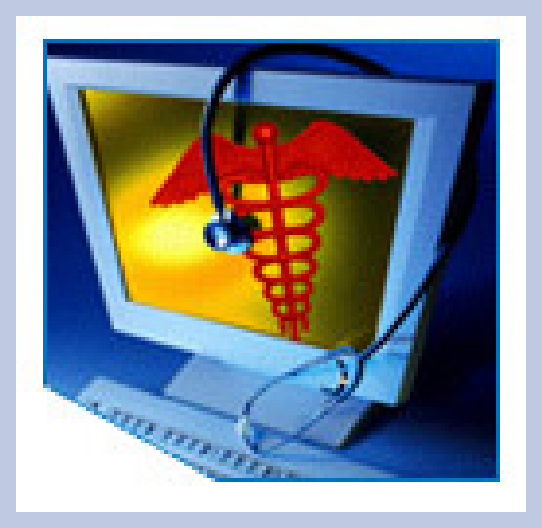
December 13, 2007
Version 2.1

HITSP Encounter Document Using IHE Medical Summary (XDS-MS) Component

HITSP/C48



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DOCUMENT CHANGE HISTORY

Version Number	Description of Change	Name of Author	Date Published
1.0	Initial draft	Biosurveillance Technical Committee	August 9, 2006
1.1	Ready for Public Comment	Biosurveillance Technical Committee	September 12, 2006
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2.0	Released for Implementation	Population Health Technical Committee	May 11, 2007
2.0.1	Review Copy	Population Health Technical Committee	December 5, 2007
2.1	Released for Implementation	Population Health Technical Committee	December 13, 2007

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FIGURES AND TABLES

1.0 INTRODUCTION

As an introduction to the HITSP Encounter Document Using IHE Medical Summary (XDS-MS) Component, this section provides a high level overview of the information sharing scenario enabled by following this specification, provides a document map of the construct relationships for this specification, acknowledges the copyright protections that pertain, and provides links to key reference documents and background material. If you are already familiar with this information, proceed to Section 2.0 Component Definition.

