

COMMONWEALTH OF VIRGINIA



Information Technology Resource Management (ITRM)

ENTERPRISE ARCHITECTURE

HEALTH INTEROPERABILITY DATA STANDARDS

Virginia Information Technologies Agency (VITA)

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Publication Version Control

This following table contains a history of revisions to this publication.

Version	Date	Revision Description
1.0	mm/dd/2011	Initial Document

Reviews

- This publication was reviewed by the VITA Policy, Practice and Architecture group.
- This publication was reviewed by the VITA Master Data Governance group.
- This publication was reviewed by Health Information Technology Standards Advisory Committee (HITSAC). The Committee members are as follows:
- Online review was provided for agencies and other interested parties via the VITA Online Review and Comment Application (ORCA).

Definitions

Clinical Document: A clinical document is a report that details patient-specific health care information.

Data Owner: A data owner defines, manages and controls the use of data and ensures compliance with adopted standards within an Agency. The Agency Head or designee designates the Agency Data Owner(s) for the functional/subject areas within their jurisdictional control or authority and ensures adequate resources for Agency Data Owners to develop and maintain their respective functional/subject areas in support of the Commonwealth's Data Management Program.

Data Steward: A data steward assigned by an agency to represent the agency's interagency data needs and ensure that proposed standards meets those needs. The Agency Data Steward works on behalf of their Agency Data Owner. The data steward should have a broad understanding of the agency's data, be able to research data usage, and be empowered to obtain agreement from data owners and speak authoritatively for the agency.

Document Standard: A document standard defines the structure of clinical documents. A standard can be defined by an international or national standard-developing organization (SDO), such as Health Level 7 (HL7), or by a particular agency, such as Centers for Disease Control and Prevention (CDC).

External Standard: As used in this document, an external standard defined and maintained by an SDO to improve the ability to share electronic data and ensure semantic interoperability. Generally may apply to services, documents, vocabularies (i.e., reference terminologies) and/or messages. Includes extending (e.g., adding data elements or codes to) an existing external standard to accommodate requirements specific to the Commonwealth.

Guidance Standard: A guidance standard provides guidance, context, methodology or background information that can be reviewed prior to creating an implementation specification.

Internal Standard: As used in this document, an internal standard defined by one or more Commonwealth agencies where external standards do not exist and the internal standard has been approved by the Secretary of Technology.

Message: A message is a character string that contains data encoded according to a particular set of encoding rules. Encoding rules determine how (i.e. using what syntax) data elements are stored within messages. (http://www.ringholm.com/docs/00200_en.htm)

Messaging Standard: A messaging standard defines the structure and content of messages that are exchanged between systems. A standard can be defined by an international or national standard-developing organization (SDO), such as American National Standards Institute (ANSI), or by a particular agency, such as Centers for Disease Control and Prevention (CDC).

Standard: A standard specific and, where applicable, technical documents containing directives and mandatory specifications governing the management, development, and use of information technology resources. (COV ITRM STANDARD GOV2000-01.1)

Standards Development Organization (SDO): A standards development organization is “a domestic or international organization that plans, develops, establishes, or coordinates voluntary consensus standards using procedures that incorporate the attributes of openness, balance of interests, due process, an appeals process, and consensus in a manner consistent with the Office of Management and Budget Circular Number A–119, as revised February 10, 1998.” (Article I, Public Law 108–237).

Technology Standard: A technology standard is a specific and, where applicable, technical document containing directives and mandatory specifications governing the management, development, and use of information technology resources. (COV ITRM STANDARD GOV2000-01.1)

Vocabulary: A vocabulary is a code set, nomenclature system or identifier list maintained by an organization to standardize a particular domain (e.g., human genes, clinical terminology, provider identification).

Scope

Health Interoperability Data Standards define external standards applicable to Agencies involved in the exchange of health information. This standard establishes the external, nationally recognized document, messaging, and technology standards applicable to health information exchange that will be used by Commonwealth agencies to ensure interoperability between agencies and between agencies and external entities.

Health Interoperability Standard Governance

The Commonwealth Health Interoperability Data Standard relies solely on external standards that are defined, owned and maintained by SDOs. VITA will maintain a complete catalogue of applicable external standards in a searchable Enterprise Data Standards Repository available on the VITA web site at <http://www.vita.virginia.gov/oversight/dm/default.aspx?id=10344> and will review each adopted external standard at least once every three months to ensure that the Standards Repository remains current, accurate and complete.

The Data Owners responsible for ensuring timely implementation of and continuing compliance with each interoperability standard within each agency are as follows:

- ◆ Department for the Aging (VDA): Leonard Eshmont, Chief Information Officer
- ◆ Department of Behavioral Health and Developmental Services (DBHDS): Sanford Hostetter, Chief Information Officer
- ◆ Department of General Services Division of Consolidated Laboratory Services

(DCLS): Wanda Andrews, Director of Laboratory Operations

- ◆ Department of General Services Division of Consolidated Laboratory Services (DCLS): Vickie Tyson, IT Application Development and Project Manager
- ◆ Department of Health (VDH): Debbie Secor, Chief Information Officer
- ◆ Department of Health Professions (DHP): Patricia A. Paquette, Chief Information Officer
- ◆ Department of Medical Assistance Services (DMAS): Sylvia Hart, Chief Information Officer
- ◆ Disability Services Agencies (DSA)¹: Ernie Steidle, Chief Information Officer
- ◆ Department of Social Services (DSS): Robert Hobbelman, Chief Information Officer

The Data Stewards responsible for having a broad understanding of the agency's data, researching data usage, obtaining agreement from data owners and speaking authoritatively for the agency are as follows:

- ◆ VDA: Leonard Eshmont, Chief Information Officer
- ◆ DBHDS: Wendy Cary, Beverly Thomas
- ◆ DCLS: Vickie Tyson, IT Application Development and Project Manager
- ◆ VDH: Jason Hall, Diana Malik
- ◆ DMAS: Carrie McDermott, Karen Rowson
- ◆ DSA: Reid Gaillard

The Health Information Technology Standards Advisory Committee (HITSAC) advises the Information Technology Advisory Council (ITAC) on the adoption of nationally recognized technical and data standards for health information technology systems or software pursuant to subdivision 7 of § [2.2-2699](#) in the Code of Virginia.

To ensure semantic interoperability within state government and between state government and external partners, HITSAC has recommended that the Commonwealth adopt or adapt and implement external standards and implementation guides to the maximum extent possible. The HITSAC members are as follows:

- ◆ **Dr. Sallie Cook**, Chief Medical Officer, VHQC
- ◆ **Dr. James Harrison**, Associate Professor and Director of Biomedical Informatics, Departments of Public Health Sciences and Pathology, University of Virginia

¹ DSA agencies include: Department of Rehabilitative Services (DRS), Virginia Board for People with Disabilities (VBPD), Department for the Blind and Vision Impaired (DBVI), Virginia Department for the Deaf and Hard of Hearing (VDDHH) and the Woodrow Wilson Rehabilitation Center (WWRC).

