



Connect Virginia

Advancing Virginia's Health Care

Connect Virginia EXCHANGE Onboarding and Certification Guide

Version 1.4

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REVISION HISTORY

Version	Revision Date	Implemented By	Approved By	Approval Date	Reason
1.0	26 June 2012				Initial draft.
1.2	3 July 2012				Modified based on feedback.
1.3	11 July 2012				Modified based on feedback.
1.4	18 July 2012				Modified based on feedback.

RELATED DOCUMENTATION

This table includes key related documentation.

ID	Title	Version	Notes
34-1206-016	ConnectVirginia Exchange Services Implementation Guide		



1 OVERVIEW

This document provides an overview of the [ConnectVirginia Statewide Health Information Exchange](#) including the architecture, the services offered, as well as the technical information required to begin the onboarding process. After a brief description, the detailed steps, which include both the business and the technical requirements, are provided to guide the prospective node through the process of joining ConnectVirginia EXCHANGE.

2 INTENDED AUDIENCE

This document is intended to be read by Chief Information Officers, departmental business owners and technical staff. The document provides an overview of and background information on ConnectVirginia. It also contains links to various national/industry specification documents and outlines the detailed steps required to complete certification. Additionally, separate documentation has been referenced to provide technical users with the required content and messaging specifications needed for implementation.

3 CONNECTVIRGINIA BACKGROUND

ConnectVirginia is the Statewide Health Information Exchange (HIE) for the Commonwealth of Virginia. It provides a safe secure electronic system to support the exchange among healthcare providers of patient clinical data. This initiative is being led by Community Health Alliance, Inc., a Virginia-based, not-for-profit company, and a Governing Body of healthcare professionals and executives from across the Commonwealth.

ConnectVirginia utilizes a secure electronic internet-based set of technologies to allow medical information to be exchanged by participating healthcare providers. As a result, healthcare providers will have easy access to complete medical information which will result in significant improvements in the quality of care for patients. The electronic streamlined accessibility of patient data will also improve care coordination among healthcare providers. ConnectVirginia has developed an EXCHANGE services model that is ideally suited for healthcare providers in the Commonwealth of Virginia by adhering to the following State strategic directives:

3.1 Federated

To minimize the need for centralized storing of clinical data, ConnectVirginia follows a federated Health Information Exchange architecture. This allows each participating organization to retain control of the healthcare information they have collected and only respond to queries when the clinical information is requested by individuals who are authorized by ConnectVirginia.

3.2 Secure

ConnectVirginia takes its responsibility for maintaining the privacy and security of Protected Health Information (PHI) very seriously. To ensure information security while sharing healthcare data via EXCHANGE, ConnectVirginia utilizes the highest level of encryption as well as state of



the art technology for authentication and authorization. Additionally, ConnectVirginia has adopted rigorous policies and procedures that fully comply with HIPAA Privacy and Security rules. These policies and procedures clearly define the permitted purposes for healthcare data sharing, and node eligibility criteria. Certifying applicant nodes who wish to exchange information through ConnectVirginia EXCHANGE follows a detailed review process that strictly enforces these HIPAA compliant policies and procedures.

3.3 Opt-In

Before a patient's information is made available through the ConnectVirginia EXCHANGE, the patient must provide opt-in consent allowing their data to be shared. ConnectVirginia adopted the opt-in consent model because the state Health Information Technology Advisory Commission (HITAC) group determined this would be the best fit initially for consumer/provider trust of the HIE.

4 TECHNOLOGY OVERVIEW

ConnectVirginia utilizes open standards compliant with the most recent Nationwide Health Information Network (NwHIN) specifications. The Office of the National Coordinator (ONC) has been responsible for defining standards for a consistent, secure information exchange across the internet. The current version of these definitions is known as the *Summer 2011 specifications*. The NwHIN standards are used across the United States to facilitate interoperability among private and public entities such as MedVirginia, the Department of Veteran Affairs, the Department of Defense and the Social Security Administration.

ConnectVirginia EXCHANGE is a collection of standards, policies and message-based services that provide a secure method to query and retrieve patient data among all ConnectVirginia EXCHANGE Certified Nodes. It is important to note that ConnectVirginia does not store any clinical information about patients. The Software as a Service (SaaS) model uses industry best practices for Service Oriented Architecture (SOA).

The ConnectVirginia architecture enables compliance with the NwHIN and the Meaningful Use Final Rule standards by providing:

- A Master Patient Index Service
- A Consent Registry
- A Provider Registry
- A Record Locator Service, enabling requests to be federated to the certified nodes that have information about a specific patient.

The following diagram is a high level depiction of the process flows among ConnectVirginia nodes and other organization.