1.1 OVERVIEW

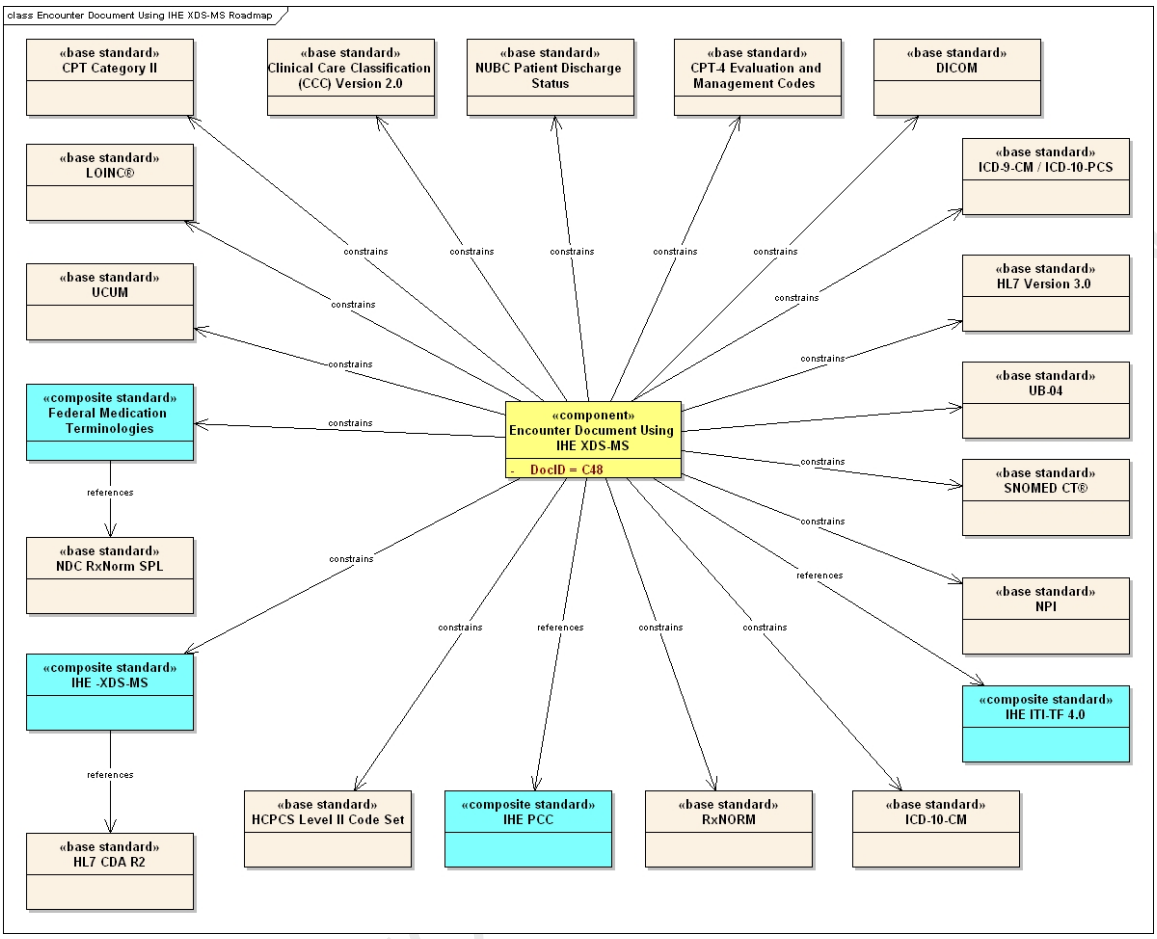
This section describes the contents of this specification and provides a high level definition of this Component and background information about the underlying standards that the Component is based on.

This Component supports the process of sending patient encounter data (excluding laboratory, radiology) in a document sharing functional flow scenario. Patient encounter data are captured as part of the normal process of care performed by healthcare providers, such as hospitals, emergency departments and outpatient clinics.

1.2 COMPONENT CONSTRUCT ROADMAP

Each HITSP Interoperability Specification (IS) is comprised of a suite of constructs that, taken as a whole, define how to integrate and constrain existing standards and specifications that will satisfy the requirements imposed by a given Use Case. The IS groups specific actions and actors to describe the relevant contexts using HITSP constructs that further identify and constrain standards where necessary. There are four types of HITSP constructs called Interoperability Specifications (IS), Transaction Packages (TP), Transactions (T), and Components (C). The current Encounter Document Using IHE Medical Summary (XDS-MS) Component specification is used with other constructs to meet the requirements of one or more ISs. Review Section 1.2 (Interoperability Specification Construct Roadmap) from the relevant IS to better understand the context, dependencies, and relationships between the constructs that are used to meet the IS requirements. The roadmap in Figure 1.2-1 depicts primary standards that are selected, constrained, or referenced to define the atomic constructs used in an information exchange, or to meet an infrastructure requirement. Implementers should read the documents that describe the standards represented in the diagram for their details and specific uses.

Figure 1.2-1 Component Construct Roadmap



1.3 COPYRIGHT PERMISSIONS

COPYRIGHT NOTICE

1.4 REFERENCE DOCUMENTS

This section contains links to key reference documents and background material.

The HITSP Interoperability Specification Overview provides the background information about the HITSP and its role in the overall U.S. efforts to realize large scale interoperability of health information. The document also provides a description of the HITSP process for healthcare standards harmonization and explains how to use the Interoperability Specifications and other related documents to inform your health IT product development or product refinement.

The conventions that are used to convey the full descriptions and usage of standards in the HITSP specifications are contained in the HITSP Conventions List.

