



Department of Defense (DoD) and
Department of Veterans Affairs (VA)

Target Health Standards Profile

30 September 2011

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1 Introduction

This document encompasses the Target Department of Defense (DoD)/Veterans Affairs (VA) Health Standards Profile (TSP). The TSP provides a common set of information, data, security, and technical standards for use by DoD and VA in support of new capabilities and major upgrades for healthcare information sharing initiatives. This document also provides a framework and structure to categorize the standards on the TSP.

2 Purpose

This document represents the standards collaboration between DoD and VA and identifies the service areas and standards required to support interoperability. It establishes the framework and structure of the DoD/VA TSP.

3 Scope

This document provides a common set of information, data, security, and technical standards for use by DoD and VA in support of new capabilities and major upgrades for healthcare information sharing initiatives. It applies to all activities associated with system lifecycle development for DoD and VA sharing. It focuses only on those service areas and standards required to support interoperability.

4 Target DoD/VA Health Standards Profile

All standards listed in the TSP have been coordinated through and approved by the DoD/VA Health Architecture Interagency Group (HAIG) in support of the VA/DoD Joint Executive Council (JEC) Joint Strategic Plan (JSP). This profile includes standards established under the Health Insurance Portability and Accountability Act (HIPAA), the Health Information Technology Initial Set of Standards, Implementation Specifications, and Certification Criteria for Electronic Health Records Final Rule (28 July 2010) for Meaningful Use, the Healthcare Information Technology Standards Panel (HITSP) Interoperability Specifications, the Nationwide Health Information Network (NwHIN), the DoD Information Technology Standards Registry (DISR), and the VA Technical Reference Model (TRM). This profile also reflects technical and data standards in support of the Virtual Lifetime Electronic Record (VLER)* and the Integrated Electronic Healthcare Record (iEHR) initiatives. Please see Appendix A for the Target DoD/VA Health Standards Profile.

5 Standards Profile Categorization and Framework

The DoD/VA TSP is categorized and organized in the following manner:

- **Category** – provides the framework to group standards.
- **Subcategory** – provides a subclass of the framework to group the standards.

* The Draft VLER Joint Business Technical Requirements document dated 2 August 2011 serves as a source for the VLER standards.

- **Service Area** – classifies the lower level of standards in regards to the business or technology function they serve. Each service area may contain one or more standards.

A high-level depiction of the TSP structure is shown in Figure 1.

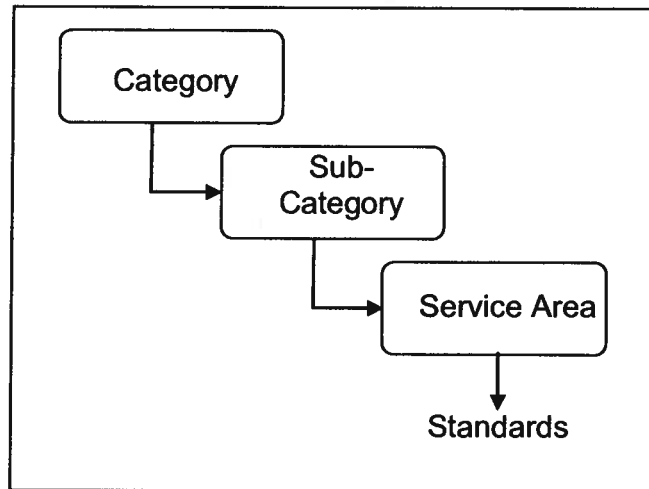


Figure 1. TSP Structure

5.1 TSP Categories and Subcategories

The following provides a description of the categories and subcategories for the TSP. A description of the service areas defined within each sub-category can be found in Appendix B. The framework used for the current Health Standards Profile can be found in Appendix C.

5.1.1 Information

This category presents standards related to the form and structure of information for patient care, claims processing, and medical supplies and services (e.g., clinical document architecture, clinical templates, reference information models, reference terminology models). The following are suggested subcategories:

- **Message Format** – specify message format standards for health care transactions and information exchange. Examples: Accredited Standards Committee (ASC) X12N, Digital Imaging and Communications (DICOM), Health Level 7 (HL7), National Council for Prescription Drug Programs (NCPDP) Telecommunication Standard Implementation Guide.
- **Content and Structure** – presents guidelines and standards for the content and structure of computer-based patient record systems. Example: HL7 Version 3.0 Clinical Document Architecture (CDA) Release 2.0.

5.1.2 Data Representation

This category presents standards related to data concepts, data and object modeling, domains, and definitions. The following are suggested subcategories:

- **Information Modeling and Metadata** – applies to activity models, data models, object models, and data definitions used to define physical databases. Examples: Business Process Modeling Notation (BPMN), Unified Modeling Language (UML), XML Metadata Interchange (XMI).
- **Clinical Data Representation** – used to document diagnoses, procedures, historical information, physical examination, laboratory data, radiological data, medications administered and ordered, etc. Examples: International Classification of Diseases (ICD) codes, Current Procedural Terminology (CPT) codes, Systemized Nomenclature of Medicine (SNOMED), Logical Observation Identifiers Names and Codes (LOINC), Diagnosis Related Group (DRG), National Drug Codes (NDC), Diagnostic and Statistical Manual of Mental Disorders (DSM), Unified Medical Language System (UMLS).
- **Materials Management** – focus is resource life-cycle management, to include the following: acquire, receive, store, control, distribute, maintain, manage, prepare, and dispose of supplies, blood, equipment, and the associated data at fixed and deployed medical service locations. Materiel management includes reporting appropriate asset visibility and financial management information to higher authorities. Example: European Article Numbering (EAN) International EAN-13.

5.1.3 Security

This category presents standards related to confidentiality, integrity, authentication, non-repudiation, availability, and security management. Examples: Internet Engineering Task Force (IETF) Request for Comments (RFC) 4346, Transport Layer Security (TLS), Public Key Infrastructure (PKI), Federal Information Processing Standard (FIPS) Publication 186-3 Digital Signature Standard, FIPS Publication 197 Advanced Encryption Standard (AES), and Organization for the Advancement of Structured Information Standards (OASIS) Security Assertion Markup Language (SAML).

5.1.4 Technical

This category presents standards related to the processing, transfer, and presentation of information. The following are suggested subcategories:

- **Communications** – promote seamless communications to include information transfer among networks, and the physical means by which the information is moved from one place to another. Examples: Transmission Control Protocol (TCP), File Transfer Protocol (FTP), Simple Mail Transfer Protocol (SMTP), Domain Name System (DNS), Video Conferencing (H.225, H.245, H.323,

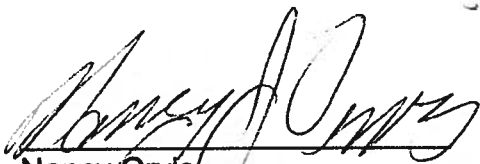
etc.), Internet Protocol Version 6 (IPv6), Lightweight Directory Access Protocol (LDAP), IEEE 802.11 Wireless LAN, Simple Object Access Protocol (SOAP).

- **Network and Systems Management** – provides capability to manage designated networks, systems and information services. Example: Simple Network Management Protocol (SNMP).
- **Information Processing** – provide the data formats and instruction-processing specifications required to represent and manipulate data to meet information technology (IT) mission needs. Examples: Software Products such as MS Word: Hypertext Markup Language (HTML): Extensible Markup Language (XML): Graphics Interchange Format (GIF): Web Services Description Language (WSDL): and Universal Description, Discovery and Integration (UDDI).

6 Review

The Target Department of Defense and Veteran Affairs Health Standards Profile is reviewed and updated annually. The DoD Government Point of Contact for the Target DoDVA Health Standards Profile is responsible for scheduling the annual review and update of this document.

