

**Implementation Guide for CDA Release 2
Emergency Medical
Services Patient Care Report
(US REALM)**



(Developer Documentation)

Contents

Acknowledgments.....	5
Revision History.....	7
 Chapter 1: INTRODUCTION.....	 9
Overview.....	10
Approach.....	10
Scope.....	10
Audience.....	10
Organization of This Guide.....	10
Templates.....	10
Vocabulary and Value Sets.....	10
Use of Templates.....	11
Originator Responsibilities.....	11
Recipient Responsibilities.....	11
Conventions Used in This Guide.....	11
Conformance Requirements.....	11
Keywords.....	12
XML Examples.....	12
 Chapter 2: DOCUMENT TEMPLATES.....	 13
Patient Care Report.....	14
 Chapter 3: SECTION TEMPLATES.....	 25
Billing.....	26
 Chapter 4: CLINICAL STATEMENT TEMPLATES.....	 29
 Chapter 5: OTHER CLASSES.....	 31
 Chapter 6: VALUE SETS.....	 33
EMS Billing Condition.....	34
EMS Level Of Service.....	34
REFERENCES.....	35

Acknowledgments

This implementation guide was developed with the support and sponsorship of the National EMS Information System (NEMSIS), directed by Clay Mann. Additional clinical guidance was provided by Dr. Greg Mears. NEMSIS is supported by the US National Highway Traffic Safety Administration, the Centers for Disease Control, and the Health Resources and Services Administration, as well as dozens of other government agencies, universities, and professional organizations.

Shakir Consulting was instrumental in the creation of the domain analysis model and constrained model that inform this specification.

We leaned heavily on the work done by HL7's Structured Documents committee, as well as exemplary guides produced by other teams, most notably the Healthcare Associated Infections team.

The work could not have been completed without the indefatigable assistance of Jaci Phillips and the support of the Regenstrief institute.

This demonstration document contains information from the following sources:

©2010 ANSI. This material may be copied without permission from ANSI only if and to the extent that the text is not altered in any fashion and ANSI's copyright is clearly noted.

SNOMED CT® is the registered trademark of the International Health Terminology Standard Development Organization (IHTSDO).

This material contains content from LOINC® (<http://loinc.org>). The LOINC table, LOINC codes, and LOINC panels and forms file are copyright © 1995-2010, Regenstrief Institute, Inc. and the Logical Observation Identifiers Names and Codes (LOINC) Committee and available at no cost under the license at <http://loinc.org/terms-of-use>.

Certain materials contained in this Interoperability Specification are reproduced from Health Level Seven (HL7) HL7 Implementation Guide: CDA Release 2 – Continuity of Care Document (CCD), HL7 Implementation Guide for CDA Release 2: History and Physical (H&P) Notes, HL7 Implementation Guide for CDA Release 2: Consult Notes, or HL7 Implementation Guide for CDA Release 2: Operative Notes with permission of Health Level Seven, Inc. No part of the material may be copied or reproduced in any form outside of the Interoperability Specification documents, including an electronic retrieval system, or made available on the Internet without the prior written permission of Health Level Seven, Inc. Copies of standards included in this Interoperability Specification may be purchased from the Health Level Seven, Inc. Material drawn from these standards is credited where used.

Revision History

Rev	Date	By Whom	Changes
New	July 2010	Dave Carlson	
First draft for posting	December 2010	Dave Carlson	Updated model content and publication format

Chapter 1

INTRODUCTION

Topics:

- *Overview*
- *Approach*
- *Scope*
- *Audience*
- *Organization of This Guide*
- *Use of Templates*
- *Conventions Used in This Guide*

Overview

This implementation guide is generated from UML models developed in the Open Health Tools (OHT) Model-Driven Health Tools (MDHT) project. The data specifications have been formalized into computational models expressed in UML. These models are used by automated tooling to generate this publication, plus validation tools and Java libraries for implementers.

Approach

Working with specifications generated from formal UML models provides the opportunity to work with the data from the perspective of the underlying model and electronic format and to explore many design issues thoroughly. Taking this as an initial step ensures that the data set developers and standards community can reach consensus prior to the larger commitment of time that would be required to bring the full data set into standard format.

This project supports reusability and ease of data collection through a standard data representation harmonized with work developed through Health Information Technology Expert Panel (HITEP), balloted through Health Level Seven (HL7) and/or recognized by the Health Information Technology Standards Panel (HITSP).

This implementation guide (IG) specifies a standard for electronic submission of NCRs in a Clinical Document Architecture (CDA), Release 2 format.

Scope

TODO: scope of this implementation guide.

Audience

The audience for this document includes software developers and implementers who wish to develop...

Organization of This Guide

The requirements as laid out in the body of this document are subject to change per the policy on implementation guides (see section 13.02" Draft Standard for Trial Use Documents" within the HL7 Governance and Operations Manual, http://www.hl7.org/documentcenter/public/membership/HL7_Governance_and_Operations_Manual.pdf).

Templates

Templates are organized by document (see Document Templates), by section (see Section Templates), and by clinical statements (see Clinical Statement Templates). Within a section, templates are arranged hierarchically, where a more specific template is nested under the more generic template that it conforms to. See Templates by Containment for a listing of the higher level templates by containment; the appendix Templates Used in This Guide includes a table of all of the templates Organized Hierarchically.

Vocabulary and Value Sets

Vocabularies recommended in this guide are from standard vocabularies. When SNOMED codes are used, rules defined in Using SNOMED CT in HL7 Version 3 are adhered to. In many cases, these vocabularies are further constrained into value sets for use within this guide. Value set names and OIDs are summarized in the table Summary of Value Sets. Each named value set in this summary table is stored in a template database that will be maintained by CHCA.

Use of Templates

When valued in an instance, the template identifier (`templateId`) signals the imposition of a set of template-defined constraints. The value of this attribute provides a unique identifier for the templates in question.

Originator Responsibilities

An originator can apply a `templateId` to assert conformance with a particular template.

In the most general forms of CDA exchange, an originator need not apply a `templateId` for every template that an object in an instance document conforms to. This implementation guide asserts when `templateIds` are required for conformance.