The acronyms used in this document are contained in the HITSP Acronyms List.

The HITSP Glossary provides definitions for relevant terms used by HITSP documents.

The HITSP Harmonization Framework describes the current framework within which the Interoperability Specifications are built.

A Technical Note, TN900 - Security and Privacy, has been developed as a reference document to provide the overall context for use of the HITSP Security and Privacy constructs. It includes the following:

- The scope, reference policy background, and Security and Privacy principles used in the development of the constructs
- A detailed description and schematics of the conceptual relationship between the Security and Privacy constructs
- A mapping of existing standards and constructs to be used in meeting the stated requirements of the AHIC Use Cases
- A list of identified gaps and the recommended approaches to resolving those gaps
- A roadmap for how the Security and Privacy constructs will evolve and eventually align with other HITSP Interoperability Specifications
- A conceptual framework for Security and Privacy management, including reference information on privacy policies, risk assessment, and risk management
- A glossary of terms used in all the Security and Privacy construct documents

- A description of the application of the Security and Privacy constructs to the HITSP Interoperability Specifications for the three initial AHIC Use Cases – Biosurveillance, Electronic Health Records - Laboratory Results Reporting, and Consumer Empowerment

HITSP will periodically update this Technical Note as required by the introduction of new contexts for use.

2.0 COMPONENT DEFINITION

A Component defines atomic constructs used to support an information exchange or to meet an infrastructure requirement. This is accomplished by:

(a) Referencing one or more underlying standards
(b) Specifying constraints and other rules for using the standards

2.1 CONTEXT OVERVIEW

This section provides a general description of the Component. It includes a detailed definition of the Component and the reason for its use. It also provides all the necessary background information that further describes the context in which the Component is needed, and the base or composite standard that the Component is based on.

As stated in IHE PCC-TF:

The text for the PCC-TF specification begins here:

> Patient, clinician, industry and governmental demands for improved healthcare quality have created increased focus to make patient healthcare information interoperability across disparate systems a reality.
>
> The challenge is to identify the clinically relevant documents (and data elements those documents contain) that are used in typical “transfer of care” scenarios and then to provide interoperability standards to promote ease in transmission of those documents (and data elements). The Cross-Enterprise Sharing of Medical Summary (XDS-MS) Integration Profile facilitates this by defining the appropriate standards for document transmission and a minimum set of “record entries” that should be forwarded or made available to subsequent care provider(s) during specific transfer of care scenarios. In addition, this Integration Profile needs to define the utilization requirements/options for the receiving entity in order to ensure that the “care context” of the sending entity is appropriately maintained following the information transfer.

The text for the PCC-TF specification ends here.

2.1.1 COMPONENT CONSTRAINTS

This section describes the constraints that limit the context in which the Component may be used. A constraint describes a rule that limits the use of the actors, actions or data within the given context, or to which the interactions must conform to be used within the described context. It is a description of the limits and scope of the interactions and can describe actions or events that are not part of the initial definition for the context.

Table 2.1.1-1 Component Constraints

Constraint Code	Constraint
No applicable constraints	

2.1.2 COMPONENT DEPENDENCIES

This section describes any specific mapping criteria for the standards underlying the Component. It elaborates on the relationships between different standards used by this Component, and how they map to each other. Additional required mapping criteria not currently enforced by the underlying standards, and any specific elements that are required for this mapping to succeed, are also provided.

Table 2.1.2-1 Component Dependencies

Standard/HITSP Component	Depends On (Name of standard/HITSP Component that it depends on)	Dependency Type (Pre-condition, Post-condition, General)	Purpose (Reason for this dependency)
No applicable dependencies			

2.2 RULES FOR IMPLEMENTING

The following section documents the content of the Component. It provides the basics elements and secondary standards that are supported by this Component and the constraints that are being placed on those standards. Specifically, it describes the subset or constraints that are required for this Component, and the minimum attributes of the Component as it relates to the base or composite standards on which it is based.