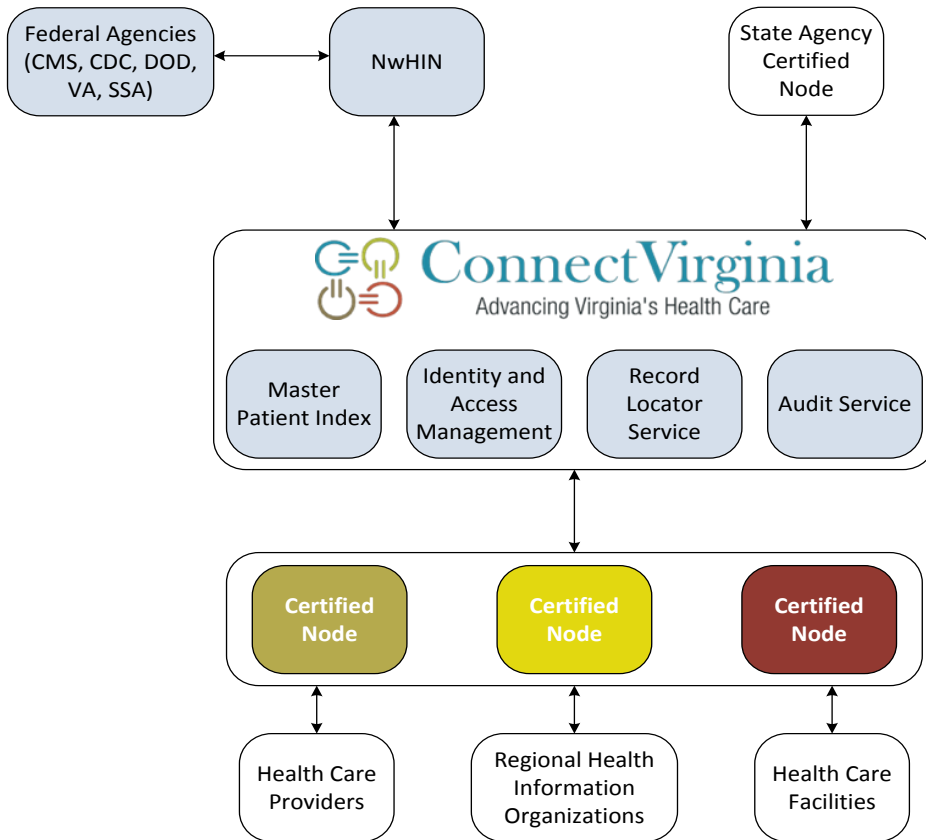


Figure 1 ConnectVirginia in Relation to Other National and State Health Information Organizations.

5 OVERVIEW OF STANDARDS APPLICABLE TO CONNECTVIRGINIA

The following standards are applicable to the ConnectVirginia EXCHANGE and are described below: Nationwide Health Information Network (NwHIN) Interoperability Standards, Integrating the Healthcare Enterprise (IHE), Clinical Document Architecture (CDA), Continuity of Care Document (CCD), and Healthcare Information Technology Standards Panel (HITSP).

5.1 Nationwide Health Information Network (NwHIN) Interoperability Standards

The Nationwide Health Information Network (NwHIN) is a set of policies, standards, and services that enable Participants to use the Internet for secure and meaningful exchange of health information to improve health and healthcare. This secure exchange has evolved into an essential part of using electronic health records. The NwHIN Exchange Web Service Interface specifications define the core set of standard services to be implemented by each Certified Node on the network in order to exchange interoperable health information over the Internet. These functional services provide discovery and information exchange capabilities and are based on a foundational set of messaging, security, and privacy services.



5.2 CONNECT

CONNECT is an open source software solution that supports health information exchange – both locally and at the national level. CONNECT uses Nationwide Health Information Network (NwHIN) standards to make sure that health information exchanges are compatible with other exchanges being set up throughout the country.

CONNECT was initially developed by federal agencies to support their health-related mission, but it is now available to all organizations and can be used to help set up health information exchanges and to share data using nationally-recognized interoperability standards. CONNECT can be used to:

- Set up a health information exchange within an organization.
- Link an organization into regional and national networks of health information exchanges using NwHIN standards.

By advancing the adoption of interoperable health IT systems and health information exchanges, the country will better be able to achieve the goal of making sure all citizens have electronic health records by 2014. Health data will be able to follow a patient across the street or across the country.

5.3 Integrating the Healthcare Enterprise (IHE)

IHE is an initiative led by the healthcare professionals and industry to improve the way computer systems in healthcare share information. IHE does not create new standards, but rather drives the adoption of standards to address specific clinical needs by developing Integration Profiles that specify precisely how standards are to be used to address clinical needs. Integration Profiles help to eliminate ambiguities, reduce configuration and interfacing costs, and ensure a higher level of practical interoperability.