- ◆ **Mr. Richard Pollack**, Vice President and Chief Information Officer, VCU Health System
- ◆ **Mr. John Quinn**, Chief Technology Officer of HL7, Inc.
- ◆ **Dr. Marshall Ruffin**, Executive Vice President and Chief Technology Officer, Inova Health Systems

The VITA Enterprise Solutions and Governance Directorate (ESG) has developed this Health Vocabulary Data Standard document in collaboration with the agency Data Stewards and HITSAC. The ESG resources responsible for supporting the Health Vocabulary Data Standard are as follows:

- ◆ Jerry Simonoff, Director Enterprise Solutions and Governance
- ◆ Todd Kissam, Chief Enterprise Architect
- ◆ Susan McCleary, HITSAC Administrator
- ◆ Akeisha Heard, Data Analyst

Components of the Health Interoperability Data Standard

The Health Interoperability Data Standard consists of the following components:

1. A business narrative describing the standard (this document)

Health Interoperability Data Standard Authority

§ 2.2-225. Position established; agencies for which responsible; additional powers.

The position of Secretary of Technology (the Secretary) is created. ...

Unless the Governor expressly reserves such power to himself, the Secretary may, with regard to strategy development, planning and budgeting for technology programs in the Commonwealth: ...

12. Review and approve statewide technical and data standards for information technology and related systems, including the utilization of nationally recognized technical and data standards for health information technology systems or software purchased by a state agency of the Commonwealth, as recommended by the CIO. ...

§ 2.2-2007. Powers of the CIO.

A. In addition to such other duties as the Secretary may assign, the CIO shall: ...

2. Direct the formulation and promulgation of policies, guidelines, standards, and specifications for the purchase, development, and maintenance of information

technology for state agencies, including, but not limited to, those (i) required to support state and local government exchange, acquisition, storage, use, sharing, and distribution of geographic or base map data and related technologies, (ii) concerned with the development of electronic transactions including the use of electronic signatures as provided in § [59.1-496](#), and (iii) necessary to support a unified approach to information technology across the totality of state government, thereby assuring that the citizens and businesses of the Commonwealth receive the greatest possible security, value, and convenience from investments made in technology. ...

12. Develop and recommend to the Secretary statewide technical and data standards for information technology and related systems, including the utilization of nationally recognized technical and data standards for health information technology systems or software purchased by a state agency of the Commonwealth. ...

§ 2.2-2010. Additional powers of VITA.

VITA shall have the following additional powers which, with the approval of the CIO, may be exercised by a division of VITA with respect to matters assigned to that division:

1. Prescribe regulations necessary or incidental to the performance of duties or execution of powers conferred under this chapter. ...
4. Develop and adopt policies, standards, and guidelines for managing information technology by state agencies and institutions. ...
6. Direct the establishment of statewide standards for the efficient exchange of electronic information and technology, including infrastructure, between the public and private sectors in the Commonwealth.
8. Develop statewide technical and data standards for information technology and related systems to promote efficiency and uniformity. ...

§ 2.2-2699.6. Powers and duties of the ITAC.

The ITAC shall have the power and duty to: ...

3. Advise the CIO on strategies, standards, and priorities for the use of information technology for state agencies in the executive branch of state government; ...
5. Advise the CIO on statewide technical and data standards for information technology and related systems, including the utilization of nationally recognized technical and data standards for health information technology systems or software purchased by a state agency of the Commonwealth; ...

§ 2.2-2699.7. Health Information Technology Standards Advisory Committee.

The ITAC may appoint an advisory committee of persons with expertise in health care and information technology to advise the ITAC on the utilization of nationally recognized technical and data standards for health information technology systems or software pursuant to subdivision 5 of § [2.2-2699.6](#). The ITAC, in consultation with the Secretary of

Health and Human Resources, may appoint up to five persons to serve on the advisory committee. Members appointed to the advisory committee shall serve without compensation, but shall be reimbursed for all reasonable and necessary expenses incurred in the performance of their duties as provided in § [2.2-2825](#). The CIO, the Secretary of Technology, and the Secretary of Health and Human Resources, or their designees, may also serve on the advisory committee.

Health Document Standards

The following table lists the document standards that are adopted as standards by the Commonwealth of Virginia. The text that follows describes each adopted standard, when the standard will be used, availability and the source of information.

Adopted Document Standards

Domain	Name	Acronym
Quality measures	<i>Health Level 7 eMeasure: Representation of Quality Measures in the Health Quality Measures Format</i>	HL7 HQMF
Quality measures	<i>Health Level 7 Quality Reporting Document Architecture Implementation Guide for CDA Release 2</i>	HL7 QRDA CDA
Clinical care	<i>Health Level 7 Clinical Document Architecture Release 2</i>	HL7 V3 CDA
Clinical care	<i>Health Level 7 Implementation Guide: CDA Release 2.0 – Continuity of Care Document</i>	HL7 V3 CDA CCD

Document Standard Descriptions

Health Level 7 eMeasure: Representation of Quality Measures in the Health Quality Measures Format (HL7 HQMF)

Maintained By	Health Level 7 (HL7)
Description	<p>The Health Quality Measures Format (HQMF) is a standard for representing a health quality measure as an electronic document. A quality measure is a quantitative tool that provides an indication of an individual or organization's performance in relation to a specified process or outcome via the measurement of an action, process or outcome of clinical care. Quality measures are often derived from clinical guidelines and are designed to determine whether the appropriate care has been provided given a set of clinical criteria and an evidence base. Quality measures are also often referred to as performance measures or quality indicators.</p> <p>Through standardization of a measure's structure, metadata, definitions, and logic, the HQMF provides for quality measure consistency and unambiguous interpretation. A health quality measure encoded in the HQMF format is referred to as an "eMeasure".</p>
Required Use(s)	

Example Use(s)	
Version(s) to Use	Release 1 (Draft Standard for Trial Use)
Implementation Guide(s)	
Availability	Membership at the organizational, support or benefactor level to HL7 is required to access the standard documentation. Documentation may also available as part of software packages that handle HL7 messages.
Website	http://www.hl7.org ; http://www.hl7.org/v3ballot/html/domains/uvqm/uvqm.html

Health Level 7 Quality Reporting Document Architecture Implementation Guide for CDA (HL7 QRDA CDA)