All process flows associated with this Component can be found in Section 3.2 of IHE PCC-TF, Volume 1.

2.2.1 DATA MAPPING

This section describes the specific data elements used by this Component. Due to the potentially large number of data elements in a particular standard, only the fields that HITSP is constraining differently from the standard will be described here.

The following table shows how AHIC data elements are mapped to the XDS-MS elements specified in IHE-PCC-TF, which specifies constraints to HL7 CDA-2:

Table 2.2.1-1 Data Mapping of Patient Data Elements

Data Element	Description	Limit/Range of values	Data Source	Destination	Requirements/ Pre-conditions
Randomized data linker	A unique, randomly generated, encoded number that links to patient-level information (i.e., name and address) retained at the facility.	Alphanumeric		ClinicalDocument/recordTarget/patientRole/id	Required in every document where pseudonymization is used.
Encounter date/time	Time of the patient presentation for care: ED arrival time (initial triage time) or the registration time for inpatients, or check-in time for ambulatory settings.	HL7 Timestamp		ClinicalDocument/componentOf/encompassingEncounter/effectiveTime	
Date of Birth	Date of birth	HL7 Timestamp		ClinicalDocument/recordTarget/patientRole/patient/birthTime	
Age	Patient sex/gender	LOINC/UCUM		ClinicalDocument/recordTarget/patientRole/patient/birthTime (Calculate from this info)	
Gender	Electronic medical records billing codes.	HL7 V3 AdministrativeGender (M, F, UN) corresponding to HL7 V2.X M,F,O Use nullFlavor for Unknown.		ClinicalDocument/recordTarget/patientRole/patient/administrativeGenderCode	
Zip	General type of patient, e.g., Inpatient, Outpatient, Emergency.	USPS		ClinicalDocument/recordTarget/patientRole/addr/postalCode	
State	This field indicates where the patient was admitted.	HL7 ADDR		ClinicalDocument/recordTarget/patientRole/addr/state	
Date/Time of Message		HL7 Timestamp		ClinicalDocument/effectiveTime (This timestamp presides over the whole document, unless it is overridden at a more granular level.)	

Table 2.2.1-2 Data Mapping Clinical Data Elements

Data Element	Description	Limit/Range of values	Data Source	Destination	Requirements/Pre-conditions
Patient Identification	A unique, randomly generated, encoded number that links to patient-level information (i.e., name and address) retained at the facility.	N/A		ClinicalDocument/recordTarget/patient/id	Required in every document where pseudonymization is used.
Admit time/date		N/A		/ClinicalDocument/componentOf/encompassingEncounter/effectiveTime or /ClinicalDocument/componentOf/encompassingEncounter/effectiveTime/low	
Discharge time/date		N/A		/ClinicalDocument/componentOf/encompassingEncounter/effectiveTime or /ClinicalDocument/componentOf/encompassingEncounter/effectiveTime/high	
Diagnosis/Injury Code		ICD-9/10 CM Or SNOMED CT		ClinicalDocument/component/structuredBody/component/section (PROBLEMS LIST 11450-4, HOSPITAL DISCHARGE DX 11535-2, HOSPITAL ADMISSION DX X-HAD-X)/entry/act/entryRelationship/observation/value	
Diagnosis type (Problem Code)	Preliminary, Interim, final.	Can be derived from the section code For Vocabulary, use Section Code (LOINC)		ClinicalDocument/component/structuredBody/component/section (PROBLEMS LIST 11450-4, HOSPITAL DISCHARGE DX 11535-2, HOSPITAL ADMISSION DX X-HAD-X)/entry/act/entryRelationship/observation/code	
Diagnosis date/time	*[System time stamp of data entry likely to be only associated date and time+E94.]*	N/A		ClinicalDocument/component/structuredBody/component/section (PROBLEMS LIST 11450-4, HOSPITAL DISCHARGE DX 11535-2, HOSPITAL ADMISSION DX X-HAD-X)/entry/act/effectiveTime	