Recipient Responsibilities

A recipient may reject an instance that does not contain a particular `templateId` (e.g., a recipient looking to receive only CCD documents can reject an instance without the appropriate `templateId`).

A recipient may process objects in an instance document that do not contain a `templateId` (e.g., a recipient can process entries that contain Observation acts within a Problems section, even if the entries do not have `templateIds`).

Conventions Used in This Guide

Conformance Requirements

Conformance statements are grouped and identified by the name of the template, along with the `templateId` and the context of the template (e.g., ClinicalDocument, section, observation), which specifies the element under constraint. If a template is a specialization of another template, its first constraint indicates the more general template. In all cases where a more specific template conforms to a more general template, asserting the more specific template also implies conformance to the more general template. An example is shown below.

Template name

```
[<type of template>: templateId <XXXX.XX.XXX.XXX>]
```

Description of the template will be here

1. Conforms to <The template name> Template (templateId: XXXX<XX>XXX>YYY).
2. **SHALL** contain [1..1] @classCode = <AAA> <code display name> (CodeSystem: 123.456.789 <XXX> Class) **STATIC** (CONF:<number>).
3.

Figure 1: Template name and "conforms to" appearance

The conformance verb keyword at the start of a constraint (**SHALL**, **SHOULD**, **MAY**, etc.) indicates business conformance, whereas the cardinality indicator (0..1, 1..1, 1..*, etc.) specifies the allowable occurrences within an instance. Thus, "**MAY** contain 0..1" and "**SHOULD** contain 0..1" both allow for a document to omit the particular component, but the latter is a stronger recommendation that the component be included if it is known.

The following cardinality indicators may be interpreted as follows:

- 0..1 as zero to one present
- 1..1 as one and only one present
- 2..2 as two must be present
- 1..* as one or more present
- 0..* as zero to many present

Value set bindings adhere to HL7 Vocabulary Working Group best practices, and include both a conformance verb (**SHALL**, **SHOULD**, **MAY**, etc.) and an indication of **DYNAMIC** vs. **STATIC** binding. The use of **SHALL** requires that the component be valued with a member from the cited value set; however, in every case any HL7 "null" value such as other (OTH) or unknown (UNK) may be used.

Each constraint is uniquely identified (e.g., "CONF:605") by an identifier placed at or near the end of the constraint. These identifiers are not sequential as they are based on the order of creation of the constraint.

1. **SHALL** contain [1..1] component/structuredBody (CONF:4082).
 - a. This component/structuredBody **SHOULD** contain [0..1] component (CONF:4130) such that it
 - a. **SHALL** contain [1..1] Reporting Parameters section (templateId:2.16.840.1.113883.10.20.17.2.1) (CONF:4131).
 - b. This component/structuredBody **SHALL** contain [1..1] component (CONF:4132) such that it
 - a. **SHALL** contain [1..1] Patient data section - NCR (templateId:2.16.840.1.113883.10.20.17.2.5) (CONF:4133).

Figure 2: Template-based conformance statements example

CCD templates are included within this implementation guide for ease of reference. CCD templates contained within this implementation guide are formatted WITHOUT typical **KEYWORD** and **XML** element styles. A WIKI site is available if you would like to make a comment to be considered for the next release of CCD: http://wiki.hl7.org/index.php?title=CCD_Suggested_Enhancements The user name and password are: wiki/wikiwiki. You will need to create an account to edit the page and add your suggestion.

1. The value for "Observation / @moodCode" in a problem observation SHALL be "EVN" 2.16.840.1.113883.5.1001 ActMood STATIC. (CONF: 814).
2. A problem observation SHALL include exactly one Observation / statusCode. (CONF: 815).
3. The value for "Observation / statusCode" in a problem observation SHALL be "completed" 2.16.840.1.113883.5.14 ActStatus STATIC. (CONF: 816).
4. A problem observation SHOULD contain exactly one Observation / effectiveTime, to indicate the biological timing of condition (e.g. the time the condition started, the onset of the illness or symptom, the duration of a condition). (CONF: 817).

Figure 3: CCD conformance statements example

Keywords

The keywords SHALL, SHALL NOT, SHOULD, SHOULD NOT, MAY, and NEED NOT in this document are to be interpreted as described in the [HL7 Version 3 Publishing Facilitator's Guide](#):

- **SHALL**: an absolute requirement
- **SHALL NOT**: an absolute prohibition against inclusion
- **SHOULD/SHOULD NOT**: valid reasons to include or ignore a particular item, but must be understood and carefully weighed
- **MAY/NEED NOT**: truly optional; can be included or omitted as the author decides with no implications

XML Examples

XML samples appear in various figures in this document in a fixed-width font. Portions of the XML content may be omitted from the content for brevity, marked by an ellipsis (...) as shown in the example below.

```
<ClinicalDocument xmlns='urn:hl7-org:v3'>
...
</ClinicalDocument>
```

Figure 4: ClinicalDocument example

XPath expressions are used in the narrative and conformance requirements to identify elements because they are familiar to many XML implementers.

Chapter

2

DOCUMENT TEMPLATES

Topics:

- [Patient Care Report](#)

This section contains the document level constraints for CDA documents that are compliant with this implementation guide.

Patient Care Report

[ClinicalDocument: templateId 2.16.840.1.113883.17.3.10.1]

1. **SHALL** conform to [Consol General Header Constraints](#) template (templateId: 2.16.840.1.113883.10.20.22.1.1)
2. **SHALL** contain exactly one [1..1] **@classCode**= "DOCCLIN" (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
3. **SHALL** contain exactly one [1..1] **@moodCode**= "EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
4. **SHALL** contain exactly one [1..1] **realmCode/@code**= "US" (CONF:5249)
5. **SHALL** contain exactly one [1..1] **typeId** (CONF:5361)
6. **SHALL** contain exactly one [1..1] **id** (CONF:5363)
7. **SHALL** contain exactly one [1..1] **code/@code**= "67796-3" *EMS Patient Care Report* (CodeSystem: 2.16.840.1.113883.6.1 LOINC) (CONF:5253)
8. **SHALL** contain exactly one [1..1] **title** (CONF:5254)
9. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:5256)
10. **SHALL** contain exactly one [1..1] **confidentialityCode**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.1.11.16926 [BasicConfidentialityKind](#) **STATIC** (CONF:5259)
11. **SHALL** contain exactly one [1..1] **languageCode**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.1.11.11526 [Language](#) **DYNAMIC** (CONF:5372)
12. **SHALL** contain exactly one [1..1] **setId** (CONF:5261)
13. **MAY** contain zero or one [0..1] **versionNumber** (CONF:5264)
14. Contains exactly one [1..1] **component**, where its type is [Component2](#)
15. **SHALL** contain at least one [1..*] **recordTarget** (CONF:5266)

The recordTarget records the patient whose health information is described by the clinical document; it must contain at least one patientRole element.