Maintained By	Health Level 7 (HL7)
Description	The Quality Reporting Document Architecture (QRDA) project is developing a standard for communicating health care quality measurement information. The standard will conform to the requirements of the Health Level Seven (HL7) Clinical Document Architecture Release 2.0 (CDA) and will reuse the templates developed for the ASTM/HL7 Continuity of Care Document (CCD) and other CDA implementation guides.
Required Use(s)	
Example Use(s)	
Version(s) to Use	Release 2
Implementation Guide(s)	
Availability	Membership at the organizational, support or benefactor level to HL7 is required to access the standard documentation. Documentation may also available as part of software packages that handle HL7 messages.
Website	http://www.hl7.org ; http://wiki.hl7.org/index.php?title=Quality_Reporting_Document_Architecture

Health Level 7 Clinical Document Architecture (HL7 V3 CDA)

Maintained By	Health Level 7 (HL7)
Description	CDA provides an exchange model for clinical documents (such as discharge summaries and progress notes). (HL7)

Required Use(s)	
Example Use(s)	
Version(s) to Use	Release 2
Implementation Guide(s)	
Availability	Membership at the organizational, support or benefactor level to HL7 is required to access the standard documentation. Documentation may also available as part of software packages that handle HL7 messages.
Website	http://www.hl7.org/implement/standards/cda.cfm

Health Level 7 Implementation Guide: CDA Release 2.0 – Continuity of Care Document (HL7 V3 CDA CCD)

Maintained By	Health Level 7 (HL7)
Description	This HL7 Informative document details a CDA implementation of ASTM E2369-05 Standard Specification for Continuity of Care Record (CCR) which may be used in lieu of ASTM ADJE2369. (HL7)
Required Use(s)	
Example Use(s)	
Version(s) to Use	Release 1, April 01, 2007
Implementation Guide(s)	
Availability	Membership at the organizational, support or benefactor level to HL7 is required to access the standard documentation. Documentation may also available as part of software packages that handle HL7 messages.
Website	http://www.hl7.org/implement/standards/cda.cfm

Health Messaging Standards

The following table lists the messaging standards that are adopted as standards by the Commonwealth of Virginia. The text that follows describes each adopted standard, when the standard will be used, availability and source of information.

Adopted Messaging Standards

Domain	Name	Acronym
Administration	<i>Council for Affordable Quality Health Care Committee on Operating Rules for Information Exchange</i>	CAQH CORE
Billing	<i>National Uniform Billing Committee (NUBC) Uniform Bill (UB-04) Current UB Data Specification Manual</i>	NUBC UB-04
Clinical research	<i>Clinical Data Interchange Standards Consortium CDASH</i>	CDISC CDASH
Digital imaging	<i>Digital Imaging and Communications in Medicine</i>	DICOM
Drugs	<i>National Council for Prescription Drug Programs (NCPDP) Formulary and Benefits Standard</i>	NCPDP Formulary and Benefits
Drugs	<i>National Council for Prescription Drug Programs (NCPDP) SCRIPT Standard</i>	NCPDP SCRIPT
Drugs	<i>National Council for Prescription Drug Programs (NCPDP) Telecommunication Standard Implementation Guide Version 5.1</i>	NCPDP Telecommunication
Health data	<i>Health Level 7 Messaging</i>	HL7 Messaging
Health insurance	<i>Accredited Standards Committee X12N 270/271 (Health Care Claim Eligibility Inquiry/Response)</i>	ASC X12N 270/271
Health insurance	<i>Accredited Standards Committee X12N 276/277 (Health Care Claim Status Request/Response)</i>	ASC X12N 276/277
Health insurance	<i>Accredited Standards Committee X12N 278 (Health Care Services Request for Review/Response)</i>	ASC X12N 278
Health insurance	<i>Accredited Standards Committee X12N 820 (Payment Order/Remittance Advice)</i>	ASC X12N 820
Health insurance	<i>Accredited Standards Committee X12N 834 (Benefit Enrollment & Admittance)</i>	ASC X12N 834
Health insurance	<i>Accredited Standards Committee X12N 835 (Health Care Claim Payment/Advice)</i>	ASC X12N 835
Health insurance	<i>Accredited Standards Committee X12N 837 (Health Care Claim for Dental, Institutional, or Professional)</i>	ASC X12N 837

Infrastructure	<i>Integrating the Healthcare Enterprise IT Infrastructure Technical Framework</i>	IHE ITI-TF
Laboratory	<i>Integrating the Healthcare Enterprise Laboratory Technical Framework</i>	IHE LTF
Patient care coordination	<i>Integrating the Healthcare Enterprise Patient Care Coordination Technical Framework</i>	IHE PCC
Quality, research and public health	<i>Integrating the Healthcare Enterprise Quality, Research and Public Health Technical Framework</i>	IHE QRPH-TF

Messaging Standard Descriptions

Accredited Standards Committee X12N 270/271 (Health Care Claim Eligibility Inquiry/Response) (ASC X12N 270/271)

<i>Maintained By</i>	Accredited Standards Committee (ASC) X12
<i>Description</i>	Health Care Eligibility & Benefit Inquiry/Response Transactions are used by authorized service centers to request (270) and receive (271) enrollee eligibility and benefits verification.
<i>Required Use(s)</i>	
<i>Example Use(s)</i>	Typically used by providers prior to rendering services to verify eligibility and determine benefits.
<i>Version(s) to Use</i>	004010, 005010
<i>Implementation Guide(s)</i>	ASC X12N 270/271 Health Care Eligibility Benefit Inquiry and Response Implementation Guide (IG) and Addenda (A1)
<i>Availability</i>	Electronic and print copies of the standard can be purchased from ASC X12 (http://store.x12.org/).
<i>Website</i>	http://www.x12.org/

Accredited Standards Committee X12N 276/277 (Health Care Claim Status Request/Response) (ASC X12N 276/277)

<i>Maintained By</i>	Accredited Standards Committee (ASC) X12
<i>Description</i>	Health Care Claims Status Inquiry/Response Transactions contains requests (276) from providers for information on the status of claims that have been submitted for adjudication; the response (277) file contains responses to those requests.
<i>Required Use(s)</i>	

Example Use(s)	Typically used by providers after services have been rendered; manage receivables and monitor billing.
Version(s) to Use	004010, 005010
Implementation Guide(s)	ASC X12N 276/277 Health Care Claim Status Request and Response Implementation Guide (IG) and Addenda (A1)
Availability	Electronic and print copies of the standard can be purchased from ASC X12 (http://store.x12.org/).
Website	http://www.x12.org/

Accredited Standards Committee X12N 278 (Health Care Services Request for Review/Response) (ASC X12N 278)

Maintained By	Accredited Standards Committee (ASC) X12
Description	(DMAS doesn't use – include?)
Required Use(s)	
Example Use(s)	
Version(s) to Use	004010, 005010
Implementation Guide(s)	
Availability	Electronic and print copies of the standard can be purchased from ASC X12 (http://store.x12.org/).
Website	http://www.x12.org/