5.4 Clinical Document Architecture

The HL7 Clinical Document Architecture (CDA) is a document markup standard that specifies the structure and semantics of a clinical document (such as a discharge summary, progress note, procedure report) for the purpose of health record exchange. CDA documents are encoded in Extensible Markup Language (XML) and incorporate concepts from standard coding systems such as Systemized Nomenclature of Medicine Clinical Terms (SNOMED CT) and Logical Observation Identifiers Names and Codes (LOINC). The CDA specification is highly flexible and is designed to be broad enough to cover the domain of clinical documents.

5.5 HITSP Continuity of Care Document

The Healthcare Information Technology Standards Panel (HITSP) is a volunteer-driven, consensus-based organization that was funded through a contract from the Department of Health and Human Services. The primary role of HITSP is to harmonize and recommend the technical standards that are necessary for communicating healthcare information throughout the healthcare spectrum. ConnectVirginia has adopted the HITSP C32 Continuity of Care Document (CCD) as its standard content for exchanging health information because this is the de-facto standard that is being used today by NwHIN participants. Supplemental documentation



has been developed to provide more detail on how to implement the ConnectVirginia C32 content specification and how to create a ConnectVirginia certified content for a CCD exchange, please reference the ConnectVirginia EXCHANGE Clinical Content Implementation Guide for more information.

6 BECOMING A CERTIFIED NODE ON CONNECTVIRGINIA

This section identifies the process that a Health Information Organization (HIO) must follow to become a Certified Node on the ConnectVirginia EXCHANGE.

6.1 Complete the Application for Participation

1. Download the Application:
 - a. Download and complete the ConnectVirginia Application for Participation from: [insert link](#)
 - b. Sign the ConnectVirginia Trust Agreement
2. Submit Completed Application Packet:
 - a. Forward an electronic copy of the completed Application and all supporting documents to enroll@connectvirginia.org.
 - b. Send the original signed hard copies of the Application, all supporting documents and the application fee to ConnectVirginia, 4900 Cox Road, Suite 245, Glen Allen, Virginia 23060.

Upon any determination for acceptance or rejection of an application, the applicant shall be informed of the decision by ConnectVirginia as well as the reasoning underlying the decision. If rejected, the applicant will receive a refund of the application fee and the applicant may, after correcting the identified deficiencies, submit a new application for consideration by ConnectVirginia.

3. Pay the one-time certification and onboarding fee and successfully perform all of the required certification and onboarding activities
4. Receive the counter-signed ConnectVirginia Trust Agreement
5. Remit the required subscription fee within five (5) business days of receiving the countersigned Trust Agreement.

7 EXCHANGE SERVICES OFFERED BY CONNECTVIRGINIA

ConnectVirginia EXCHANGE offers several core web services that are compliant with NwHIN specifications, including: Patient Discovery, Document Query, Document Retrieve and Document Submission. Detailed requirements for implementing ConnectVirginia EXCHANGE services are contained within the companion ConnectVirginia EXCHANGE Services Implementation Guide.



7.1 Patient Discovery

Patient Discovery is one of the core HIE web services. This service enables one Certified Node of ConnectVirginia to query other Certified Nodes to establish a patient’s identity and identify potential sources of information for that patient. Patient Discovery internally uses the IHE Cross Community Patient Discovery (XCPD) web service (ITI-55) transaction as required in the NwHIN specifications.

The following diagram represents the typical data flow of a patient discovery request from an Initiating Node to ConnectVirginia. When ConnectVirginia receives a request from the Initiating Node, ConnectVirginia submits the request, concurrently, to the Certified Nodes. The responses are then aggregated by ConnectVirginia and provided to the Initiating Node.

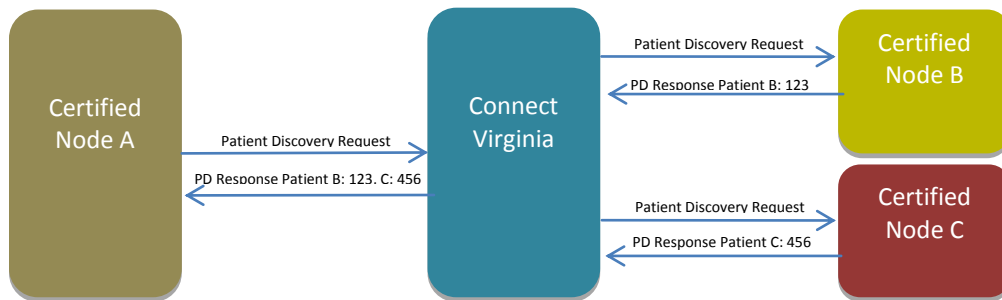


Figure 2 Patient Discovery Data Flow

7.2 Document Query

Document Query is a query service initiated from one Certified Node to another, requesting a list of documents meeting the given query parameters for a particular patient. Query for Documents utilizes the IHE ITI-38 Cross Community Access (XCA) Query transaction as required in the NwHIN specifications.