7 Approval



Nancy Orvis
Co-Chair, HAIG
Department of Defense
Military Health System

Date: 19 Sept 2011



Paul Tibbits
Co-Chair, HAIG
Department of Veterans Affairs
Veterans Health Administration

Date: 21 Sept 11

Appendix A: DoD/VA Target Health Standards Profile

| Standards Relevant to Information Sharing | |
|--|--|
| Healthcare Information Technology Standards Panel (HITSP) Interoperability Specifications for the following Use Cases (Recognized 16 Jan 2009) | |
| Use Case | Selected Standards for Use Case |
| <p>Lab Results Reporting (EHR)</p> <p>The HITSP Interoperability Specification for this use case is located at: http://www.hitsp.org/default.aspx</p> | <p>Health Level 7 (HL7) v2.5 and v2.5.1 Health Level 7 (HL7) Clinical Document Architecture (CDA) Release 2.0 IETF RFC 2818, Hypertext Transfer Protocol (HTTP) over Transport Layer Security (TLS) HL7 Version 3 Standard: Role Based Access Control (RBAC) Healthcare Permissions Catalog, Release 1 Health Level Seven (HL7) Version 3.0 Privacy Consent related specifications IETF, RFC 1305 Network Time Protocol (Version 3) IHTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) Logical Observation Identifiers Names and Codes (LOINC) OASIS Security Assertion Markup Language (SAML) Version 2.0 OASIS WS-Federation Version 1.1 OASIS WS-Trust Version 1.3 OASIS eXtensible Access Control Markup Language (XACML) Version 2.0 Unified Code for Units of Measure (UCUM)</p> |
| <p>Visit, Utilization and Lab Result Data (BIO)</p> <p>The HITSP Interoperability Specification for this use case is located at: http://www.hitsp.org/default.aspx</p> | <p>Current Procedural Terminology (CPT-4) Health Level 7 (HL7) v2.5 and v2.5.1 Health Level 7 (HL7) Clinical Document Architecture (CDA) Release 2.0 HL7 Version 3 Standard: Role Based Access Control (RBAC) Healthcare Permissions Catalog, Release 1 Health Level Seven (HL7) Version 3.0 Privacy Consent related specifications IETF, RFC 1305 Network Time Protocol (Version 3) International Classification of Diseases, 10th Revision, Clinical Modifications (ICD-10-CM) International Classification of Diseases, 10th Revision, Procedure Coding System (ICD-10-PCS) IHTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) Logical Observation Identifiers Names and Codes (LOINC) NUJBC Uniform Bill Version 1992 (UB-92) Current UB Data Specification Manual Field 22, Patient Discharge Status, Codes OASIS Security Assertion Markup Language (SAML) Version 2.0 OASIS WS-Trust Version 1.3 OASIS WS-Federation Version 1.1 OASIS eXtensible Access Control Markup Language (XACML) Version 2.0 Unified Code for Units of Measure (UCUM)</p> |
| <p>Consumer Access to Clinical Information via Networks (CE)</p> <p>The HITSP Interoperability Specification for this use case is located at: http://www.hitsp.org/default.aspx</p> | <p>Health Level 7 (HL7) v2.5 and v2.5.1 Health Level 7 (HL7) Clinical Document Architecture (CDA) Release 2.0 Health Level 7 (HL7) Version 3.0 Continuity of Care Document (CCD) HL7 Version 3 Standard: Role Based Access Control (RBAC) Healthcare Permissions Catalog, Release 1 Health Level Seven (HL7) Version 3.0 Privacy Consent related specifications IETF, RFC 1305 Network Time Protocol (Version 3) IHTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) Logical Observation Identifiers Names and Codes (LOINC) OASIS Security Assertion Markup Language (SAML) Version 2.0 OASIS WS-Trust Version 1.3 OASIS WS-Federation Version 1.1 OASIS eXtensible Access Control Markup Language (XACML) Version 2.0 Unified Code for Units of Measure (UCUM)</p> |

| Standards Relevant to Information Sharing | |
|---|---|
| Healthcare Information Technology Standards Panel (HITSP) Interoperability Specifications for the following Use Cases (Recognized 16 Jan 2009) | |
| Use Case | Selected Standards for Use Case |
| <p>Emergency Responder Electronic Health Record</p> <p>The HITSP Interoperability Specification for this use case is located at: http://www.hitsp.org/default.aspx</p> | <p>Current Procedural Terminology (CPT-4) HL7 Version 3 Standard: Role Based Access Control (RBAC) Healthcare Permissions Catalog, Release 1 Health Level 7 (HL7) v3.0 Clinical Document Architecture (CDA) Release 2.0 Health Level 7 (HL7) Version 3.0 Continuity of Care Document (CCD) Health Level Seven (HL7) Version 3.0 Privacy Consent related specifications International Classification of Diseases, 10th Revision, Clinical Modifications (ICD-10-CM) International Classification of Diseases, 10th Revision, Procedure Coding System (ICD-10-PCS) IHTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) IETF, RFC 1305 Network Time Protocol (Version 3) Logical Observation Identifiers Names and Codes (LOINC) NUBC Uniform Bill Version 1992 (UB-92) Current UB Data Specification Manual Field 22, Patient Discharge Status, Codes OASIS Security Assertion Markup Language (SAML) Version 2.0 OASIS WS-Trust Version 1.3 OASIS WS-Federation Version 1.1 OASIS eXtensible Access Control Markup Language (XACML) Version 2.0 W3C Simple Object Access Protocol (SOAP) Version 1.2 Unified Code for Units of Measure (UCUM)</p> |
| <p>Consumer Access to Clinical Information via Media (CE)</p> <p>The HITSP Interoperability Specification for this use case is located at: http://www.hitsp.org/default.aspx</p> | <p>DICOM Part 3.12: Media Formats and Physical Media for Media Interchange Health Level 7 (HL7) v2.5 and v2.5.1 HL7 Version 3 Standard: Role Based Access Control (RBAC) Healthcare Permissions Catalog, Release 1 Health Level 7 (HL7) v3.0 Clinical Document Architecture (CDA) Release 2.0 Health Level 7 (HL7) Version 3.0 Continuity of Care Document (CCD) Health Level Seven (HL7) Version 3.0 Privacy Consent related specifications IHTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) IETF, RFC 1305 Network Time Protocol (Version 3) ISO 9660, Volume and file structure of CD-ROM for information interchange Logical Observation Identifiers Names and Codes (LOINC) National Library of Medicine (NLM) Unified Medical Language System (UMLS) RxNorm OASIS Security Assertion Markup Language (SAML) Version 2.0 OASIS WS-Trust Version 1.3 OASIS WS-Federation Version 1.1 OASIS eXtensible Access Control Markup Language (XACML) Version 2.0 Unified Code for Units of Measure (UCUM)</p> |
| <p>Quality</p> <p>The HITSP Interoperability Specification for this use case is located at: http://www.hitsp.org/default.aspx</p> | <p>Current Procedural Terminology (CPT-4) Centers for Medicare and Medicaid Services (CMS) National Provider Identifier (NPI) Digital Imaging and Communications in Medicine (DICOM) - Part 16: Content Mapping Resource Health Level Seven (HL7) Version 3.0 Privacy Consent related specifications HL7 Version 3 Standard: Role Based Access Control (RBAC) Healthcare Permissions Catalog, Release 1 International Classification of Diseases, 10th Revision, Clinical Modifications (ICD-10-CM) International Classification of Diseases, 10th Revision, Procedure Coding System (ICD-10-PCS) IHTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) IETF, RFC 1305 Network Time Protocol (Version 3) Logical Observation Identifiers Names and Codes (LOINC) NUBC Uniform Bill Version 1992 (UB-92) Current UB Data Specification Manual Field 22, Patient Discharge Status, Codes OASIS Security Assertion Markup Language (SAML) Version 2.0 OASIS WS-Trust Version 1.3 OASIS WS-Federation Version 1.1 OASIS eXtensible Access Control Markup Language (XACML) Version 2.0 W3C Simple Object Access Protocol (SOAP) Version 1.2 Unified Code for Units of Measure (UCUM)</p> |