Accredited Standards Committee X12N 820 (Payment Order/Remittance Advice) (ASC X12N 820)

Maintained By	Accredited Standards Committee (ASC) X12
Description	The 820 transaction is used to provide Managed Care Organizations (MCO) capitation payment information.
Required Use(s)	
Example Use(s)	
Version(s) to Use	004010, 005010
Implementation Guide(s)	ASC X12N 820 Payroll Deducted and Other Group Premium Payment for Insurance Products Implementation Guide (IG) and Addenda (A1)

Availability	Electronic and print copies of the standard can be purchased from ASC X12 (http://store.x12.org/).
Website	http://www.x12.org/

Accredited Standards Committee X12N 834 (Benefit Enrollment & Admittance) (ASC X12N 834)

Maintained By	Accredited Standards Committee (ASC) X12
Description	The 834 transaction is used to provide enrollee rosters to MCOs.
Required Use(s)	
Example Use(s)	
Version(s) to Use	004010, 005010
Implementation Guide(s)	ASC X12N 834 Benefit Enrollment and Maintenance Implementation Guide (IG) and Addenda (A1)
Availability	Electronic and print copies of the standard can be purchased from ASC X12 (http://store.x12.org/).
Website	http://www.x12.org/

Accredited Standards Committee X12N 835 (Health Care Claim Payment/Advice) (ASC X12N 835)

Maintained By	Accredited Standards Committee (ASC) X12
Description	The 835 transaction is used to provide remittance advice information to providers in an electronic format.
Required Use(s)	
Example Use(s)	
Version(s) to Use	004010, 005010
Implementation Guide(s)	ASC X12N 835 Health Care Claim Payment/Advice Implementation Guide (IG) and Addenda (A1)
Availability	Electronic and print copies of the standard can be purchased from ASC X12 (http://store.x12.org/).
Website	http://www.x12.org/

Accredited Standards Committee X12N 837 (Health Care Claim for Dental, Institutional, or Professional) (ASC X12N 837)

Maintained By	Accredited Standards Committee (ASC) X12
Description	The Health Care Claim Transaction Set (837) is used to submit health care claim billing and/or encounter information from providers of health care services.
Required Use(s)	
Example Use(s)	
Version(s) to Use	004010, 005010
Implementation Guide(s)	ASC X12N 837 Health Care Claim for Dental Implementation Guide (IG) and Addenda (A1)
Availability	Electronic and print copies of the standard can be purchased from ASC X12 (http://store.x12.org/).
Website	http://www.x12.org/

Clinical Data Interchange Standards Consortium Clinical Data Acquisition Standards Harmonization (CDISC CDASH)

Maintained By	Clinical Data Interchange Standards Consortium (CDISC)
Description	CDASH describes the basic recommended (minimal) data collection fields for 18 domains, including common header fields, and demographic, adverse events, and other safety domains that are common to all therapeutic areas and phases of clinical research.
Required Use(s)	
Example Use(s)	
Version(s) to Use	
Implementation Guide(s)	
Availability	A single copy of CDASH is provided for free after registration by CDISC on their website.
Website	http://www.cdisc.org/cdash

Council for Affordable Quality Health Care Committee on Operating Rules for Information Exchange Rules (CAQH CORE)

Maintained By	Council for Affordable Quality Health Care, Committee on Operating Rules for Information Exchange
Description	Operating rules build on existing standards to make electronic transactions more predictable and consistent, regardless of the technology. Rights and responsibilities of all parties, security, transmission standards and formats, response time standards, liabilities, exception processing, error resolution and more must be clearly defined in order to facilitate successful interoperability. Beyond reducing cost and administrative hassles, operating rules foster trust among all participants. All CORE rules will build on applicable HIPAA requirements and other related standards.
Required Use(s)	
Example Use(s)	
Version(s) to Use	
Implementation Guide(s)	
Availability	Documents are available for free on the CAQH CORE website.
Website	http://www.caqh.org/CORE_overview.php

Digital Imaging and Communications in Medicine (DICOM)

Maintained By	Medical Imaging & Technology Alliance, a division of National Electrical Manufacturers Association (NEMA)
Description	The goals of DICOM are to achieve compatibility and to improve workflow efficiency between imaging systems and other information systems in healthcare environments worldwide. The DICOM Standard addresses multiple levels of the ISO OSI network model and provides support for the exchange of information on interchange media. DICOM currently defines an upper layer protocol (ULP) that is used over TCP/IP (independent of the physical network), messages, services, information objects and an association negotiation mechanism.
Required Use(s)	
Example Use(s)	
Version(s) to Use	
Implementation Guide(s)	

Availability	Documents are available for free on the NEMA DICOM website.
Website	http://medical.nema.org/

Health Level 7 Messaging (HL7 Messaging)

Maintained By	Health Level 7
Description	<p>"Version 2 Messages, formally published as 'Application Protocol for Electronic Data Exchange in Healthcare Environments' is an interoperability specification for transactions produced and received by computer systems. These specifications are published as a collection of chapters that describe the transaction interactions by domain.</p> <p>Version 3 Messages is an interoperability specification for transactions that are derived from the HL7 V3 Foundation models and vocabulary and define communications produced and received by computer systems. V3 Messages include the concepts of message wrappers, sequential interactions, and model-based message payloads. These specifications are published as a collection of topics that describe the transaction interactions by domain." (HL7)</p>

Required Use(s)	Electronic Lab Reporting (ELR)	Maintained by Centers for Disease Control and Prevention, used to report infectious and communicable disease data to VDH's Virginia Epidemiological Disease Detection and Surveillance System" (VEDDSS).
	Flu Electronic Lab Surveillance Message (ELSM)	Maintained by Association of Public Health Laboratories , used to report Influenza surveillance data to CDC Influenza EPI Division for National Flu Surveillance and Vaccine development
	Electronic Test Order and Results - Lab Order Message (ETOR - Order)	Maintained by Association of Public Health Laboratories, used to submit lab orders to public health laboratories
	Electronic Test Order and Results - Lab Result Message (ETOR - Result)	Maintained by Association of Public Health Laboratories, used to report laboratory results to submitters
	LIMSi Surveillance Message (LIMSi)	Maintained by Centers for Disease Control and Prevention, used to communicate to CDC the laboratory testing performed, equipment used, extraction and amplification methods used, and the associated result for select biological
	Newborn Screening Electronic Test Order and Results - Lab Order Message (NETOR - Order)	Maintained by Public Health Informatics Institute , used by Hospitals and Birthing Centers to electronically submit lab orders to public health laboratories using a standards based message
	Newborn Screening Electronic Test Order and Results - Lab Result Message (NETOR - Result)	Maintained by Public Health Informatics Institute, used by public health laboratories to report newborn screening laboratory results to hospitals and birthing centers
Example Use(s)		