- a. Such recordTargets **SHALL** contain exactly one [1..1] **patientRole** (CONF:5268)
 - a. This patientRole **SHALL** contain at least one [1..*] **addr** (CONF:5271)
 - b. This patientRole **SHALL** contain at least one [1..*] **id** (CONF:5268)
 - c. This patientRole **SHALL** contain at least one [1..*] **telecom** (CONF:5280)
 - d. This patientRole **SHALL** contain exactly one [1..1] **patient** (CONF:5283)
 - a. This patient **SHALL** contain exactly one [1..1] **administrativeGenderCode**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.1.11.1 [Administrative Gender \(HL7 V3\)](#) **DYNAMIC** (CONF:6394)
 - b. This patient **SHALL** contain exactly one [1..1] **birthTime**
 - c. This patient **MAY** contain zero or one [0..1] **ethnicGroupCode**
 - d. This patient **SHOULD** contain zero or one [0..1] **maritalStatusCode**, which **SHOULD** be selected from ValueSet 2.16.840.1.113883.1.11.12212 [Marital Status](#) **STATIC** 1
 - e. This patient **SHALL** contain exactly one [1..1] **name** (CONF:5284)
 - f. This patient **MAY** contain zero or one [0..1] **raceCode**, which **MAY** be selected from ValueSet 2.16.840.1.113883.1.11.14914 [Race](#) **STATIC** 1
 - g. This patient **MAY** contain zero or one [0..1] **religiousAffiliationCode**, which **MAY** be selected from ValueSet 2.16.840.1.113883.1.11.19185 [Religious Affiliation](#) **STATIC** 1
 - h. This patient **MAY** contain zero or more [0..*] **guardian** (CONF:5325)
 - a. Such guardians **SHOULD** contain zero or more [0..*] **addr**
 - b. Such guardians **SHOULD** contain zero or one [0..1] **code**, which **SHOULD** be selected from ValueSet 2.16.840.1.113883.1.11.19563 [Personal Relationship Role Type](#) **STATIC** 1

- c. Such guardians **MAY** contain zero or more [0..*] **telecom**
 - d. Such guardians **SHALL** contain zero or one [0..1] **guardianPerson** (CONF:5385)
 - a. This guardianPerson **SHALL** contain at least one [1..*] **name** (CONF:5470)
 - i. This patient **MAY** contain zero or one [0..1] **birthplace** (CONF:5395)
 - a. This birthplace **SHALL** contain zero or one [0..1] **place** (CONF:5396)
 - a. This place **SHALL** contain zero or one [0..1] **addr** (CONF:5397)
 - j. This patient **SHOULD** contain zero or one [0..1] **languageCommunication** (CONF:5406)
 - a. This languageCommunication **SHALL** contain exactly one [1..1] **languageCode**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.1.11.11526 *Language* DYNAMIC (CONF:5407)
 - b. This languageCommunication **MAY** contain zero or one [0..1] **preferenceInd** (CONF:5414)
 - c. This languageCommunication **SHALL** contain zero or one [0..1] **proficiencyLevelCode**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.1.11.12199 *LanguageAbilityProficiency* STATIC (CONF:9965)
 - d. This languageCommunication **SHALL** contain zero or one [0..1] **modeCode**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.1.11.12249 *LanguageAbilityMode* STATIC 1 (CONF:5409)
 - k. This patient **SHALL** satisfy: BirthTime precise to year
 - l. This patient **SHOULD** satisfy: BirthTime precise to day
 - e. This patientRole Contains zero or one [0..1] **providerOrganization**
 - a. This providerOrganization **SHALL** contain at least one [1..*] **addr** (CONF:5422)
 - b. This providerOrganization **SHALL** contain at least one [1..*] **id** (CONF:5417)
 - c. This providerOrganization **SHALL** contain at least one [1..*] **name** (CONF:5419)
 - d. This providerOrganization **SHALL** contain at least one [1..*] **telecom** (CONF:5420)
 - e. This providerOrganization The id **SHOULD** include zero or one [0..1] id where id/@root = "2.16.840.1.113883.4.6" National Provider Identifier (CONF:9996) (CONF:9996)
16. **MAY** contain exactly one [1..1] **componentOf** (CONF:9955)
- a. This componentOf **SHALL** contain exactly one [1..1] **encompassingEncounter** (CONF:9956)
 - a. This encompassingEncounter **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:9958)
 - b. This encompassingEncounter **SHALL** contain at least one [1..*] **id** (CONF:9959)
17. **SHALL** contain at least one [1..*] **author** (CONF:5444)
- a. Such authors Contains exactly one [1..1] **time**
 - b. Such authors **SHALL** contain exactly one [1..1] **assignedAuthor** (CONF:5448)
 - a. This assignedAuthor **SHALL** contain at least one [1..*] **addr** (CONF:5452)
 - b. This assignedAuthor **SHOULD** contain zero or one [0..1] **code** (CONF:9942)
 - c. This assignedAuthor **SHALL** contain at least one [1..*] **id** (CONF:5449)
 - d. This assignedAuthor **SHALL** contain at least one [1..*] **telecom** (CONF:5428)
 - e. This assignedAuthor Contains zero or one [0..1] **assignedPerson**
 - a. This assignedPerson **SHALL** contain at least one [1..*] **name** (CONF:5470)
 - f. This assignedAuthor Contains zero or one [0..1] **assignedAuthoringDevice**
 - a. This assignedAuthoringDevice **SHALL** contain exactly one [1..1] **manufacturerModelName** (CONF:9936)
 - b. This assignedAuthoringDevice **SHALL** contain exactly one [1..1] **softwareName** (CONF:9999)
 - g. This assignedAuthor This assignedAuthor **SHALL** contain exactly one [1..1] assignedPerson or assignedAuthoringDevice
 - h. This assignedAuthor The id **SHOULD** include zero or one [0..1] id where id/@root = "2.16.840.1.113883.4.6" National Provider Identifier (CONF:9996)