| Standards Relevant to Information Sharing | |
|---|---|
| Category/Sub-category | Standards |
| Message Format | Health Level 7 (HL7) v2.5.1 or higher. ^{1,2,3} |
| Service Area | ASC X12N005010X279: 2008, Health Care Eligibility Benefit Inquiry and Response (270/271) ASC X12N005010X212: 2006, Health Care Claim Status Request and Response (276/277) ASC X12N005010X212E1: 2008, Health Care Claim Status Request and Response (276/277) Errata ASC X12N005010X217: 2006, Health Care Services Review: Request for Review and Response (278) ASC X12N005010X217E1: 2008, Health Care Services Review: Request for Review and Response (278) ASC X12N005010X218: 2007, Payroll Deducted and Other Group Premium Payment for Insurance Products (820) ASC X12N005010X220: 2006, Benefit Enrollment and Maintenance (834) ASC X12N005010X221: 2006, Health Care Claim: Payment/Advice (835) ASC X12N005010X222: 2006, Health Care Claim: Professional ASC X12N005010X223: 2006, Health Care Claim: Institutional ASC X12N005010X224: 2006, Health Care Claim: Dental (837) ASC X12N005010X223A1: 2007, Health Care Claim: Institutional (837) Errata ASC X12N005010X224A1: 2007, Health Care Claim: Dental (837) Errata |
| Content and Structure | NCPDP Telecommunication Standard Implementation Guide, vD.0:2007 Health Level 7 (HL7) v2.5.1 or higher. ^{1,2,3} Digital Imaging and Communications in Medicine (DICOM);2008 |
| Medical Imagery EDI | Health Level Seven (HL7) EHR System Functional Model v1.1 or higher Health Level 7 (HL7) Version 3.0 Continuity of Care Document (CCD) ^{1,3} Health Level 7 (HL7) Version 3.0 Clinical Document Architecture (CDA) Release 2.0 ^{1,3} |
| Content and Structure | Health Level Seven (HL7) EHR System Functional Model v1.1 or higher Health Level 7 (HL7) Version 3.0 Continuity of Care Document (CCD) ^{1,3} Health Level 7 (HL7) Version 3.0 Clinical Document Architecture (CDA) Release 2.0 ^{1,3} |
| Content and Structure | Health Level Seven (HL7) EHR System Functional Model v1.1 or higher Health Level 7 (HL7) Version 3.0 Continuity of Care Document (CCD) ^{1,3} Health Level 7 (HL7) Version 3.0 Clinical Document Architecture (CDA) Release 2.0 ^{1,3} |
| Content and Structure | Health Level Seven (HL7) EHR System Functional Model v1.1 or higher Health Level 7 (HL7) Version 3.0 Continuity of Care Document (CCD) ^{1,3} Health Level 7 (HL7) Version 3.0 Clinical Document Architecture (CDA) Release 2.0 ^{1,3} |

¹ = This standard is also identified in one of the Healthcare Information Technology Standards Panel (HITSP) Interoperability Specifications. Please refer to the appropriate HITSP Interoperability Specification for additional guidance on implementation and context for which the standard is used. Application of this standard for DoD/VA sharing initiatives may be broader than the recommended HITSP implementation.

² = HITSP has endorsed both HL7 v2.5.1 messaging and HL7 v3.0 standards depending on the use case. The NwHIN uses HL7 v3.0 CDA Release 2.0 CCDs for exchange and is migrating toward using other HL7 v3.0 standards. The NwHIN will permit transport of HL7 v2.x messages by wrapping in a SOAP format.

³ = This standard is also identified in the "ONC Health Information Technology: Initial Set of Standards, Implementation Specifications and Certification Criteria for Electronic Health Information Technology" Final Rule dated 28 July 2010. Please see the Final Rule for additional guidance on this standard's applicability to meaningful use criteria. New versions of Minimum Standard Code sets for LOINC and CVX-Vaccines administered are approved by HIT Standards Committee twice a year typically in June and December.

| Standards Relevant to Information Sharing | |
|--|--|
| Category/Sub-category Data Representation Standards | Service Area Standards |
| Clinical Data Representation | <p>Clinical Document Identifiers</p> <p>Lab and Clinical Observation Codes</p> <p>Mental Disorder Codes</p> <p>Multiaxial Medical Nomenclature</p> <p>Outpatient Procedure</p> <p>Vital Signs</p> <p>Patient Diagnosis</p> |
| | <p>Logical Observation Identifiers Names and Codes (LOINC) ^{1,3} (Current Version)</p> <p>Logical Observation Identifiers Names and Codes (LOINC) ^{1,3} (Current Version)</p> <p>Diagnostic and Statistical Manual of Mental Disorders (DSM)-4th edition</p> <p>IHTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) ^{1,3}</p> <p>Current Procedural Terminology (CPT-4) ¹</p> <p>IHTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) ^{1,3}</p> <p>Logical Observation Identifiers Names and Codes (LOINC) ^{1,3} (Current Version)</p> <p>Unified Code for Units of Measure (UCUM) ¹</p> <p>IHTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) ¹</p> <p>a) Version 9 - Mortality (ICD-9, Volume 1); reference at ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/ICD-9/</p> <p>b) Morbidity (ICD-9-CM); reference at ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/ICD9-CM/</p> <p>International Classification of Diseases, 10th Revision, Clinical Modifications (ICD-10-CM) ¹</p> |

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| Standards Relevant to Information Sharing | | |
|---|---|---|
| Category/Sub-category | Service Area | |
| Clinical Data Representation | Dental Codes | Standards Current Dental Terminology, 5th edition (CDT-5) |
| | Ancillary Services Reporting and Claims Processing | Healthcare Common Procedure Coding System (HCPCS) Level II Code Set |
| | Revenue Codes and Workload Weights | Resource-Based Relative Value Scale (RBRVS) |
| | Demographics | Health Level 7 (HL7) v2.5.1 or higher ^{1,2,3} The Office of Management and Budget Standards for Maintaining, Collecting, and Presenting Federal Data on Race and Ethnicity, Statistical Policy Directive No. 15, October 30, 1997 ³ |
| | Lab Result Content | IHTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) ^{1,3} Unified Code for Units of Measure (UCUM) ¹ |
| | Interventions and Procedures: Non-Laboratory | IHTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) ^{1,3} International Classification of Diseases, 10th Revision, Procedure Coding System (ICD-10-PCS) ¹ Current Procedural Terminology (CPT-4) CDC, National Center for Health Statistics, National Health Interview Survey, Smoking Status Recodes http://www.cdc.gov/nchs/nhis/tobacco/tobacco_recodes.htm Logical Observation Identifiers Names and Codes (LOINC) ^{1,3} (Current Version) |
| | Interventions and Procedures: Laboratory Ordered Test Names | RadLex 3.4 http://www.rsna.org/informatics/radlex.cfm |
| | Interventions and Procedures: Radiology | IHTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) ^{1,3} |
| | Functional Assessment | World Health Organization (WHO), International Classification of Functioning, Disability and Health (ICF) Unified Code for Units of Measure (UCUM) ¹ |
| | Units | Health Level 7 (HL7) v2.5.1 ³ and higher CVX ^{3,4} (Clinical Vaccine Formulation Administered update Feb 14 2011 (2 vaccines) and Mar 20, 2011 (1 vaccine)), MVX ¹ (Manufacturing Vaccine Formulation) |

¹ = This standard is also identified in one of the Healthcare Information Technology Standards Panel (HITSP) Interoperability Specifications. Please refer to the appropriate HITSP Interoperability Specification for additional guidance on implementation and context for which the standard is used. Application of this standard for DoD/VA sharing initiatives may be broader than the recommended HITSP implementation.