Version(s) to Use	ELR	HL7 Version 2.5.1 ORU^RO1
	ELSM	HL7 Version 2.3.1 ORU^RO1
	ETOR – Order	HL7 Version 2.5.1
	ETOR - Result	HL7 Version 2.5.1
	LIMSi	HL7 Version 2.5.1 ORL^O22
	NETOR - Order	HL7 Version 2.5.1
	NETOR - Result	HL7 Version 2.5.1
Implementation Guide(s)	ELR	ELR Version 2.5.1 ORU^RO1
	ELSM	Electronic Laboratory Surveillance Message for Influenza like illness Version 2.3.1 ORU^RO1
	ETOR – Order	ETOR Version 2.5.1 OML^O21
	ETOR - Result	ETOR Version 2.5.1 ORU^RO1
	LIMSi	LIMSi Version 2.5.1 ORL^O22
	NETOR - Order	NETOR Version 2.5.1 OML^O21
	NETOR - Result	NETOR Version 2.5.1 ORU^RO1

Availability	HL7	Membership at the organizational, support or benefactor level to HL7 is required to access the standard documentation. Documentation may also be available as part of software packages that handle HL7 messages.
	ELR	Implementation guide is available on the [organization] website for [cost] at [url]. Virginia specific reporting requirements are available online for free at http://www.vdh.state.va.us/epidemiology/documents/pdf/regs.pdf . CDC specific reporting requirements are available online for free at http://www.cdc.gov/osels/ph_surveillance/nndss/nndsshis.htm .
	ELSM	Implementation guide is available on the APHL website for free at http://www.aphl.org/aphlprograms/informatics/collaborations/phlip/Documents/INF_2009Sept15_APHLCDCInfluenzaMsgGuideORURO1.pdf .
	ETOR – Order	Implementation guide is available to APHL members on the APHL website at http://www.aphlweb.org/aphl_departments/Strategic_Initiatives_and_Research/InformaticsProgram/Projects/PHLIP/ETOR .
	ETOR - Result	Implementation guide is available to APHL members on the APHL website at http://www.aphlweb.org/aphl_departments/Strategic_Initiatives_and_Research/InformaticsProgram/Projects/PHLIP/ETOR .
	LIMSi	This message guide is available only to public health and other laboratories.
	NETOR - Order	Not yet published for general use (Draft with planned release date of 9/1/2011)
	NETOR - Result	Not yet published for general use (Draft with planned release date of 9/1/2011)

Website	HL7	http://www.hl7.org
	ELR	http://www.cdc.gov/osels/ph_surveillance/ndss/nndsshis.htm
	ELSM	http://www.aphlweb.org/
	ETOR – Order	http://www.aphlweb.org/aphl_departments/Strategic_Initiatives_and_Research/InformaticsProgram/Projects/PHLIP/ETOR
	ETOR - Result	http://www.aphlweb.org/aphl_departments/Strategic_Initiatives_and_Research/InformaticsProgram/Projects/PHLIP/ETOR
	LIMSi	http://www.cdc.gov/phn/activities/applications-services/ln/index.html
	NETOR - Order	http://www.phii.org/
	NETOR - Result	http://www.phii.org/

Integrating the Healthcare Enterprise IT Infrastructure Technical Framework (IHE ITI-TF)

Maintained By	Integrating the Healthcare Enterprise (IHE)
Description	<p>The IHE Technical Frameworks define specific implementations of established standards to achieve effective systems integration, facilitate appropriate sharing of medical information and support optimal patient care.</p> <p>The IHE IT Infrastructure Technical Framework identifies a subset of the functional components of the healthcare enterprise, called IHE actors, and specifies their interactions in terms of a set of coordinated, standards-based transactions. It describes this body of transactions in progressively greater depth.</p> <p>The Framework provide specification of the following profiles: Audit Trail and Node Authentication (ATNA), Basic Patient Privacy Consents (BPPC), Consistent Time (CT), Cross-Enterprise Document Media Interchange (XDM), Cross-Enterprise Document Reliable Interchange (XDR), Cross-Enterprise Document Sharing (XDS.b), Cross-Enterprise Sharing of Scanned Documents (XDS-SD), Cross-Enterprise User Assertion (XUA), Enterprise User Authentication (EUA), Patient Administration Management (PAM), Patient Demographics Query (PDQ), Patient Identifier Cross-Referencing (PIX), Patient Synchronized Applications (PSA), Personnel White Pages (PWP), and Retrieve Information for Display (RID).</p>
Required Use(s)	
Example Use(s)	

Version(s) to Use	
Implementation Guide(s)	
Availability	Framework documents are available for free on the IHE website.
Website	http://www.ihe.net/Technical_Framework/index.cfm#IT

Integrating the Healthcare Enterprise Laboratory Technical Framework (IHE LTF)

Maintained By	Integrating the Healthcare Enterprise (IHE)
Description	<p>The IHE Technical Frameworks define specific implementations of established standards to achieve effective systems integration, facilitate appropriate sharing of medical information and support optimal patient care.</p> <p>The IHE Laboratory Technical Framework identifies a subset of the functional components of the healthcare enterprise or healthcare community, called IHE actors, and specifies their interactions in terms of a set of coordinated, standards-based transactions.</p> <p>It includes the following Lab Profiles: Laboratory Testing Workflow (LTW), Laboratory Device Automation (LDA), Laboratory Point Of Care Testing (LPOCT), Laboratory Code Set Distribution (LCSD), Laboratory Specimen Barcode Labeling (LBL) and Sharing Laboratory Reports (XD-LAB).</p>
Required Use(s)	
Example Use(s)	
Version(s) to Use	
Implementation Guide(s)	
Availability	Framework documents are available for free on the IHE website.
Website	http://www.ihe.net/Technical_Framework/index.cfm#laboratory

Integrating the Healthcare Enterprise Patient Care Coordination Technical Framework (IHE PCC)

Maintained By	Integrating the Healthcare Enterprise (IHE)
Description	<p>The IHE Technical Frameworks define specific implementations of established standards to achieve effective systems integration, facilitate appropriate sharing of medical information and support optimal patient care.</p> <p>The IHE Laboratory Technical Framework identifies a subset of the functional components of the healthcare enterprise or healthcare community, called IHE actors, and specifies their interactions in terms of a set of coordinated, standards-based transactions.</p> <p>It includes the following Profiles: Cross Enterprise Sharing of Medical Summaries Integration Profile (XDS-MS), including Medical Summary Document Content (MS) specification, Emergency Department Referral (EDR), and Exchange of Personal Health Record Content (XPHR).</p>
Required Use(s)	
Example Use(s)	
Version(s) to Use	
Implementation Guide(s)	
Availability	Framework documents are available for free on the IHE website.
Website	http://www.ihe.net/Technical_Framework/index.cfm#pcc