- 18. MAY** contain zero or one [0..1] **dataEnterer** (CONF:5441)
- a. This dataEnterer **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:5442)
 - a. This assignedEntity **SHALL** contain at least one [1..*] **addr** (CONF:5460)
 - b. This assignedEntity **SHOULD** contain zero or one [0..1] **code** (CodeSystem: 2.16.840.1.113883.6.101 NUCCHHealthCareProviderTaxonomy) (CONF:9944)
 - c. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:5443)
 - d. This assignedEntity **SHALL** contain at least one [1..*] **telecom** (CONF:5466)
 - e. This assignedEntity **SHALL** contain exactly one [1..1] **assignedPerson** (CONF:5469)
 - a. This assignedPerson **SHALL** contain at least one [1..*] **name** (CONF:5470)
 - f. This assignedEntity id **SHOULD** include zero or one [0..1] id where id/@root="2.16.840.1.113883.4.6" National Provider Identifier (CONF:9943)
- 19. SHALL** contain exactly one [1..1] **custodian** (iv., CONF:5519)
- a. This custodian **SHALL** contain exactly one [1..1] **assignedCustodian** (CONF:5520)
 - a. This assignedCustodian **SHALL** contain zero or one [0..1] **representedCustodianOrganization** (CONF:5521)
 - a. This representedCustodianOrganization **SHALL** contain at least one [1..*] **addr** (CONF:5559)
 - b. This representedCustodianOrganization **SHALL** contain at least one [1..*] **id** (CONF:5522)
 - c. This representedCustodianOrganization **SHALL** contain exactly one [1..1] **name** (CONF:5524)
 - d. This representedCustodianOrganization **SHALL** contain exactly one [1..1] **telecom** (CONF:5525)
 - e. This representedCustodianOrganization The id **SHOULD** include zero or one [0..1] id where id/@root="2.16.840.1.113883.4.6" National Provider Identifier (CONF:9996)
- 20. MAY** contain zero or more [0..*] **informationRecipient** (CONF:5565)
- a. Such informationRecipients **SHALL** contain zero or one [0..1] **intendedRecipient** (CONF:5566)
 - a. This intendedRecipient **MAY** contain zero or one [0..1] **informationRecipient** (CONF:5568)
 - a. This informationRecipient **SHALL** contain at least one [1..*] **name** (CONF:5470)
 - b. This intendedRecipient **MAY** contain zero or one [0..1] **receivedOrganization** (CONF:5577)
 - a. This receivedOrganization **SHALL** contain zero or more [0..*] **name** (CONF:5578)
- 21. SHOULD** contain zero or one [0..1] **legalAuthenticator** (CONF:5579)
- a. This legalAuthenticator **SHALL** contain exactly one [1..1] **time** (CONF:5580)
 - b. This legalAuthenticator **SHALL** contain exactly one [1..1] **signatureCode/@code="S"** (CodeSystem: 2.16.840.1.113883.5.89 Participationsignature) (CONF:5583, CONF:5584)
 - c. This legalAuthenticator Contains zero or one [0..1] **assignedEntity**
 - a. This assignedEntity **SHALL** contain at least one [1..*] **addr**
 - b. This assignedEntity **SHOULD** contain zero or one [0..1] **code** (CodeSystem: 2.16.840.1.113883.6.101 NUCCHHealthCareProviderTaxonomy)
 - c. This assignedEntity **SHALL** contain at least one [1..*] **id**
 - d. This assignedEntity **SHALL** contain at least one [1..*] **telecom**
 - e. This assignedEntity **SHALL** contain exactly one [1..1] **assignedPerson** (CONF:5597)
 - a. This assignedPerson **SHALL** contain at least one [1..*] **name** (CONF:5470)
 - f. This assignedEntity The id **SHOULD** include zero or one [0..1] id where id/@root="2.16.840.1.113883.4.6" National Provider Identifier (CONF:9996)
- 22. MAY** contain zero or more [0..*] **authenticator** (CONF:5607)
- a. Such authenticators **SHALL** contain exactly one [1..1] **time** (CONF:5608)
 - b. Such authenticators **SHALL** contain exactly one [1..1] **signatureCode/@code="S"** (CodeSystem: 2.16.840.1.113883.5.89 Participationsignature)
 - c. Such authenticators **SHALL** contain zero or one [0..1] **assignedEntity** (CONF:5612)