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⁴ = The Centers for Disease and Control Prevention (CDC) are the "Data Owners" and maintainers of updates. Updates can be obtained via the CDC website URLs: http://www.cdc.gov/nip/registry/st_terr/tech/stds/hl7-cvx.htm and http://www.cdc.gov/nip/registry/st_terr/tech/stds/hl7-mvx.htm.

| Standards Relevant to Information Sharing | |
|---|---|
| Category/Sub-category | Standards |
| Service Area Clinical Encounters a. Patient Registration (patient data, etc) b. Patient Discharge (discharge disposition, e.g., transferred, sent home, etc) Anatomy Diagnosis List Problem List Nursing Billing and Financial (HIPAA) | Health Level 7 (HL7) v2.5.1 Admission/Discharge/Transfer (ADT) ¹ Healthcare Provider Taxonomy Health Level 7 (HL7) v2.5.1 Admission/Discharge/Transfer (ADT) ¹ NUBC Uniform Bill Version 1992 (UB-92) Current UB Data Specification Manual Field 22, Patient Discharge Status, Codes ¹ HTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) ^{1,3} Health Level 7 (HL7) Vocabulary (General Practice) National Cancer Institute's (NCI) Thesaurus (Research and Clinical Trials) HTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) ^{1,3} http://www.nlm.nih.gov/research/umls/Snomed/snomed_main.html HTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) ^{1,3} http://evs.nci.nih.gov/ftp1/FDA/ProblemList Nursing Standardized Coded Languages integrated within Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) ¹ International Classification of Diseases, 10th Revision, Clinical Modifications (ICD-10-CM) ¹ International Classification of Diseases, 10th Revision, Procedure Coding System (ICD-10-PCS) ¹ National Drug Code (NDC) Healthcare Common Procedure Coding System (HCPCS) Level II Code Set Current Procedural Terminology (CPT-4) Current Dental Terminology, 5th edition (CDT-5) Diagnostic Related Group (DRG) |

¹ = This standard is also identified in one of the Healthcare Information Technology Standards Panel (HITSP) Interoperability Specifications. Please refer to the appropriate HITSP Interoperability Specification for additional guidance on implementation and context for which the standard is used. Application of this standard for DoD/VA sharing initiatives may be broader than the recommended HITSP implementation.

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| Standards Relevant to Information Sharing | | |
|---|--|---|
| Category/Sub-category | Service Area | |
| Clinical Data Representation | Allergies | Standards |
| | Drug | Unified Medical Language System Concept Unique Identifier (UMLS CUI) Food & Drug Administration (FDA) Unique Ingredient Identifier (UNII) Codes ¹ http://www.fda.gov/ForIndustry/DataStandards/SubstanceRegistrationSystem-UniqueIngredientIdentifierUNII/default.htm RxNorm ² Brand Names (BN) http://www.nlm.nih.gov/research/umls/rxnorm/docs/index.html |
| | a. Allergens (ingredients, generics, brands, over the counter (OTC), herbals, etc) | National Drug File Reference Terminology (NDF-RT) ³ http://evs.nci.nih.gov/ftp1/NDF-RT/NDF-RT%20Documentation.pdf |
| | Classifications – (chemical structure, therapeutic, pharmacologic, Mechanism of Action, etc) | IHTSDO Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) ⁴ |
| | Allergy Reactions, Type & Severity (rash, anaphylaxis, wheezing, rhinitis, urticaria, etc) | |
| | Medications | |
| | Drug Classifications (only for: | National Drug File Reference Terminology (NDF-RT) ⁵ http://evs.nci.nih.gov/ftp1/NDF-RT/NDF-RT%20Documentation.pdf |
| | a. Mechanism of Action | National Drug File Reference Terminology (NDF-RT) ⁵ http://evs.nci.nih.gov/ftp1/NDF-RT/NDF-RT%20Documentation.pdf |
| | b. Physiologic Effect | National Drug File Reference Terminology (NDF-RT) ⁵ http://evs.nci.nih.gov/ftp1/NDF-RT/NDF-RT%20Documentation.pdf |
| | Active Ingredients | Licensed: Food & Drug Administration (FDA) Established Names (for active ingredient) and Food & Drug Administration (FDA) Unique Ingredient Identifier (UNII) Codes http://www.fda.gov/ForIndustry/DataStandards/SubstanceRegistrationSystem-UniqueIngredientIdentifierUNII/default.htm Poison, Toxic Releases or Unlicensed Investigational Products International Union of Pure and Applied Chemists (IUPAC) Names |

¹ = These standards are included as part of the Federal Medication Terminologies. Additional information can be obtained via the National Cancer Institute's URL: <http://www.cancer.gov/cancertopics/terminology/resources/page4>.

³ = This standard is also identified in the "ONC Health Information Technology: Initial Set of Standards, Implementation Specifications and Certification Criteria for Electronic Health Information Technology" Final Rule dated 28 July 2010. Please see the Final Rule for additional guidance on this standard's applicability to meaningful use criteria. New versions of LOINC are released twice a year, typically in June and December.

⁴ = The Centers for Disease and Control Prevention (CDC) are the "Data Owners" and maintainers of updates. Updates can be obtained via the CDC website URLs: http://www.cdc.gov/nip/registry/st_terr/tech/stds/h17-cvx.htm and http://www.cdc.gov/nip/registry/st_terr/tech/stds/h17-mvx.htm

⁵ = These standards are included as part of the Federal Medication Terminologies. Additional information can be obtained via the National Cancer Institute's URL: <http://www.cancer.gov/cancertopics/terminology/resources/page4>.

| Standards Relevant to Information Sharing | |
|---|---|
| Category/Sub-category | Service Area |
| | <p>Routes of Administration</p> <p>Dosage Forms</p> <p>Units of Presentation</p> <p>Manufactured Dosage Form</p> <p>Product Name/Code</p> <p>Package Name/Code</p> <p>Clinical Drug</p> <p>Structured Product Labeling Sections</p> |
| | <p>Standards</p> <p>Food & Drug Administration (FDA) Center for Drug Evaluation and Research (CDER) Routes of Administration http://www.fda.gov/Drugs/DevelopmentApprovalProcess/FormsSubmissionRequirements/ElectronicSubmissions/DataStandardsManualmonographs/ucm071667.htm</p> <p>Food & Drug Administration (FDA) Center for Drug Evaluation and Research (CDER) Dosage Form http://www.fda.gov/Drugs/DevelopmentApprovalProcess/FormsSubmissionRequirements/ElectronicSubmissions/DataStandardsManualmonographs/ucm071666.htm</p> <p>Food & Drug Administration (FDA) Structured Product Labeling Units of Presentation http://www.fda.gov/Drugs/DevelopmentApprovalProcess/FormsSubmissionRequirements/ElectronicSubmissions/DataStandardsManualmonographs/ucm071667.htm</p> <p>National Cancer Institute (NCI) Enterprise Vocabulary System (EVS) http://www.cancer.gov/cancertopics/terminology/resources/page5</p> <p>Food & Drug Administration (FDA) NDC Product Name/Code³</p> <p>National Cancer Institute (NCI) Enterprise Vocabulary System (EVS) http://www.cancer.gov/cancertopics/terminology/resources/page5</p> <p>Semantic Clinical Drug (SCD) of RxNorm,³ a portion of the Unified Medical Language System (UMLS)⁴ http://www.nlm.nih.gov/research/umls/rxnorm/</p> <p>Clinical SPL (Structured Product Label) – Logical Observation Identifier Name Codes (LOINC)⁵ http://www.fda.gov/ForIndustry/DataStandards/StructuredProductLabeling/default.htm</p> |