Data Element	Description	Limit/Range of values	Data Source	Destination	Requirements/Pre-conditions
Discharge disposition	If discharged, place to which patient was released.	Use Universal Billing codes (UB-04/NUBC Current UB Data Specifications Manual)		ClinicalDocument/componentOf/encompassingEncounter/dischargeDispositionCode NOTE: Only required where patient has been discharged. (E.g. not usually relevant to ambulatory care.)	
Patient class (Outpatient, Inpatient, ER)	General type of patient, *e.g.*, Inpatient, Outpatient, Emergency.	ActEncounter Code subset of HL7 V3, ActCode, constrained to IMP, AMB, EMER, corresponding to HL7 V2.X I, O, E		ClinicalDocument/componentOf/encompassingEncounter/code	
Date and time onset of Illness	Recorded by triage or clinician. *[May not be coded value.]*	N/A		ClinicalDocument/component/structuredBody/component/section (HISTORY OF PRESENT ILLNESS 10164-2, PROBLEMS LIST 11450-4, HOSPITAL DISCHARGE DX 11535-2, HOSPITAL ADMISSION DX X-HAD-X)/entry/act/entryRelationship/observation/effectiveTime	For hospital stays, effectiveTime/high should be used to represent the discharge time; for very brief encounters, a single time could be used to represent the start and end of the encounter.
Chief Complaint	Short description, recorded during triage, for seeking care. *[May have text string or coded (e.g., ICD-9) values.]*	SNOMED-CT and/or Clinical Care Classification recommended for codifying of free-form text.		ClinicalDocument/component/structuredBody/component/section (REASON FOR VISIT 29299-5, CHIEF COMPLAINT 10154-3)	Expected for hospital encounters when the encounter is complete.
Temperature	Recorded temperature during triage.	temperature units: either 'Cel^Cel – degree Celsius – temperature ^UCUM' or '[degF]^[degF] – degree Fahrenheit – temperature^UCUM'		ClinicalDocument/component/structuredBody/component/section (VITAL SIGNS 8716-3)/text	

Data Element	Description	Limit/Range of values	Data Source	Destination	Requirements/Pre-conditions
Blood Pressure	Systolic/Diastolic blood pressure measurement and the date/time that it was performed. The BP done on initial assessment/ triage is the vital sign of interest.	UCUM Blood Pressure Unit Code.		ClinicalDocument/component/structuredBody/component/section (VITAL SIGNS 8716-3)/text	
Pulse/Heart rate		Not restricted.		ClinicalDocument/component/structuredBody/component/section (VITAL SIGNS 8716-3)/text	
Extended triage notes		SNOMED-CT and/or Clinical Care Classification recommended for codifying of free-form text.		For text representation: ClinicalDocument/component/structuredBody/component/section/text For Coded representation: /ClinicalDocument/componet/structuredBody/section[code/@code='']/entry/act/entryRelationship/observation	

2.3 LIST OF STANDARDS

It is important to understand that the standards selected here are within the context of the specific Use Case requirements and do not necessarily reflect selection in other contexts. The following standards are used to implement this Component specification:

Table 2.3-1 List of Standards

Standard	Description
American Medical Association (AMA) Current Procedural Terminology (CPT®) Fourth Edition (CPT-4)	A uniform coding system used primarily to identify medical services and procedures furnished by physicians and other healthcare professionals. Visit www.ama-assn.org for more information.
Clinical Care Classification (CCC) Version 2.0 [formerly known as the Home Healthcare Classification (HHCC) System]	Provides a standardized framework and unique coding structure for assessing, documenting, and classifying patient care in all health care settings. CCC consists of two interrelated terminologies: CCC of Nursing Diagnoses and outcomes and CCC of Nursing Interventions and Actions classified by 21 Care Components that represent the Functional, Health Behavioral, Physiological, and Psychological Patterns of patient care. The 21 Care components serve as the framework for mapping and linking the two interrelated terminologies to each other and to other health-related classifications. It was designed for computer processing and is free with permission. Visit www.sabacare.com for more information.