- a. This assignedEntity **SHALL** contain at least one [1..*] **addr** (CONF:5616)
 - b. This assignedEntity **MAY** contain zero or one [0..1] **code** (CONF:9951)
 - c. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:5613)
 - d. This assignedEntity **SHALL** contain at least one [1..*] **telecom** (CONF:5622)
 - e. This assignedEntity Contains zero or one [0..1] **assignedPerson**
 - a. This assignedPerson **SHALL** contain at least one [1..*] **name** (CONF:5470)
 - f. This assignedEntity The id **SHOULD** include zero or one [0..1] id where id/@root="2.16.840.1.113883.4.6" National Provider Identifier (CONF:9996)
- 23. MAY** contain zero or one [0..1] **informant** (CONF:8001)
- a. This informant Contains zero or one [0..1] **assignedEntity**
 - a. This assignedEntity **SHOULD** contain zero or more [0..*] **addr** (CONF:8220)
 - b. This assignedEntity **SHALL** contain zero or one [0..1] **code** (CodeSystem: 2.16.840.1.113883.6.101 NUCCHHealthCareProviderTaxonomy)
 - c. This assignedEntity **SHOULD** contain at least one [1..*] **id** (a., CONF:9945)
 - d. This assignedEntity **SHALL** contain zero or one [0..1] **assignedPerson** (CONF:8221)
 - a. This assignedPerson **SHALL** contain at least one [1..*] **name** (CONF:5470)
 - e. This assignedEntity The id **SHOULD** include zero or one [0..1] id where id/@root="2.16.840.1.113883.4.6" National Provider Identifier (CONF:9996)
 - b. This informant Contains zero or one [0..1] **relatedEntity**
 - a. This relatedEntity **SHOULD** contain zero or more [0..*] **addr** (CONF:8220)
 - b. This relatedEntity **SHALL** contain zero or one [0..1] **relatedPerson** (CONF:8221)
 - a. This relatedPerson **SHALL** contain at least one [1..*] **name** (CONF:5470)
 - c. This informant **SHALL** satisfy: contain exactly one [1..1] assignedEntity OR exactly one [1..1] relatedEntity (CONF:8002)
- 24. MAY** contain zero or more [0..*] **participant** (CONF:10003)
- a. Such participants **MAY** contain zero or one [0..1] **time** (CONF:10004)
 - b. Such participants Such participants, if present, **SHALL** have an associatedPerson or scopingOrganization element under participant/associatedEntity.
 - c. Such participants Unless otherwise specified by the document specific header constraints, when participant/@typeCode is IND, associatedEntity/@classCode **SHALL** be selected from ValueSet INDRoleclassCodes 2.16.840.1.113883.11.20.9.33 STATIC 2011-09-30.
- 25. MAY** contain zero or more [0..*] **inFulfillmentOf** (CONF:9952)
- a. Such inFulfillmentOfs **SHALL** contain exactly one [1..1] **order** (CONF:9953)
 - a. This order **SHALL** contain at least one [1..*] **id** (CONF:9954)
- 26. Contains** zero or one [0..1] **author**
- a. This author **SHALL** contain zero or one [0..1] **@typeCode**= "AUT "
 - b. This author Contains zero or one [0..1] **assignedAuthor**
 - a. This assignedAuthor **SHALL** contain zero or one [0..1] **@classCode**= "ASSIGNED "
- 27. Contains** zero or one [0..1] **recordTarget**
- a. This recordTarget **SHALL** contain zero or one [0..1] **@contextControlCode**= "OP "
 - b. This recordTarget **SHALL** contain exactly one [1..1] **typeId**
- 28. MAY** contain zero or one [0..1] **author**
- a.
- 29. MAY** contain exactly one [1..1] **componentOf** (CONF:9955)
- a. This componentOf **SHALL** contain exactly one [1..1] **encompassingEncounter** (CONF:9956)

- a. This encompassingEncounter **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:9958)
 - b. This encompassingEncounter **SHALL** contain at least one [1..*] **id** (CONF:9959)
- 30. Contains zero or one [0..1] componentOf**
- a. This componentOf **SHALL** contain zero or one [0..1] **@typeCode= "COMP"**
 - b. This componentOf Contains zero or one [0..1] **encompassingEncounter**
 - a. This encompassingEncounter **SHALL** contain zero or one [0..1] **@classCode= "ENC"** (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
 - b. This encompassingEncounter **SHALL** contain zero or one [0..1] **@moodCode= "EVN"** *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
 - c. This encompassingEncounter **SHALL** contain exactly one [1..1] **effectiveTime**
 - d. This encompassingEncounter Contains zero or one [0..1] **location**
 - a. This location **SHALL** contain exactly one [1..1] **healthCareFacility**
 - a. This healthCareFacility **SHALL** contain exactly one [1..1] **@classCode= "SDLOC"**
 - b. This healthCareFacility **SHALL** contain exactly one [1..1] **id**
 - c. This healthCareFacility **SHALL** contain exactly one [1..1] **location**
 - a. This location **SHALL** contain exactly one [1..1] **@classCode= "PLC"** (CodeSystem: 2.16.840.1.113883.6.3 ICD-10)
 - b. This location **MAY** contain zero or one [0..1] **name**
 - c. This location **MAY** contain zero or one [0..1] **addr**
- 31. SHOULD** contain zero or one [0..1] **advanceDirectivesSectionEntriesOptional**
- a. Contains exactly one [1..1] *Consol Advance Directives Section Entries Optional* (templateId: 2.16.840.1.113883.10.20.22.2.21)
- 32. SHOULD** contain zero or one [0..1] **allergiesSectionEntriesOptional**
- a. Contains exactly one [1..1] *Consol Allergies Section Entries Optional* (templateId: 2.16.840.1.113883.10.20.22.2.6)
- 33. Contains zero or one [0..1] billing**
- a. Contains exactly one [1..1] *Billing* (templateId: 2.16.840.1.113883.17.3.10.1.5)
- 34. SHALL** satisfy: The US Realm Clinical Document Address datatype flavor is used by US Realm Clinical Document Header for the patient or any other person or organization mentioned within it.
- 35. SHALL** satisfy: The US Realm Clinical Document Date and Time datatype flavor records date and time information. If no time zone offset is provided, you can make no assumption about time, unless you have made a local exchange agreement. This data type uses the same rules as US Realm Date and Time (DTM.US.FIELDDED), but is used with the effectiveTime element.
- 36. SHALL** satisfy: The US Realm Patient Name datatype flavor is a set of reusable constraints that can be used for the patient or any other person. It requires a first (given) and last (family) name. If a patient or person has only one name part (e.g., patient with first name only) place the name part in the field required by the organization. Use the appropriate nullFlavor, "Not Applicable" (NA), in the other field.