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⁵ = These standards are included as part of the Federal Medication Terminologies. Additional information can be obtained via the National Cancer Institute's URL:
<http://www.cancer.gov/cancertopics/terminology/resources/page4>

| Standards Relevant to Information Sharing | |
|---|---|
| Category/Sub-category | Service Area |
| | <p>Genes</p> <p>Human Genome Organization (HUGO) Human Gene Nomenclature (HUGN) http://www.genenames.org/</p> <p>Chemicals (Conditional based on addressing the healthcare requirements for access and use of the Environmental Protection Agency (EPA) system.)</p> <p>Environmental Protection Agency (EPA) Substance Registry System (SRS) (Provides a common basis/nomenclature for identification of non-medication chemicals, biological organisms and other substances.) http://iaspub.epa.gov/sor_internet/registry/substreg/home/overview/home.do</p> |
| | <p>Service Area</p> <p>Product Identification</p> <p>Object and Data Modeling</p> |
| Category/Sub-category Materials Management Information Modeling and Metadata | <p>Standards</p> <p>European Article Numbering (EAN) International – EAN-13</p> <p>OMG Business Process Modeling Notation (BPMN) v2.0</p> <p>OMG Unified Modeling Language (UML) Superstructure, Version 2.2</p> <p>Meta Object Facility (MOF) 2.0/XML Metadata Interchange (XMI) Mapping, v2.1.1, formal/2007-12-01</p> |
| Security Standards⁶ Category/Sub-category | <p>Standards</p> <p>Authentication</p> <p>IETF RFC 2228, FTP Security Extensions⁶</p> <p>IETF RFC 2865, RADIUS</p> <p>IETF RFC 2289, One-Time Password System</p> <p>IETF RFC 2587, Internet X.509 PKI LDAPv2 Schema</p> <p>IETF RFC 3852, Cryptographic Message Syntax (CMS)</p> <p>IETF RFC 3748, Extensible Authentication Protocol (EAP)</p> <p>IETF RFC 4120, The Kerberos Network Authentication Service (V5)</p> <p>IETF RFC 4302, IP Authentication Header (AH)</p> <p>X.509 Certificates</p> <p>IETF RFC 5280, Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile</p> <p>ISO/IEC 7816-1, Integrated Circuit(s) cards with contacts</p> <p>ISO/IEC 7816-7, Interindustry commands for Structured Card Query Language (SCQL)</p> <p>ISO/IEC 7816-8:2004, Security Related Inter-industry Commands</p> <p>ISO/IEC 7816-9:2004, Additional Inter-industry Commands and Security Attributes</p> <p>ISO/IEC 7816-10:1999, Electronic signals and answer to reset for synchronous cards</p> <p>ISO/IEC 7816-11:2004, Personal verification through biometric methods</p> <p>ISO/IEC 7816-15:2004/Cor. 1:2004</p> <p>FIPS PUB 198-1, Keyed-Hash Message Authentication Code</p> <p>FIPS PUB 201-1, Personal Identity Verification (PIV) of Federal Employees and Contractors</p> |

⁶ = Because of increased security awareness within the DoD, the use of FTP with sensitive data (e.g., Personal Health Information and Personal Identifiable Information) is only authorized for use in a FTP over Transport Layer Security session which includes the use of IETF RFCs 959, 2228 and 4346.

| Standards Relevant to Information Sharing | |
|---|---|
| Category/Sub-category Security Standards ³ | Service Area |
| | Standards |
| | Access Control |
| | Data Integrity and Non-repudiation |
| | <p>ANSI INCITS 359-2004: Role Based Access Control (RBAC)</p> <p>OASIS eXtensible Access Control Markup Language (XACML) v2.0</p> <p>OASIS Cross-Enterprise Security and Privacy Authorization (XSPA) Profile of Security Assertion Markup Language (SAML) for Healthcare v1.0</p> <p>OASIS Cross-Enterprise Security and Privacy Authorization (XSPA) Profile of XACML v2.0 for Healthcare v1.0</p> <p>OASIS Security Assertion Markup Language (SAML) Version 2.0 HL7 Version 3 Standard: Role-based Access Control Healthcare Permission Catalog, Release 2</p> <p>OASIS WS-Trust, Version 1.3</p> <p>FIPS Pub 180-3, Secure Hash Standard³</p> <p>FIPS Pub 186-3, Digital Signature Standard</p> <p>IETF RFC 2228, FTP Security Extensions⁷</p> <p>IETF RFC 4346, Transport Layer Security (TLS) v1.1⁷</p> <p>IETF RFC 3850, S/MIME v3.1, Certificate Handling</p> <p>IETF RFC 2634 Enhanced Security Services for S/MIME</p> <p>IETF RFC 4302, IP Authentication Header</p> <p>IETF RFC 4303, IP Encapsulating Security Payload (ESP)</p> <p>IETF RFC 4835, Cryptographic Algorithm Implementation Requirements for Encapsulating Security Payload (ESP) and Authentication Header (AH)</p> <p>IETF RFC 4306, Internet Key Exchange (IKEv2) Protocol</p> <p>IETF RFC 4307, Cryptographic Algorithms for use in the IKEv2</p> <p>ITU-T X.509:2005, Open Systems Interconnection - The Directory: Public-key and attribute certificate frameworks</p> |

³ = This standard is also identified in the "ONC Health Information Technology: Initial Set of Standards, Implementation Specifications and Certification Criteria for Electronic Health Information Technology" Final Rule dated 28 July 2010. Please see the Final Rule for additional guidance on this standard's applicability to meaningful use criteria. New versions of LOINC are released twice a year, typically in June and December.

⁶ = Because of increased security awareness within the DoD, the use of FTP with sensitive data (e.g., Personal Health Information and Personal Identifiable Information) is only authorized for use in a FTP over Transport Layer Security session which includes the use of IETF RFCs 959, 2228 and 4346.

⁷ = The recommended implementation for the Secure Hypertext Transfer Protocol (HTTPS) is Hypertext Transfer Protocol (HTTP) over Transport Layer Security (TLS).

| Standards Relevant to Information Sharing | |
|---|---|
| Security Standards³ Category/Sub-category | Standards |
| Service Area Confidentiality | FIPS Pub 197, Advanced Encryption Standard (AES) IETF RFC 2228, FTP Security Extensions ⁷ IETF RFC 4346, Transport Layer Security (TLS) v1.1 ⁷ IETF RFC 4835 Cryptographic Algorithm Implementation Requirements for Encapsulating Security Payload (ESP) and Authentication Header (AH) IETF RFC 5996, Internet Key Exchange (IKEv2) Protocol IETF RFC 4307, Cryptographic Algorithms for use in the IKEv2 certificate frameworks ITU-T X.509:2005, Open Systems Interconnection - The Directory, Public-key and attribute W3C XML Encryption Syntax and Processing OASIS Web Security v1.1 |
| Service Area Certification | ISO/IEC 15408, Evaluation Criteria for IT Security (Common Criteria) FIPS Pub 140-2, Security Requirements for Cryptographic Modules ³ |
| Service Area Network Security Management | IETF, RFC 1305 Network Time Protocol (Version 3) IETF RFC 2560, Internet PKI X.509 Online Certificate Status Protocol (OCSP) IETF RFC 3161, Internet X.509 PKI Time-Stamp Protocol (TSP) IETF RFC 4301, Security Architecture for the Internet Protocol ISO 8601 Data elements and interchange formats - Information interchange - Representation of dates and times |
| Technical Standards³ Category/Sub-category | Standards |
| Service Area Communications Collaborative Communications | ITU-T T.120: Data protocols for multimedia conferencing ITU-T T.123:1998 Multipoint Communications Service - Service Definition ITU-T T.123:1999, Network - Specific Data Protocol Stacks Multimedia Conferencing ITU-T T.124:1998 Generic Conference Control ITU-T T.125:1998 Multipoint Communications Service Protocol Specification ITU-T T.126:1997, Multipoint Still Image and Annotation Protocol ITU-T T.127, Multipoint Binary File Transfer Protocol ITU-T T.128, Multipoint Application Sharing |
| Service Area Directory Services | IETF Standard 13/RFC 1034/RFC1035, Domain Name System (DNS) IETF RFC 2136, Dynamic Updates in the Domain Name System (DNS) IETF RFC 3007, Secure DNS Dynamic Update IETF RFC 4510, Lightweight Directory Access Protocol (LDAP): Technical Specification Road Map IETF RFC 3596, DNS Extensions to Support IPv6 IETF RFC 3673, LDAPv3: All Operational Attributes ITU-T X.500:2001, Data Communication Networks Directory |

³ = This standard is also identified in the "ONC Health Information Technology: Initial Set of Standards, Implementation Specifications and Certification Criteria for Electronic Health Information Technology" Final Rule dated 28 July 2010. Please see the Final Rule for additional guidance on this standard's applicability to meaningful use criteria. New versions of LOINC are released twice a year, typically in June and December.

