross Referencing
RIM	Reference Information Model
RLS	Record Locator Service
SOA	Service Oriented Architecture
TLS	Transport Layer Security
URI	Uniform Resource Identifier
VLER	Virtual Lifetime Electronic Record
WVHIN	West Virginia Health Information Network
XCA	Cross Community Access
XCPD	Cross Community Patient Discovery
XDS.b	Cross Enterprise Document Sharing
XDS-MS	Cross Enterprise Document Sharing – Medical Summaries
XPHR	Exchange of Personal health record
XML	Extensible Markup Language