emspcr::PatientCareReport							
cda::clinicaldocument[cda:templateId/@root = 2.16.840.1.113883.17.3.10.1]/							
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)
classCode	@classCode	1..1	SHALL	NO	ActClinicalDocument		DOCCLIN
moodCode	@moodCode	1..1	SHALL	NO	ActMood		EVN
nullFlavor	@nullFlavor	0..1		NO	NullFlavor		ASKU

emspcr::PatientCareReport							
cda::clinicaldocument[cda:templateId/@root = 2.16.840.1.113883.17.3.10.1]/							
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)
code	code	1..1	SHALL	YES	CE	CONF:5253	LOINC 2.16.840.1.113883.6.1 67796-3
confidentialityCode	confidentialityCode	1..1	SHALL	YES	CE	CONF:5259	null
copyTime	copyTime	0..1		YES	TS		
effectiveTime	effectiveTime	1..1	SHALL	YES	TS	CONF:5256	
id	id	1..1	SHALL	YES	II	CONF:5363	
languageCode	languageCode	1..1	SHALL	YES	CS	CONF:5372	
realmCode	realmCode	1..1	SHALL	YES	CS	CONF:5249	null null US
setId	setId	1..1	SHALL	YES	II	CONF:5261	
templateId	templateId	0..*		YES	II		2.16.840.1.113883.17.3.10.1
title	title	1..1	SHALL	YES	ST	CONF:5254	
versionNumber	versionNumber	0..1	MAY	YES	INT	CONF:5264	
advanceDirectivesSectionEntriesOptional	AdvanceDirectivesSectionEntriesOptional	0..1	SHOULD	YES	AdvanceDirectivesSectionEntriesOptional		
allergiesSectionEntriesOptional	AllergiesSectionEntriesOptional	0..1	SHOULD	YES	AllergiesSectionEntriesOptional		
authenticator	authenticator	0..*	MAY	YES	Authenticator	CONF:5607	
author	author	0..1	SHALL	YES	Author	CONF:5444	
authorization	authorization	0..*		YES	Authorization		
billing	billing	0..1		YES	Billing		
component	component	1..1		YES	Component2		
componentOf	componentOf	1..1	MAY	YES	ComponentOf	CONF:9955	
componentOf2	componentOf2	0..1		YES	ComponentOf		
custodian	custodian	1..1	SHALL	YES	Custodian	iv.CONF:5519	
dataEnterer	dataEnterer	0..1	MAY	YES	DataEnterer	CONF:5441	
documentationOf	documentationOf	0..*		YES	DocumentationOf		
humanAuthor	humanAuthor	0..1	MAY	YES	HumanAuthor		
informant	informant	0..1	MAY	YES	Informant	CONF:8001	
informationRecipient	informationRecipient	0..*	MAY	YES	InformationRecipient	CONF:5565	
inFulfillmentOf	inFulfillmentOf	0..*	MAY	YES	InFulfillmentOf	CONF:9952	
legalAuthenticator	legalAuthenticator	0..1	SHOULD	YES	LegalAuthenticator	CONF:5579	
participant	participant	0..*		YES	Participant1		
recordTarget	recordTarget	0..1	SHALL	YES	RecordTarget	CONF:5266	
relatedDocument	relatedDocument	0..*		YES	RelatedDocument		

emspcr::PatientCareReport							
cda::clinicaldocument[cda:templateId/@root = 2.16.840.1.113883.17.3.10.1]/							
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)
supportParticipant	supportParticipant	0..*	MAY	YES	ParticipantSupport	CONF:10003	
typeId	typeId	1..1	SHALL	YES	InfrastructureRootType	CONF:5361	

Patient Care Report example

```
<?xml version="1.0" encoding="UTF-8"?>
<ClinicalDocument xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns="urn:hl7-org:v3" xsi:schemaLocation="urn:hl7-org:v3 CDA.xsd"
  classCode="DOCCLIN" moodCode="EVN">
  <realmCode code="US"/>
  <typeId root="2.16.840.1.113883.1.3"/>
  <templateId root="2.16.840.1.113883.10.20.22.1.1"/>
  <templateId root="2.16.840.1.113883.17.3.10.1"/>
  <id root="1897365050"/>
  <code code="67796-3" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="EMS Patient Care Report"/>
  <title/>
  <effectiveTime/>
  <confidentialityCode codeSystem="2.16.840.1.113883.5.25"
codeSystemName="ConfidentialityCode"/>
  <languageCode/>
  <setId root="c0024834-c2a4-4e9b-a298-242055935ab9"/>
  <versionNumber value="1"/>
  <recordTarget contextControlCode="OP">
    <typeId root="2.16.840.1.113883.1.3"/>
    <patientRole/>
  </recordTarget>
  <author typeCode="AUT">
    <time/>
    <assignedAuthor classCode="ASSIGNED">
      <id root="1055620639"/>
    </assignedAuthor>
  </author>
  <author>
    <time/>
    <assignedAuthor/>
  </author>
  <custodian/>
  <componentOf typeCode="COMP">
    <encompassingEncounter classCode="ENC" moodCode="EVN">
      <effectiveTime>
        <low value="2012"/>
        <high value="2012"/>
      </effectiveTime>
      <location>
        <healthCareFacility classCode="SDLOC">
          <id root="1610117679"/>
        </healthCareFacility>
      </location>
    </encompassingEncounter>
  </componentOf>
  <component>
    <structuredBody>
      <component>
        <section>
          <realmCode/>
```

```

<typeId root="2.16.840.1.113883.1.3"/>
<templateId root="2.16.840.1.113883.10.20.22.2.21"/>
<id root="76705380"/>
<code code="42348-3" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Advance Directives"/>
<title/>
<confidentialityCode code="Value"/>
<languageCode/>
<author typeCode="AUT">
  <time/>
  <assignedAuthor classCode="ASSIGNED">
    <id root="1701485771"/>
  </assignedAuthor>
</author>
<author>
  <time/>
  <assignedAuthor/>
</author>
<entry>
  <observation classCode="OBS" moodCode="EVN">
    <realmCode/>
    <typeId root="2.16.840.1.113883.1.3"/>
    <templateId root="2.16.840.1.113883.10.20.22.4.48"/>
    <id root="1226760513"/>
    <code codeSystem="2.16.840.1.113883.6.96"
codeSystemName="SNOMEDCT"/>
    <statusCode code="completed"/>
    <effectiveTime>
      <low value="2012"/>
      <high value="2012"/>
    </effectiveTime>
    <languageCode/>
    <author typeCode="AUT">
      <time/>
      <assignedAuthor classCode="ASSIGNED">
        <id root="11506183"/>
      </assignedAuthor>
    </author>
    <author>
      <time/>
      <assignedAuthor/>
    </author>
  </observation>
</entry>
</section>
</component>
<component>
  <section>
    <realmCode/>
    <typeId root="2.16.840.1.113883.1.3"/>
    <templateId root="2.16.840.1.113883.10.20.22.2.6"/>
    <id root="606163006"/>
    <code code="48765-2" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Allergies, adverse reactions, alerts"/>
    <title/>
    <confidentialityCode code="Value"/>
    <languageCode/>
    <author typeCode="AUT">
      <time/>
      <assignedAuthor classCode="ASSIGNED">
        <id root="1627428008"/>
      </assignedAuthor>
    </author>
  </author>