Standard	Description
Healthcare Common Procedure Coding System (HCPCS) Level II Code Set	Level II of the HCPCS is a standardized coding system that is used primarily to identify products, supplies, and services not included in the CPT codes (Level I of HCPCS) for billing purposes. In some cases a HCPCS code may be used to identify an unusual ordered service mapped to the AHIC -data set. CMS maintains HCPCS codes. Visit www.cms.hhs.gov for more information.
Health Level Seven (HL7) Version 3.0	The HL7 Version 3.0 Messaging Standard is an application protocol for electronic data exchange in healthcare. Version 3.0 is based on a Reference Information Model (RIM); which is used to instantiate various message formats. Value sets / code tables are contained in the standard. Visit www.hl7.org for more information.
Integrating the Healthcare Enterprise (IHE) Patient Care Coordination (PCC) Technical Framework Revision 3.0	The IHE Patient Care Coordination Technical Framework (PCC TF) defines specific implementations (called Integration Profiles) of established standards to deal with integration issues that cross providers, patient problems or time. The Cross Enterprise Document Sharing of Medical Summaries (XDS-MS) Integration Profile enables sharing of health information between enterprises of a regional health network, and further describes how to map content in a CDA medical document into registry metadata. In the registry, healthcare providers publish pointers to documents stored in distributed repositories. Other healthcare providers may search and retrieve these and other documents. Visit www.ihe.net for more information.
Integrating the Healthcare Enterprise (IHE) IT Infrastructure Technical Framework (ITI-TF) Revision 4.0	The IHE IT Infrastructure Technical Framework defines specific implementations of established standards to achieve integration goals that promote appropriate sharing of health information to support optimal patient care. IHE Integration Profiles, offer a common language that healthcare professionals and vendors may use in communicating requirements for the integration of products. The current version of the ITI-TF, rev. 3.0 for Final Text, specifies the IHE transactions defined and implemented as of August 22, 2007. The latest version of the IHE Technical Framework is available at www.ihe.net.
International Classification of Diseases, 9th Revision, Clinical Modifications (ICD-9-CM)	The International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM), Volumes I, II (diagnoses) and III (procedures) describes the classification of morbidity information for statistical purposes and for the indexing of healthcare records by diseases and procedures. Visit www.cdc.gov/nchs for more information.
International Classification of Diseases, 10th Revision, Procedure Coding System (ICD-10-PCS)	The International Classification of Diseases, 10th Revision, Procedure Coding System (ICD-10-PCS), describes the classification of inpatient procedures for statistical purposes and for the indexing of healthcare records by procedures. ICD-10-PCS is a procedural coding system managed by the Centers for Medicare and Medicaid Services (CMS). Visit www.cms.hhs.gov for more information.
International Classification of Diseases, 10th Revision, Related Health Problems (ICD-10-CM)	The International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM), describes the classification of morbidity information for statistical purposes and for the indexing of healthcare records by diseases. The National Center for Health Statistics (NCHS), the Federal agency responsible for use of the International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10) in the United States, developed a clinical modification of the classification for morbidity purposes. Visit www.cdc.gov/nchs for more information.
International Health Terminology Standards Development Organisation (IHTSDO) Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT®)	SNOMED CT consists of a technical design, core content architecture, and Core content. SNOMED CT Core content includes the technical specification of SNOMED CT and fully integrated multi-specialty clinical content. The Core content also includes a concepts table, description table, relationships table, history table, ICD-9-CM mapping, and Technical Reference Guide. Additionally, SNOMED CT provides a framework to manage language dialects, clinically relevant subsets, qualifiers and extensions, as well as concepts and terms unique to particular organizations or localities. Visit www.snomed.org for more information.
Logical Observation Identifiers Names and Codes (LOINC®)	A database of universal identifiers for laboratory and other clinical observations. The laboratory portion of the LOINC database contains the usual categories of chemistry, hematology, serology, microbiology (including parasitology and virology), and toxicology; as well as categories for drugs and the cell counts typically reported on a complete blood count or a cerebrospinal fluid cell count. Antibiotic susceptibilities are a separate category. The clinical portion of the LOINC database includes entries for vital signs, hemodynamics, intake/output, EKG, obstetric ultrasound, cardiac echo, urologic imaging, gastroendoscopic procedures, pulmonary ventilator management, selected survey instruments, and other clinical observations. Visit www.loinc.org for more information.