Integrating the Healthcare Enterprise Quality, Research and Public Health Technical Framework (IHE QRPH-TF)

Maintained By	Integrating the Healthcare Enterprise (IHE)
Description	<p>The IHE Technical Frameworks define specific implementations of established standards to achieve effective systems integration, facilitate appropriate sharing of medical information and support optimal patient care.</p> <p>The IHE Quality, Research and Public Health Technical Framework identifies a subset of the functional components of the healthcare enterprise or healthcare community, called IHE actors, and specifies their interactions in terms of a set of coordinated, standards-based transactions.</p>
Required Use(s)	
Example Use(s)	
Version(s) to Use	

Implementation Guide(s)	
Availability	Framework documents are available for free on the IHE website.
Website	http://www.ihe.net/Technical_Framework/index.cfm#quality

National Council for Prescription Drug Programs Formulary and Benefits Standard (NCPDP Formulary and Benefits)

Maintained By	National Council for Prescription Drug Programs
Description	Formulary And Benefit provides a standard means for pharmacy benefit payers (including health plans and Pharmacy Benefit Managers) to communicate formulary and benefit information to prescribers via technology vendor systems.
Required Use(s)	
Example Use(s)	The batch NCPDP transaction is used by providers through authorized service centers to submit payment request for pharmacy prescription services and track encounter and other information related to the patient and provider.
Version(s) to Use	5.1, D.0
Implementation Guide(s)	NCPDP Telecommunication Standard Version 5, Release 1, HIPAA Implementation Guide (IG).
Availability	Members of NCPDP can download standards for free. Purchasing NCPDP Implementation Guides and Data Dictionaries includes NCPDP membership.
Website	http://www.ncdp.org/standards_listing.aspx

National Council for Prescription Drug Programs SCRIPT (NCPDP SCRIPT)

Maintained By	National Council for Prescription Drug Programs
Description	SCRIPT allows for quick and accurate communication between the physician and pharmacist allowing for heightened security and tracking capability while reducing the potential for medical errors.
Required Use(s)	
Example Use(s)	
Version(s) to Use	
Implementation Guide(s)	

Availability	Members of NCPDP can download standards for free. Purchasing NCPDP Implementation Guides and Data Dictionaries includes NCPDP membership.
Website	http://www.ncdp.org/standards_listing.aspx

**National Council for Prescription Drug Programs (NCPDP)
 Telecommunication Standard Implementation Guide (NCPDP
 Telecommunication)**

Maintained By	National Council for Prescription Drug Programs (NCPDP)
Description	Standard addresses the data format and content, the transmission protocol, and other appropriate telecommunication requirements.
Required Use(s)	
Example Use(s)	
Version(s) to Use	Version 5.1
Implementation Guide(s)	
Availability	Members of NCPDP can download standards for free. Purchasing NCPDP Implementation Guides and Data Dictionaries includes NCPDP membership.
Website	http://www.ncdp.org/standards_listing.aspx

**National Uniform Billing Committee Uniform Bill Current UB Data
 Specification Manual (NUBC UB-04)**

Maintained By	National Uniform Billing Committee
Description	It is a national uniform billing instrument for use by the institutional health care community that documents a core set of data containing pertinent information about patient services, the clinical basis for treatment, related events surrounding the care, as well as other information typically needed by third-party payers, and health researchers.
Required Use(s)	
Example Use(s)	
Version(s) to Use	
Implementation Guide(s)	

Availability	A subscription to a printable electronic version of the Official UB-04 Data Specifications Manual is available from the NUBC and includes access additional documents posted to the Subscribers Only section of the NUBC website including meeting minutes (a searchable 12-year archive), recent changes, clarifications, errata and updates.
Website	http://www.nubc.org/

Health Technology Standards

The following table lists the health technology standards that are adopted as standards by the Commonwealth of Virginia. The text that follows describes each adopted standard, when the standard will be used, availability and source of information.

Adopted Technology Standards

Domain	Name	Acronym
Connectivity	<i>Institute of Electrical and Electronics Engineers 11073 (IEEE 11073) Series</i>	IEEE 11073
Security	<i>American Society for Testing and Materials International Standard Guide for Information Access Privileges to Health Information #E1986-98 (2005)</i>	ASTM E1986-98
Security	<i>American Society for Testing and Materials International Standard Specification for Audit and Disclosure Logs for Use in Health Information Systems #E2147-01</i>	ASTM E2147-01
Security	<i>International Organization for Standardization (ISO) Health Informatics – Functional and Structural Roles (ISO SF Roles), Technical Specification #21298, Draft May, 2007</i>	ISO 21298
Security	<i>International Organization for Standardization (ISO) Health Informatics -- Privilege management and access control (PMAC), Technical Specification #22600 -- Part 1: Overview and policy management, July 2006</i>	ISO 22600
Security	<i>International Organization for Standardization (ISO) Health Informatics -- Pseudonymisation, Published Technical Specification # 25237</i>	ISO 25237
Transport	<i>Applicability Statement for Secure Health Transport Specification</i>	SMTP SHT
Transport	<i>XDR and XDM for Direct Messaging Specification</i>	XRD SHT

Technology Standard Descriptions

American Society for Testing and Materials International Standard Guide for Information Access Privileges to Health Information #E1986-98 (2005) (ASTM E1986-98)

<i>Maintained By</i>	American Society for Testing and Materials International (ASTM)
<i>Description</i>	This guide covers the process of granting and maintaining access privileges to health information. It directly addresses the maintenance of confidentiality of personal, provider, and organizational data in the healthcare domain. It addresses a wide range of data and data elements not all traditionally defined as healthcare data, but all elemental in the provision of data management, data services, and administrative and clinical healthcare services. In addition, this guide addresses specific requirements for granting access privileges to patient-specific health information during health emergencies. (ASTM)
<i>Required Use(s)</i>	
<i>Example Use(s)</i>	
<i>Version(s) to Use</i>	
<i>Implementation Guide(s)</i>	
<i>Availability</i>	Electronic and print versions of the document can be purchased from the ASTM website.
<i>Website</i>	http://www.astm.org/Standards/E1986.htm

American Society for Testing and Materials International Standard Specification for Audit and Disclosure Logs for Use in Health Information Systems #E2147-01 (ASTM E2147-01)