```

```

    <time/>
    <assignedAuthor/>
  </author>
  <entry>
    <act classCode="ACT" moodCode="EVN">
      <realmCode/>
      <typeId root="2.16.840.1.113883.1.3"/>
      <templateId root="2.16.840.1.113883.10.20.22.4.30"/>
      <id root="1989150888"/>
      <code code="48765-2" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Allergies, adverse reactions, alerts"/>
      <effectiveTime>
        <low value="2012"/>
        <high value="2012"/>
      </effectiveTime>
      <languageCode/>
      <author typeCode="AUT">
        <time/>
        <assignedAuthor classCode="ASSIGNED">
          <id root="70729620"/>
        </assignedAuthor>
      </author>
      <author>
        <time/>
        <assignedAuthor/>
      </author>
      <entryRelationship>
        <observation classCode="OBS" moodCode="EVN">
          <realmCode/>
          <typeId root="2.16.840.1.113883.1.3"/>
          <templateId root="2.16.840.1.113883.10.20.22.4.7"/>
          <id root="1625485119"/>
          <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"
codeSystemName="HL7ActCode"/>
          <statusCode code="completed"/>
          <effectiveTime>
            <low value="2012"/>
            <high value="2012"/>
          </effectiveTime>
          <languageCode/>
          <author typeCode="AUT">
            <time/>
            <assignedAuthor classCode="ASSIGNED"/>
          </author>
          <author>
            <time/>
            <assignedAuthor/>
          </author>
          <entryRelationship>
            <observation classCode="OBS" moodCode="EVN">
              <realmCode/>
              <typeId root="2.16.840.1.113883.1.3"/>
              <templateId root="2.16.840.1.113883.10.20.22.4.9"/>
              <id root="1724275965"/>
              <code code="1049869200"/>
              <statusCode code="completed"/>
              <effectiveTime>
                <low value="2012"/>
                <high value="2012"/>
              </effectiveTime>
              <languageCode/>
              <author typeCode="AUT"/>
            </author>
          </entryRelationship>

```

```

        <observation/>
      </entryRelationship>
      <entryRelationship>
        <procedure/>
      </entryRelationship>
      <entryRelationship>
        <substanceAdministration classCode="SBADM"/>
      </entryRelationship>
    </observation>
  </entryRelationship>
  <entryRelationship>
    <observation classCode="OBS" moodCode="EVN">
      <realmCode/>
      <typeId root="2.16.840.1.113883.1.3"/>
      <templateId root="2.16.840.1.113883.10.20.22.4.8"/>
      <id root="705150352"/>
      <code code="SEV" codeSystem="2.16.840.1.113883.5.4"
codeSystemName="HL7ActCode" displayName="Severity observation"/>
      <statusCode code="completed"/>
      <effectiveTime>
        <low value="2012"/>
        <high value="2012"/>
      </effectiveTime>
      <languageCode/>
      <author typeCode="AUT"/>
      <author/>
    </observation>
  </entryRelationship>
  <entryRelationship>
    <observation classCode="OBS" moodCode="EVN">
      <realmCode/>
      <typeId root="2.16.840.1.113883.1.3"/>
      <templateId root="2.16.840.1.113883.10.20.22.4.28"/>
      <id root="522295651"/>
      <code code="33999-4" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Status"/>
      <statusCode code="completed"/>
      <effectiveTime>
        <low value="2012"/>
        <high value="2012"/>
      </effectiveTime>
      <languageCode/>
      <author typeCode="AUT"/>
      <author/>
    </observation>
  </entryRelationship>
</observation>
</entryRelationship>
</act>
</entry>
</section>
</component>
<component>
  <section>
    <realmCode/>
    <typeId root="2.16.840.1.113883.1.3"/>
    <templateId root="2.16.840.1.113883.17.3.10.1.5"/>
    <id root="570890566"/>
    <code code="67659#3" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC"/>
    <title/>
    <confidentialityCode code="Value"/>
    <languageCode/>
    <author typeCode="AUT">

```

```

        <time/>
        <assignedAuthor classCode="ASSIGNED">
            <id root="584985666"/>
        </assignedAuthor>
    </author>
    <author>
        <time/>
        <assignedAuthor/>
    </author>
</entry>
<observation>
    <realmCode/>
    <typeId root="2.16.840.1.113883.1.3"/>
    <id root="53358209"/>
    <code code="76412159"/>
    <effectiveTime>
        <low value="2012"/>
        <high value="2012"/>
    </effectiveTime>
    <languageCode/>
    <author typeCode="AUT">
        <time/>
        <assignedAuthor classCode="ASSIGNED">
            <id root="463992789"/>
        </assignedAuthor>
    </author>
    <author>
        <time/>
        <assignedAuthor/>
    </author>
</observation>
</entry>
<entry>
    <observation>
        <realmCode/>
        <typeId root="2.16.840.1.113883.1.3"/>
        <id root="543358855"/>
        <code code="100257824"/>
        <effectiveTime>
            <low value="2012"/>
            <high value="2012"/>
        </effectiveTime>
        <languageCode/>
        <author typeCode="AUT">
            <time/>
            <assignedAuthor classCode="ASSIGNED">
                <id root="1847342921"/>
            </assignedAuthor>
        </author>
        <author>
            <time/>
            <assignedAuthor/>
        </author>
    </observation>
</entry>
</section>
</component>
</structuredBody>
</component>
</ClinicalDocument>

```

Chapter

3

SECTION TEMPLATES

Topics:

- *Billing*

Billing

[Section: templateId 2.16.840.1.113883.17.3.10.1.5]