⁶ = Because of increased security awareness within the DoD, the use of FTP with sensitive data (e.g., Personal Health Information and Personal Identifiable Information) is only authorized for use in a FTP over Transport Layer Security session which includes the use of IETF RFCs 959, 2228 and 4346.

⁷ = The recommended implementation for the Secure Hypertext Transfer Protocol (HTTPS) is Hypertext Transfer Protocol (HTTP) over Transport Layer Security (TLS).

| Standards Relevant to Information Sharing | |
|---|---|
| Technical Standards Category/Sub-category | Standards |
| Service Area Internet Transport Services | <p> IETF Standard 7/IETF RFC 793, TCP IETF RFC 2581, TCP Congestion Control IETF Standard 9/RFC 959, FTP⁶ IETF RFC 1981, Path MTU Discovery for IPv6 IETF RFC 2460, Internet Protocol, Version 6 (IPv6) Specification IETF RFC 2464, Transmission of IPv6 Packet Over Ethernet Networks IETF RFC 2473, Generic Packet Tunneling in IPv6 Specification IETF RFC 2474, Definition of Differentiated Services Field (DS Field) in IPv4 and IPv6 Headers IETF RFC 2492, IPv6 over ATM Networks IETF RFC 2545, Use of BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain Routing IETF RFC 2710, Multicast Listener Discovery (MLD) for IPv6 IETF RFC 2784, Generic Routing Encapsulation (GRE) IETF RFC 3315, Dynamic Host Configuration Protocol for IPv6 (DHCPv6) IETF RFC 3484, Default Address Selection for Internet Protocol Version 6 (IPv6) IETF RFC 3810, Multicast Listener Discovery Version 2 (MLDv2) for IPv6 IETF RFC 4007, IPv6 Scoped Address Architecture IETF RFC 4022, IP Version 6 MIB for the Transmission Control Protocol (TCP) IETF RFC 4087, IP Tunnel MIB IETF RFC 4113, MIB for the User Datagram Protocol IETF RFC 4213, Transition Mechanisms for IPv6 Hosts and Routers IETF RFC 4291, IP Version 6 Addressing Architecture IETF RFC 4293, MIB for the Internet Protocol (IP) IETF RFC 4443, Internet Control Message Protocol (ICMPv6) for IPv6 Specification IETF RFC 5340, OSPF for IPv6 IETF RFC 4861, Neighbor Discovery for IP version 6 (IPv6) IETF RFC 4862, IPv6 Stateless Address Autoconfiguration IETF RFC 5072, IP Version 6 over PPP IETF Standard 5 (RFC 791, 950, 919, 922, 792, and 1112), IPv4 IETF Standard 3/RFC 1122/RFC 1123, Requirements for Internet Host IETF RFC 2131, Dynamic Host Configuration Protocol (DHCP) IETF RFC 3376, Internet Group Management Protocol v3 (IGMPv3) </p> |

⁶ = Because of increased security awareness within the DoD, the use of FTP with sensitive data (e.g., Personal Health Information and Personal Identifiable Information) is only authorized for use in a FTP over Transport Layer Security session which includes the use of IETF RFCs 959, 2228 and 4346.

| Standards Relevant to Information Sharing | |
|---|--|
| Technical Standards Category/Sub-category | Standards |
| Service Area File Transfer | IETF Standard 9/RFC 959, FTP ⁶ |
| Electronic Mail | IETF RFC 2428, FTP Extensions for IPv6 IETF RFC 1870 and 2821, Simple Mail Transfer Protocol IETF RFC 2822, Internet Message Format IETF RFC 2045-2049, MIME Standards (Parts 1-5) IETF RFC 2231, MIME Extensions IETF RFC 3851, S/MIME Version 3.1 Message Specification |
| Video Teleconferencing | ITU-T H.323:2000, Packet-based Multimedia Communications Systems ITU-T H.225:2000, Call Signaling Protocols and Media Stream Packetization for Packet-based Multimedia Communications Systems ITU-T H.261, Video CODEC for Audiovisual Services at p x 64 Kbps ITU-T H.245 (1/2000) Control Protocol for Multimedia Communications ITU-T Rec. H.264:2009, Advanced video coding for generic audiovisual service ITU-T G.711, Pulse Code Modulation (PCM) of Voice Frequencies ITU-T G.722.1:2005, Low-complexity coding at 24 and 32 kbit/s for hands-free operation in systems with low frame loss ITU-T G.728, Coding of Speech at 16 kbit/s using Low-Delay Code Excited Linear Prediction (LD-CELP) ITU-T Recommendation T.81, Information technology - Digital compression and coding of continuous-tone still images ITU-T T.120: Data protocols for multimedia conferencing ITU-T T.122:1998 Multipoint Communications Service - Service Definition ITU-T T.123:1999, Network - Specific Data Protocol Stacks Multimedia Conferencing ITU-T T.124:1998 Generic Conference Control ITU-T T.125:1998 Multipoint Communications Service Protocol Spec ITU-T T.126:1997, Multipoint Still Image and Annotation Protocol ITU-T T.127, Multipoint Binary File Transfer Protocol ITU-T T.128, Multipoint Application Sharing |

⁶ = Because of increased security awareness within the DoD, the use of FTP with sensitive data (e.g., Personal Health Information and Personal Identifiable Information) is only authorized for use in a FTP over Transport Layer Security session which includes the use of IETF RFCs 959, 2228 and 4346.

| Standards Relevant to Information Sharing | |
|---|--|
| Technical Standards Category/Sub-category | Standards |
| Service Area Wireless | IEEE 802.11:2007 Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications |
| Ethernet Standards | IEEE 802.3-2008 Standard for information technology - Specific Requirements, Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications |
| Object Management Services | W3C Simple Object Access Protocol (SOAP) v1.2, Part 1: Messaging Framework W3C Simple Object Access Protocol (SOAP) v1.2, Part 2: Adjuncts |
| Web Services | IETF RFC 2616, Hypertext Transfer Protocol (HTTP) v1.1 OASIS eXtensible Access Control Markup Language (XACML) v2.0 OASIS Security Assertion Markup Language (SAML) v2.0 OASIS SPML v2.0: Service Provisioning Markup Language (SPML) Version 2.0 OASIS WS-Base Notification 1.3 W3C WS-Addressing 1.0 - Core W3C WS-Addressing 1.0 - Metadata W3C WS-Addressing 1.0 SOAP Binding OASIS Universal Description, Discovery and Integration (UDDI) v3.0.2 WS-Security 1.1, Web Services Security W3C Cascading Style Sheets, Level 2 (CSS2) W3C Document Object Model (DOM) Level 3 Core Specification v1.0 W3C Extensible Hypertext Markup Language (XHTML) v1.1:2001 W3C Extensible Stylesheet Language Transformations (XSLT) v1.0 W3C Namespaces in XML v1.1 W3C XML Encryption Syntax and Processing W3C XML Path Language v1.0 (XPath) W3C extensible Markup Language (XML) v1.0 (Third Edition) W3C XML Schema Part 1:2004: Structures W3C XML Schema Part 2:2004: Datatypes W3C XQuery 1.0:2007 WS-Reliable Messaging 1.2 W3C Web Services Description Language (WSDL) v1.1 Web Services Interoperability (WS-I) Basic Profile 1.1 |
| Network and Systems Management | IEEE 802.1Q-2005, IEEE Standards For Local and Metropolitan Area Networks - Virtual Bridged Local Area Networks IETF RFC 3411, An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks IETF RFC 3412, Message Processing and Dispatching for the SNMP IETF RFC 3413, SNMP Applications IETF RFC 3414, User-based Security Model (USM) for version 3 of SNMPv3 IETF RFC 3415, View-based Access Control Model (VACM) for SNMP IETF Standard 62/IETF RFC 3416, Version 2 of the Protocol Operations for the SNMP IETF Standard 62/IETF RFC 3417, Transport Mappings for the SNMP IETF Standard 62/IETF RFC 3418, Management Information Base (MIB) for the SNMP IETF Standard 58/IETF RFC-2578, April 1999, Structure of Management Information Version 2 (SMIV2) |
| Systems Management | |