<i>Maintained By</i>	American Society for Testing and Materials International (ASTM)
<i>Description</i>	This specification describes the security requirements involved in the development and implementation of audit and disclosure logs used in health information systems. It specifies how to design an access audit log to record all access to patient identifiable information maintained in computer systems, and includes principles for developing policies, procedures, and functions of health information logs to document all disclosure of confidential health care information to external users for use in manual and computer systems. This specification provides for two main purposes, namely: to define the nature, role, and function of system access audit logs and their use in health information systems as a technical and procedural tool to help provide security

	oversight; and to identify principles for establishing a permanent record of disclosure of health information to external users and the data to be recorded in maintaining it. (ASTM)
Required Use(s)	
Example Use(s)	
Version(s) to Use	
Implementation Guide(s)	
Availability	Electronic and print versions of the document can be purchased from the ASTM website.
Website	http://www.astm.org/Standards/E2147.htm

Applicability Statement for Secure Health Transport Specification (SMTP SHT)

Maintained By	Direct Project
Description	This document describes how to use SMTP, S/MIME, and X.509 certificates to securely transport health information over the Internet. Participants in exchange are identified using standard e-mail addresses associated with X.509 certificates. The data is packaged using standard MIME content types. Authentication and privacy are obtained by using Cryptographic Message Syntax (S/MIME), and confirmation delivery is accomplished using encrypted and signed Message Disposition Notification. Optionally, certificate discovery of endpoints is accomplished through the use of the DNS. Advice is given for specific processing for ensuring security and trust validation on behalf of the ultimate message originator or receiver.
Required Use(s)	
Example Use(s)	
Version(s) to Use	
Implementation Guide(s)	
Availability	Specification is available for free on the Direct Project website (http://wiki.directproject.org/Applicability+Statement+for+Secure+Health+Transport).
Website	http://directproject.org/

Institute of Electrical and Electronics Engineers 11073 Series (IEEE 11073)

Maintained By	International Organization for Standardization (ISO), IEEE and European Committee for Standardization (CEN)
Description	CEN ISO/IEEE 11073 standards enable communication between medical, health care and wellness devices and with external computer systems. They provide automatic and detailed electronic data capture of patient vital signs information and device operational data.
Required Use(s)	
Example Use(s)	
Version(s) to Use	
Implementation Guide(s)	
Availability	Standard documents can be purchased from the ISO, ANSI or IEEE websites.
Website	http://www.11073.org/ ; http://www.iso.org ; http://www.ieee.org ; http://www.cen.eu/cen/

International Organization for Standardization (ISO) Health Informatics – Functional and Structural Roles (ISO SF Roles), Technical Specification #21298, Draft May, 2007 (ISO 21298)

Maintained By	International Organization for Standardization (ISO)
Description	ISO/TS 21298:2008 defines a model for expressing functional and structural roles and populates it with a basic set of roles for international use in health applications. Roles are generally assigned to entities that are actors. This will focus on roles of persons (e.g. the roles of health professionals) and their roles in the context of the provision of care (e.g. subject of care).
Required Use(s)	
Example Use(s)	
Version(s) to Use	
Implementation Guide(s)	
Availability	Electronic and print versions of the documents can be purchased from the ISO website.
Website	http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=40133

**International Organization for Standardization (ISO) Health Informatics --
Privilege management and access control (PMAC), Technical Specification
#22600 -- Part 1: Overview and policy management, July 2006 (ISO 22600)**

Maintained By	International Organization for Standardization (ISO)
Description	ISO/TS 22600-1:2006 is intended to support the needs of healthcare information sharing across unaffiliated providers of healthcare, healthcare organizations, health insurance companies, their patients, staff members and trading partners. It is also intended to support inquiries from both individuals and application systems.
Required Use(s)	
Example Use(s)	
Version(s) to Use	
Implementation Guide(s)	
Availability	Electronic and print versions of the documents can be purchased from the ISO website.
Website	http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=36337

**International Organization for Standardization (ISO) Health Informatics --
Pseudonymisation, Published Technical Specification # 25237 (ISO 25237)**

Maintained By	International Organization for Standardization (ISO)
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Description	<p>ISO/TS 25237:2008 contains principles and requirements for privacy protection using pseudonymization services for the protection of personal health information. ISO/TS 25237:2008 is applicable to organizations who make a claim of trustworthiness for operations engaged in pseudonymization services.</p> <p>ISO/TS 25237:2008:</p> <ul style="list-style-type: none"> • defines one basic concept for pseudonymization; • gives an overview of different use cases for pseudonymization that can be both reversible and irreversible; • defines one basic methodology for pseudonymization services including organizational as well as technical aspects; • gives a guide to risk assessment for re-identification; • specifies a policy framework and minimal requirements for trustworthy practices for the operations of a pseudonymization service; • specifies a policy framework and minimal requirements for controlled re-identification; • specifies interfaces for the interoperability of services interfaces.
Required Use(s)	
Example Use(s)	
Version(s) to Use	
Implementation Guide(s)	
Availability	Electronic and print versions of the documents can be purchased from the ISO website.
Website	http://www.iso.org/iso/catalogue_detail?csnumber=42807

XDR and XDM for Direct Messaging Specification (XDR SHT)

Maintained By	Direct Project
Description	This specification addresses use of XDR and XDM zipped packages in e-mail in the context of directed messaging to fulfill the key user stories of the Direct Project. Note that while the XDM specification includes transport options for USB-Memory and CD-ROM, in this specification XDM always means the XDM e-mail transport option (i.e., XDM file system specification in a zip package as an S/MIME attachment).
Required Use(s)	
Example Use(s)	
Version(s) to Use	

<i>Implementation Guide(s)</i>	
<i>Availability</i>	Specification is available for free on the Direct Project website (http://wiki.directproject.org/XDR+and+XDM+for+Direct+Messaging).
<i>Website</i>	http://directproject.org/

Health Guidance Documents

The following table lists the documents that provide guidance or background information (methodology) on what is needed before a creating an implementation specification.

Guidance Documents

Domain	Name	Acronym
Clinical research	<i>Operational Data Modal (ODM) of Clinical Data Interchange Standards Consortium (CDISC)</i>	CDISC ODM
Directory services	<i>International Organization for Standardization Health informatics -- Directory services for security, communications and identification of professionals and patients, Technical Specification #21091</i>	ISO 21091
Health insurance privacy	<i>Health Insurance Portability and Accountability Act (HIPAA) -- Administrative Simplification</i>	HIPAA
Laboratory testing	<i>Clinical Laboratory Improvement Amendments (CLIA) of 1988</i>	CLIA
Medicare	<i>Medicare Prescription Drug Improvement and Modernization Act of 2003 (Pub.L. 108-173, 117 Stat. 2066, also called Medicare Modernization Act or MMA)</i>	MMA
Security	<i>American Society for Testing and Materials International E1869: Standard Guide for Confidentiality, Privacy, Access, and Data Security Principles for Health Information Including Electronic Health Records</i>	ASTM E1869
Security	<i>American Society for Testing and Materials International E1985: Standard Guide for User Authentication and Authorization</i>	ASTM E1985
Security	<i>International Organization for Standardization 27799:Health informatics: Security management in health using ISO 17799</i>	ISO 27799