This query returns a collection of Document IDs referring to available documents as well as some metadata describing each document. If the initiating Certified Node desires to retrieve the associated documents, these references must be used in the Document Retrieve transaction.

The following diagram represents the data flow for a document query. Upon receiving a Document Query request from an Initiating Node, ConnectVirginia will route the request to the appropriate Certified Nodes to service the request. The responses are then routed by ConnectVirginia to the Initiating Node.

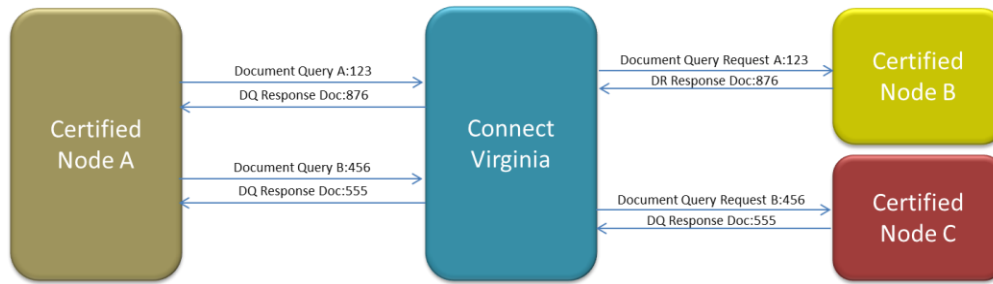


Figure 3 Document Query Data Flow

7.3 Document Retrieve

Document Retrieve is a request service initiated from one Certified Node to another, seeking to retrieve specific documents identified by a prior Query for Documents. Document Retrieve utilizes the IHE ITI-39 Cross Community Access (XCA) transaction as required by the NwHIN specifications. This service assumes that the Document ID of the Document to be retrieved was obtained using the Document Query prior to the call to this service.

The following diagram represents the data flow for a Document Retrieve. Upon receiving a Document Retrieve request from the Initiating Node, ConnectVirginia will route the request to the appropriate Responding Node(s) to service the request. The responses are then routed by ConnectVirginia to the Initiating Node.

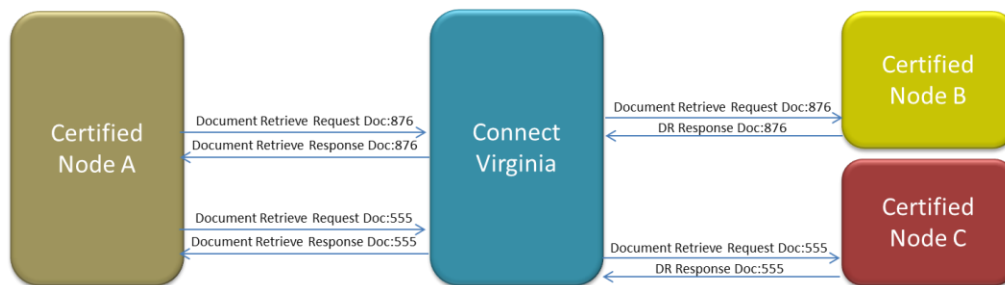


Figure 4 Document Retrieve Data Flow

7.4 Document Submission (Patient Message)

When a patient who opted-in to ConnectVirginia, later decides to opt-out, the Opt-Out consent service distributes a notification of the patient’s opt-out to all Certified Nodes with the Node’s corresponding identifier for that patient. As the consumer preferences are not available through the NwHIN specifications, this interaction is accomplished through a Document Submission message to the Certified Nodes.



The following diagram represents the data flow for a Patient Opt-Out Message. Currently, the NwHIN specifications do not have Consumer Preferences Standards (Consent) and therefore ConnectVirginia will utilize the NwHIN's Document Submission specification with specific slots to identify the patient who has opted out. By leveraging Document Submission as the vehicle for consent, ConnectVirginia leaves Certified Nodes free to choose either CONNECT open source, or the vendor of their choice's implementation of CONNECT as the entry point into ConnectVirginia, thus providing a consistent transport mechanism.

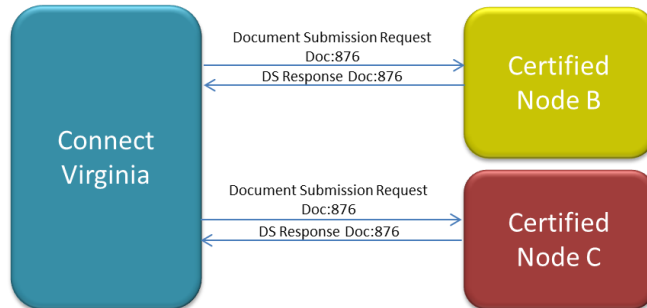


Figure 5 Document Submission Data Flow (Patient Opt-Out Message)