| Standards Relevant to Information Sharing | |
|---|--|
| Technical Standards Category/Sub-category | Standards |
| Information Processing | <p>Service Area Document Distribution Format</p> <p>MS Word (.doc), ISO 32000-1 Portable Document Format (pdf) v1.7 Rich Text Format (.rtf)</p> |
| | <p>Graphics Data Interchange</p> <p>ISO/IEC 8632, Computer Graphics Metafile (CGM) Parts 1 and 3 JPEG 2000 Core Coding System ISO/IEC 15444-1:2004 ITU-T Rec. T.800 ANSI/ISO/IEC 9636 Computer Graphics-Interfacing (CGI) Parts 1 thru 6</p> |
| | <p>Graphics Services</p> <p>ECMA-262:2009, ECMAScript Language Specification, 5th edition</p> |
| | <p>User Interface Services</p> <p>ISO/IEC 13818-1:2007 w/ Cor 1:2008, Information technology – Generic coding of moving pictures and associated audio information</p> |
| | <p>Video Compression</p> <p>ISO/IEC 13818-2:2000, Information technology - Generic coding of moving pictures and associated audio information ISO/IEC 13818-3:1998, Information technology - Generic coding of moving pictures and associated audio information</p> |
| | <p>Document Interchange</p> <p>W3C Hypertext Transfer Markup Language (HTML) v4.01 W3C eXtensible Markup Language (XML) v1.0 (Third Edition) W3C Namespaces in XML v1.1 W3C Web Services Description Language (WSDL) v1.1 OASIS Universal Description, Discovery and Integration (UDDI) v3.0.2 W3C Extensible Stylesheet Language (XSL) v1.0 W3C RDF Vocabulary Description Language 1.0: RDF Schema W3C RDF/XML Syntax Specification (Revised) SOAP MTOM, SOAP Message Transmission Optimization Mechanism SPARQL Query Language for RDF:2008 W3C XML Forms v1.0 (XFORMS)</p> |

Appendix B: Service Area Descriptions

Access Control – Provides the interfaces and services required to define and restrict the rights of individuals or application programs, processes, and other systems from using protected systems resources in accordance with applicable security and privacy policy.

Accountability - Provides proof that a user accessed a particular resource at a particular time.

Active Ingredients - A substance responsible for the effects of a medication.

Anatomy – Describes anatomical locations for clinical, surgical, pathological and research purposes.

Ancillary Services Reporting and Claims Processing - The process of reporting workload such as laboratory, pharmacy, and radiology along with billing type information.

Authentication - Ensures system entities (processes, systems, and personnel) are who they say they are, and verifies that the identities of connected entities and the sources of received information are valid.

Billing and Financial - Services where charges are applied for health care received or to cover enrollment in health care plans.

Certification - A process to evaluate the information technology security status of a system to ensure it meets the minimum security requirements or adequately addresses the risks if requirements are not met. Also includes the evaluation of IT products and systems against specified security requirements.

Chemicals - Chemical substances of importance to health care outside of medications. Found in the workplace or the environment that might be related to health.

Clinical Document Identifiers - The clinical document identifier represents the unique instance identifier of a clinical document.

Clinical Drug - A name for a pharmaceutical preparation consisting of its component(s), defined as active ingredients and their strength, together with the dose form of the drug as given to the patient.

Clinical Encounters - Instances of direct provider/practitioner to patient interaction, regardless of the setting, between a patient and a practitioner vested with primary responsibility for diagnosing, evaluating, or treating the patient's condition, or both, or providing social worker services. Contacts between a patient and a practitioner who has primary responsibility for assessing and treating the patient at a given contact, exercising independent judgment.

Clinical Information Electronic Data Interchange - The electronic exchange of health information pertaining to the care of a patient in a standardized, digital, computer-readable format.

Collaborative Communications - Provide for interoperability; reliable data delivery; multicast enabled delivery; network transparency; platform, application and network independence; scalability; support for varied topologies; and co-existence with other systems.

Common Information Model - An open standard that defines how managed elements in an IT environment are represented as a common set of objects and the relationships between them.

Confidentiality - Services that protect against the disclosure of private or sensitive information to entities not authorized to have that information.

Data Integrity and Non-repudiation - Data integrity services protect data from corruption by unauthorized modification or addition of records. Non-repudiation services ensure that senders and recipients cannot deny the origin or delivery of data.

Data Management Services - Make it possible to access any data from any application, regardless of which database management system is handling the data.

Demographics (Patient) - Facts about a member of the beneficiary population such as address, phone number, occupation, sex, age, race, mother's maiden name, father's name, SSN, etc.

Dental Codes - Diagnostic codes for dental treatment and disorders to assist with medical record keeping.

Diagnosis and Problem Lists - A series of brief statements that catalog a patient's medical, nursing, dental, social, preventative, and psychiatric events and issues that are relevant to that patient's health care (e.g., signs, symptoms, and defined conditions).

Directory Services - A service that helps people and applications find the names and addresses of objects and services available to an application.

Document Distribution Format - Formats (e.g., .pdf, .doc) that allow a user to display documents for viewing in specific applications, such as Adobe Acrobat or Microsoft Word.

Document Interchange - The electronic interchange of documents with mixed-mode hypertext document structure and content.

Dosage Form - A dosage form is the physical form in which a drug is produced and dispensed, such as a tablet, a capsule, or an injectable.

Drug Classification - Structures to categorize medications, such as: mechanism of action, physiologic effects, intended therapeutic use, chemical structures, pharmacological properties, and FDA approved indications.

Electronic Mail - Provides the capability to send, receive, forward, store, display, and manage electronic messages.

Ethernet Standards - Networking standards supporting data transfer rates up to 10, 100, and 1000 Mbps.

Functional Assessment – A measurement of body functions and structures, impairments, activities and participation, activity limitations, participation restrictions, and environmental factors (physical, social, attitudinal) in order to describe or classify functioning and disability.

Genes - Stretches of deoxyribonucleic acid (DNA) that are transcribed to messenger ribonucleic acid (mRNA) and then translated to proteins.

Graphics Data Interchange - The transmission of compressed graphic data files over a network or the Internet.

Graphics Services - Provides functions required for creating, storing, retrieving, and manipulating two- and three-dimensional images in a device-independent manner.

Healthcare Business EDI - As used in this assessment, the electronic exchange of business data (insurance, eligibility, and managed care information) in a standardized, digital, computer-readable format.

Immunization - Information regarding immunization encounters, vaccine events, patient records, and other immunization-related information important to immunization registries.

Immunization Clinical Content - Information providing the clinical vaccine formulation and manufacturer codes for immunization registries.

Internet Transport Services - A variety of functions concerned primarily with the end-to-end transmission of data across the Internet, and end-to-end reliability.

Interventions and Procedures: Non-laboratory, Non-radiology - Specific non-laboratory and non-radiology interventions and procedures. Interventions represent the purposeful activities performed in the provision of health care. Procedures are concepts that represent the purposeful activities performed in the provision of health care.

Interventions and Procedures: Laboratory Ordered Test Name – The name of a specific laboratory intervention or and procedure used to place a clinical order.

Interventions and Procedures: Radiology – A medical procedure involving the delivery of diagnostic imaging services.