Guidance Documents Descriptions

American Society for Testing and Materials International E1869: Standard Guide for Confidentiality, Privacy, Access, and Data Security Principles for Health Information Including Electronic Health Records

<i>Maintained By</i>	American Society for Testing and Materials International (ASTM)
<i>Description</i>	This guide covers the principles for confidentiality, privacy, access, and security of person identifiable health information. The focus of this standard is computer-based systems; however, many of the principles outlined in this guide also apply to health information and patient records that are not in an electronic format. Basic principles and ethical practices for handling confidentiality, access, and security of health information are contained in a myriad of federal and state laws, rules and regulations, and in ethical statements of professional conduct. The purpose of this guide is to synthesize and aggregate into a cohesive guide the principles that underpin the development of more specific standards for health information and to support the development of policies and procedures for electronic health record systems and health information systems.
<i>Website</i>	http://www.astm.org/Standards/E1869.htm

American Society for Testing and Materials International E1985: Standard Guide for User Authentication and Authorization

<i>Maintained By</i>	American Society for Testing and Materials International (ASTM)
<i>Description</i>	This guide covers mechanisms that may be used to authenticate healthcare information (both administrative and clinical) users to computer systems, as well as mechanisms to authorize particular actions by users. These actions may include access to healthcare information documents, as well as, specific operations on those documents (for example, review by a physician).
<i>Website</i>	http://www.astm.org/Standards/E1985.htm

Clinical Laboratory Improvement Amendments (CLIA) of 1988

<i>Maintained By</i>	U.S. Congress and Centers for Medicare & Medicaid Services (CMS)
<i>Description</i>	The Centers for Medicare & Medicaid Services (CMS) regulates all laboratory testing (except research) performed on humans in the U.S. through the Clinical Laboratory Improvement Amendments (CLIA). In total, CLIA covers approximately 200,000 laboratory entities. The Division of Laboratory Services, within the Survey and Certification Group, under the Center for Medicaid and State Operations (CMSO) has the responsibility for implementing the

	<p>CLIA Program.</p> <p>The objective of the CLIA program is to ensure quality laboratory testing. Although all clinical laboratories must be properly certified to receive Medicare or Medicaid payments, CLIA has no direct Medicare or Medicaid program responsibilities.</p>
Website	https://www.cms.gov/clia/

**Health Insurance Portability and Accountability Act (HIPAA) --
 Administrative Simplification**

Maintained By	U.S. Congress and Centers for Medicare & Medicaid Services (CMS)
Description	<p>The Administrative Simplification provisions of the Health Insurance Portability and Accountability Act of 1996 (HIPAA, Title II) required the Department of Health and Human Services (HHS) to establish national standards for electronic health care transactions and national identifiers for providers, health plans, and employers. As the industry has implemented these standards, and increased the use of electronic data interchange, the nation's health care system will become increasingly effective and efficient.</p>
Website	https://www.cms.gov/hipaageninfo/

**International Organization for Standardization (ISO) Health informatics --
 Directory services for security, communications and identification of
 professionals and patients, Technical Specification #21091**

Maintained By	International Organization for Standardization (ISO)
Description	<p>ISO/TS 21091:2005 defines minimal specifications for directory services for health care using the X.500 framework. This Technical Specification provides the common directory information and services needed to support the secure exchange of health care information over public networks. ISO/TS 21091:2005 addresses the health directory from a community perspective in anticipation of supporting inter-enterprise, inter-jurisdiction and international health care communications.</p> <p>ISO/TS 21091:2005 also supports directory services aiming to support identification of health professionals and organizations and the patients/consumers. The latter services include aspects sometimes referred to as master patient indices.</p>
Website	http://www.iso.org/iso/iso_catalogue/catalogue_ics/catalogue_det ail_ics.htm?csnumber=35647

International Organization for Standardization 27799:Health informatics: Security management in health using ISO 17799

Maintained By	International Organization for Standardization (ISO)
Description	<p>ISO 27799:2008 defines guidelines to support the interpretation and implementation in health informatics of ISO/IEC 27002 and is a companion to that standard.</p> <p>ISO 27799:2008 specifies a set of detailed controls for managing health information security and provides health information security best practice guidelines. By implementing this International Standard, healthcare organizations and other custodians of health information will be able to ensure a minimum requisite level of security that is appropriate to their organization's circumstances and that will maintain the confidentiality, integrity and availability of personal health information.</p>
Website	http://www.iso.org/iso/catalogue_detail?csnumber=41298

Medicare Prescription Drug Improvement and Modernization Act of 2003

Maintained By	U.S. Congress and Centers for Medicare & Medicaid Services (CMS)
Description	<p>An act to amend title XVIII of the Social Security Act to provide for a voluntary program for prescription drug coverage under the Medicare Program, to modernize the Medicare Program, to amend the Internal Revenue Code of 1986 to allow a deduction to individuals for amounts contributed to health savings security accounts and health savings accounts, to provide for the disposition of unused health benefits in cafeteria plans and flexible spending arrangements, and for other purposes.</p>
Website	http://www.gpo.gov/fdsys/pkg/PLAW-108publ173/content-detail.html

Operational Data Modal (ODM) of Clinical Data Interchange Standards Consortium (CDISC)

Maintained By	Clinical Data Interchange Standards Consortium (CDISC)
Description	<p>The Operational Data Model (ODM) is designed to facilitate the archive and interchange of the metadata and data for clinical research, its power being fully unleashed when data are collected from multiple sources.</p>
Website	http://www.cdisc.org/odm

Health Interoperability Data Standard Compliance

The Commonwealth of Virginia has established the interoperability standards cited herein to be standards when communicating or exchanging health data.

As of January 1, 2015, agencies and institutions implementing new or updating existing data exchanges or applications that transmit or contain health information must comply with all aspects of the Health Interoperability Data Standard prior to production use of the data exchange or application.

Agencies and Institutions which are unable to comply with the standard must request an exception using the VITA Exception Form available at http://www.vita.virginia.gov/uploadedFiles/Oversight/EA/Data_Management_Group/EA%20Change-Exception%20Request%20Form.doc. The completed form should be emailed to ea@vita.virginia.gov.

General Guidance

- ◆ Where standards leave room for interpretation, standards will be harmonized across agencies, applications, health information technology projects and data exchange processes. VITA will consult with stakeholders and HITSAC as needed to affect harmonization.
- ◆ To the fullest extent possible, a common framework and infrastructure will be utilized for the development, adoption, and maintenance of health information standards.
- ◆ Standards adopted will be used to promote semantic interoperability across health information systems, as well as the efficient and effective sharing of data between Commonwealth agencies and between agencies and external partners.
- ◆ Standards-based data exchanges will be used to breakdown artificial boundaries between health information systems.