Standard	Description
National Library of Medicine (NLM) Unified Medical Language System (UMLS) RxNorm	Provides standard names for (1) clinical drugs and (2) drug dose forms as administered to a patient. Also provides links from clinical drugs, both branded and generic, to their active ingredients, drug components (active ingredient + strength), and related brand names. Food and Drug Administration (FDA) National Drug Codes (NDCs) for specific drug products and many of the drug vocabularies commonly used in pharmacy management and drug interaction software are additionally linked to RxNorm. Visit www.nlm.nih.gov for more information.
National Uniform Billing Committee (NUBC) Uniform Bill Version 2007 (UB-04) Current UB Data Specification Manual Field 22, Patient Discharge Status, Codes	A code set identifying status of patient discharge on an institutional claim (e.g., inpatient, outpatient, hospice, home care). Visit www.nubc.org for more information.
Unified Code for Units of Measure (UCUM)	A code system intended to include all units of measures being contemporarily used in international science, engineering, and business. The purpose is to facilitate unambiguous electronic communication of quantities together with their units. The focus is on electronic communication, as opposed to communication between humans. Visit aurora.regenstrief.org for more information.

3.0 TECHNICAL IMPLEMENTATION

3.1 CONFORMANCE

This section describes the conformance criteria, which are objective statements of requirements that can be used to determine if a specific behavior, function, interface, or code set has been implemented correctly.

3.1.1 CONFORMANCE CRITERIA

In order to claim conformance to this construct specification, an implementation must satisfy all the requirements and mandatory statements listed in this specification, the associated HITSP Interoperability Specification, its associated construct specifications, as well as conformance criteria from the selected base and composite standards. A conformant system must also be constrained as specified in table 2.1.1-1, and implement all of the required actors, where defined, within the scope, subset or implementation option that is selected from the associated Interoperability Specification.

Claims of conformance may only be made for the overall HITSP Interoperability Specification with which this construct is associated.

3.1.2 CONFORMANCE SCOPING, SUBSETTING AND OPTIONS

A HITSP Interoperability Specification must be implemented in its entirety for an implementation to claim conformance to the specification. HITSP may define the permissibility for actor scoping, subsetting or implementation options by which the specification may be implemented in a limited manner. Such scoping, subsetting and options may extend to associated constructs, such as this construct. This construct must implement all requirements within the selected scope, subset or options as defined in the associated Interoperability Specification to claim conformance.

4.0 APPENDIX

The following sections include relevant materials referenced throughout this document.

No additional information at this time.

5.0 CHANGE HISTORY

The following sections provide the history of all changes made to this document since the last publication.

5.1 MAY 11, 2007

This document is now Released for Implementation.

5.2 DECEMBER 5, 2007

- Updated to conform to new template
- Updated to utilize HL7 V3 coding specifications that are typical in CDA V3, rather than V2.5 messaging
- Removed references to laboratory orders and results to harmonize with other HITSP specifications for CDA documents

5.3 DECEMBER 13, 2007

Upon approval by the HITSP Panel on December 13, 2007, this document is now Released for Implementation.