Lab and Clinical Observation Codes - Made up of the analytical result or observation itself; result units if applicable; reference ranges and/or indicator flags if applicable; any associated comments and/or interpretations, any other information reported with the result, and a code describing the nature of the analysis.

Manufactured Dosage Form - The way of identifying a drug in its physical form.

Medical Still-Imagery EDI - The electronic exchange of radiological or other medical images in a standardized, digital, computer-readable format.

Medications - Those products intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease, manifestations or symptoms of disease, or alter structure/function of the body.

Mental Disorder Codes - Diagnostic codes for mental disorders to assist with medical record keeping.

Multi-axial Medical Nomenclature - Combining medical terms belonging to different classes and assigning codes to medical concepts that can be combined according to specific rules to form more complex concepts.

Network Security Management - In network management, the set of functions (a) that protect telecommunications networks and systems from unauthorized access by persons, acts, or influences and (b) that include many sub-functions, such as creating, deleting, and controlling security services and mechanisms; distributing security-relevant information; reporting security-relevant events; controlling the distribution of cryptographic keying material; and authorizing subscriber access, rights, and privileges. Source: ANSI T1.523-2001 Glossary of Telecommunications Terms.

Nursing - The provision of services by or under the direction of a nurse to patients requiring assistance in recovering or maintaining their physical or mental health.

Object and Data Modeling - The analysis of data objects, their relationships to other data objects, and development of data definition standards. The analysis and modeling of business activities, functions, or services and their relationships.

Object Management Services - Network-based application services to facilitate the sharing of data, functionality, and logic between applications in a decentralized, distributed environment.

Outpatient Procedure - A clinical procedure usually performed without the patient being admitted to a hospital.

Package Name/Code - The name or code associated with any container or wrapping in which any drug is enclosed for use in the delivery or display of such commodities to retail purchasers.

Patient Diagnosis - A clinical classification describing the health condition of a patient.

Product Name/Code - The name or code associated with a drug product which is one or more finished dosage forms, each of which contains one or more ingredients.

Revenue Codes and Workload Weights - Entities used for billing applications and assignment of costs to medical care activities.

Routes of Administration - Provides the path by which a drug or substance is taken into the body (i.e., by mouth, injection, inhalation, rectum, or by application).

Structured Product Labeling Sections - Labeling content that includes the approved indications, effects, dosages, routes, methods, frequency and duration of administration, relevant warnings, hazards, contraindications, side effects, precautions and other information.

Special Populations - Subgroups of the population using medications for the treatment or prevention of medical conditions.

Systems Management - Systems management incorporates the basic concepts of management, including operation, administration, and maintenance, which then may be applied to the full suite of Open System Environment (OSE) components along with their attendant services. System Management Services include: state management services performance, fault management services, user/group management services, usage management and cost allocation services, and other management services.

Text-based Reports - Clinical documents such as reports of medical history and physical examination, progress notes, and clinical results.

Units - Units of measure, such as Celsius or mg/ml, that are intended to be combined with a specific value to accurately express an amount.

Units of Presentation – The guidelines of pharmaceutical preparation; and the frequency, length, quantity, and measurement of the dosage.

User Interface Services - User interface services define how users may interact with an application. They provide a consistent way for people who develop, administer, and use a system to gain access to applications programs, operating systems, and various system utilities. The user interface is a combination of menus, screen design, keyboard commands, command language, and help screens which create the way a user interacts with a computer. User interface services make use of drivers for mice, touch screens, and other input hardware. Depending on the capabilities required by users and the applications, these interfaces may include the following: graphical client-server operations, object definition and management services, character-based user interface, window management specifications, and user interfaces.

Video Compression - The compression of video signals for both storage and transmission of digital moving images.

Vitals – Describe observed or measured characteristics of a patient that assess clinical functions important to patient care (e.g., blood pressure, pain, weight, color, reflexes, etc.)

Web Services – A software system designed to support interoperable machine-to-machine interaction over a network. It has an interface described in a machine-processable format (specifically WSDL).

Wireless - Supports the transmission of data without cabling connections using diffused infrared, direct sequence, or frequency hopping spread spectrum.

Appendix C: Framework for Target DoD/VA Health Standards Profile

| Standards Relevant to Information Sharing | | |
|--|---|-----------|
| Healthcare Information Technology Standards Panel (HITSP) Interoperability Specifications for the following Use Cases (Recognized 23 Jan 2008) | | |
| Use Case | Standards for Use Case | |
| Lab Results Reporting (EHR) | | |
| Visit, Utilization and Lab Result Data (BIO) | | |
| Consumer Access to Clinical Information via Networks (CE) | | |
| Emergency Responder Electronic Health Record | | |
| Consumer Access to Clinical Information via Media (CE) | | |
| Quality | | |
| Category/Sub-category | Service Area | Standards |
| Information Standards | | |
| Message Format | Clinical Information Electronic Data Interchange (EDI) | |
| | Healthcare Business EDI | |
| | Medical Imagery EDI | |
| Content and Structure | Text-based Reports | |
| Data Representation Standards | | |
| Clinical Data Representation | Clinical Document Identifiers | |
| | Lab and Clinical Observation Codes | |
| | Mental Disorder Codes | |
| | Multiaxial Medical Nomenclature | |
| | Outpatient Procedure | |
| | Vital Signs | |
| | Patient Diagnosis | |
| | Dental Codes | |
| | Ancillary Services Reporting and Claims Processing | |
| | Revenue Codes and Workload Weights | |
| | Demographics | |
| | Lab tests and Clinical Observation Codes | |
| | Interventions and Procedures: Non-Laboratory | |
| | Interventions and Procedures: Laboratory Ordered Test Names | |
| | Interventions and Procedures: Radiology | |
| | Functional Assessment | |
| | Units Immunizations - Clinical Content Vaccines | |
| | Clinical Encounters a. Patient Registration (patient data, etc) | |

| Category/Sub-category | Service Area | Standards |
|-----------------------------------|---|-----------|
| | b. Patient Discharge (discharge disposition, e.g., transferred, sent home, etc) | |
| | Anatomy | |
| | Diagnosis and Problem Lists Nursing | |
| | Allergies | |
| | Drug b. Allergens (ingredients, generics, brands, over the counter (OTC), herbals, etc) c. Classifications – (chemical structure, therapeutic, pharmacologic, Mechanism of Action, etc) | |
| | Allergy Reactions, Type & Severity (rash, anaphylaxis, wheezing, rhinitis, urticaria, etc) | |
| | Medications | |
| | Drug Classifications (only for: a. Mechanism of Action b. Physiologic Effect) | |
| | Active Ingredients (Conditional until Unique Ingredient Identifier (UNII) codes are available.) | |
| | Routes of Administration, Dosage Forms, and Units of Presentation | |
| | Manufactured Dosage Form | |
| | Product Name/Code | |
| | Package Name/Code | |
| | Clinical Drug | |
| | Structured Product Labeling Sections | |
| | Genes | |
| | Chemicals (Conditional based on addressing the healthcare requirements for access and use of the Environmental Protection Agency (EPA) system.) | |
| Materials Management | Product Identification | |
| Information Modeling and Metadata | Object and Data Modeling | |

| Security Standards | | |
|--------------------------------|------------------------------------|------------------|
| Category/Sub-category | Service Area | Standards |
| | Authentication | |
| | Access Control | |
| | Data Integrity and Non-repudiation | |
| | Confidentiality | |
| | Certification | |
| | Network Security Management | |
| Technical Standards | | |
| Communications | Collaborative Communications | |
| | Directory Services | |
| | Internet Transport Services | |
| | File Transfer | |
| | Electronic Mail | |
| | Video Teleconferencing | |
| | Wireless | |
| | Ethernet Standards | |
| | Object Management Services | |
| | Web Services | |
| Network and Systems Management | Systems Management | |
| Information Processing | Document Distribution Format | |
| | Graphics Data Interchange | |
| | Graphics Services | |
| | User Interface Services | |
| | Video Compression | |
| | Document Interchange | |