1. **SHALL** contain zero or one [0..1] **code/@code="67659#3"** (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
2. **SHALL** contain exactly one [1..1] **levelOfService**
 - a. This levelOfService **SHALL** contain exactly one [1..1] **code/@code="67556#1"** (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This levelOfService **SHALL** contain zero or more [0..*] **value**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.17.3.5.71 *EMSBillingCondition* **STATIC**, where its data type is CD
3. Contains zero or one [0..1] **billingCondition**
 - a. This billingCondition **SHALL** contain exactly one [1..1] **code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.17.3.5.71 *EMSBillingCondition* **STATIC**
 - b. This billingCondition **SHALL** contain zero or more [0..*] **value**, where its data type is CD

emspcr::Billing							
/cda:ClinicalDocument/cda:component/cda:structuredBody/cda:component/cda:section[cda:templateId/@root = 2.16.840.1.113883.17.3.10.1.5]/							
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)
classCode	@classCode	0..1		NO	ActClass		DOCSECT
moodCode	@moodCode	0..1		NO	ActMood		EVN
nullFlavor	@nullFlavor	0..1		NO	NullFlavor		ASKU
sectionId	@sectionId	0..1		NO	String		
code	code	0..1	SHALL	YES	CE		LOINC 2.16.840.1.113883.6.1 67659#3
confidentialityCode	confidentialityCode	0..1		YES	CE		
id	id	0..1		YES	II		
languageCode	languageCode	0..1		YES	CS		
realmCode	realmCode	0..*		YES	CS		
templateId	templateId	0..*		YES	II		2.16.840.1.113883.17.3.10.1.5
title	title	0..1		YES	ST		
author	author	0..*		YES	Author		
billingCondition	billingCondition	0..1		YES	BillingCondition		
component	component	0..*		YES	Component5		
entry	entry	0..*		YES	Entry		
informant	informant	0..*		YES	Informant12		
levelOfService	levelOfService	1..1	SHALL	YES	LevelOfService		
subject	subject	0..1		YES	Subject		
text	text	0..1		YES	StrucDocText		

emspcr::Billing							
/cda:ClinicalDocument/cda:component/cda:structuredBody/cda:component/cda:section[cda:templateId/@root = 2.16.840.1.113883.17.3.10.1.5]/							
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)
typeId	typeId	0..1		YES	InfrastructureRootType	Type	

Billing example

```
<?xml version="1.0" encoding="UTF-8"?>
<section xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="urn:hl7-org:v3"
  xsi:schemaLocation="urn:hl7-org:v3 CDA.xsd">
  <templateId root="2.16.840.1.113883.17.3.10.1.5"/>
  <id root="497634068"/>
  <code code="67659#3" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"/>
  <title/>
  <entry>
    <observation>
      <id root="1657331315"/>
      <code code="1992380984"/>
      <effectiveTime>
        <low value="2012"/>
        <high value="2012"/>
      </effectiveTime>
    </observation>
  </entry>
  <entry>
    <observation>
      <id root="1276290393"/>
      <code code="72714789"/>
      <effectiveTime>
        <low value="2012"/>
        <high value="2012"/>
      </effectiveTime>
    </observation>
  </entry>
</section>
```

Chapter

4

CLINICAL STATEMENT TEMPLATES

This section of the Implementation Guide details the clinical statement entries referenced in the document section templates. The clinical statement entry templates are arranged alphabetically.

Chapter 5

OTHER CLASSES

This section of the Implementation Guide describes other classes that are not CDA Clinical Documents, Sections, or Clinical Statements.

Chapter

6

VALUE SETS

Topics:

- [EMS Billing Condition](#)
- [EMS Level Of Service](#)

The following tables summarize the value sets used in this Implementation Guide.

EMS Billing Condition

Value Set	EMSBillingCondition - 2.16.840.1.113883.17.3.5.71
Code System	LOINC - 2.16.840.1.113883.6.1

EMS Level Of Service

Value Set	EMSLevelOfService - 2.16.840.1.113883.17.3.5.70
Code System	LOINC - 2.16.840.1.113883.6.1

REFERENCES

- HL7 Implementation Guide: CDA Release 2 – Continuity of Care Document (CCD) A CDA implementation of ASTM E2369-05 Standard Specification for Continuity of Care Record® (CCR) April 01, 2007 available through [HL7](#) .
- HL7 Implementation Guide for CDA Release 2 Quality Reporting Document Architecture (QRDA) Draft Standard for Trial Use March 2009. Available at: [Quality Reporting Document Architecture \(QRDA\)](#)
- HL7 Implementation Guide for CDA Release 2 CDA for Public Health Case Reports (PHCR) Informative Standard October 2009. Available through [HL7](#) .
- HL7 Implementation Guide for CDA Release 2: NHSN Healthcare Associated Infection (HAI) Reports, Release 2 Draft Standard for Trial Use January 2009 Available at: [NHSN Healthcare Associated Infection \(HAI\) Reports](#)
- Dolin RH, Alschuler L, Boyer S, Beebe C, Behlen FM, Biron PV, Shabo A, (Editors). HL7 Clinical Document Architecture, Release 2.0. ANSI-approved HL7 Standard; May 2005. Ann Arbor, Mich.: Health Level Seven, Inc. Available through [HL7](#) or if an HL7 member with the following link: [CDA Release 2 Normative Web Edition](#).
- [LOINC®](#) : Logical Observation Identifiers Names and Codes, Regenstrief Institute.
- [SNOMED CT®](#) : SNOMED Clinical Terms SNOMED International Organization.
- Extensible Markup Language, www.w3.org/XML .
- Dolin RH, Alschuler L, Boyer S, Beebe C, Behlen FM, Biron PV, Shabo A., HL7 Clinical Document Architecture, Release 2. J Am Med Inform Assoc. 2006;13:30-39. Available at: <http://www.jamia.org/cgi/reprint/13/1/30> .
- Using SNOMED CT in HL7 Version 3; Implementation Guide, Release 1.5. Available through [HL7](#) or if an HL7 member with the following link: [Using SNOMED CT in HL7 Version 3](#)

