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**HL7 Guidance: C-CDA Rubric Criteria, Release 1**

April 2020

**HL7 Informative Guide**

**Sponsored by:
Structured Documents**

**Patient Care**

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|  |  |
| --- | --- |
| **Terminology** | **Owner/Contact** |
| Current Procedures Terminology (CPT) code set | American Medical Associationhttps://www.ama-assn.org/practice-management/cpt-licensing |
| SNOMED CT | SNOMED International http://www.snomed.org/snomed-ct/get-snomed-ct or info@ihtsdo.org |
| Logical Observation Identifiers Names & Codes (LOINC) | Regenstrief Institute |
| International Classification of Diseases (ICD) codes | World Health Organization (WHO) |
| NUCC Health Care Provider Taxonomy code set | American Medical Association. Please see www.nucc.org. AMA licensing contact: 312-464-5022 (AMA IP services) |

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# OVERVIEW

This document contains rubric criteria created through an ongoing project in the HL7 Structured Documents Work Group (SDWG), originating in 2016. Throughout 2018, a group of HL7 members created a new set of rubrics to add to the original rubric. This project identifies key problem areas in real system-generated C-CDA documents where similar data is consistently misrepresented or incomplete. Variably constructed data removes the ability to share and compare data reliably, adversely impacting interoperability. The goal is to promote the expansion of nationwide interoperability by allowing providers and health IT developers to identify inconsistencies in data representation in C-CDA documents and proactively adopt tighter constraints to eliminate the variability using this rubric.

The rubric criteria indicate where the implementation community, using the C-CDA standard, has agreed the constraints need improvement to support a higher degree of interoperability. The C-CDA Rubric process provides predictable, transparent, and collaborative results that highlight areas for improvement according to the C-CDA specifications. These measures of improvement, which are necessary to expand nationwide interoperability, can be immediately implemented.

The balloting process provided transparent, collaborative vetting of existing and new rubric criteria to establish and evolve the criteria.

## Need

There is an industry need for disparate systems to exchange information with each other.

End users can utilize the rubric criteria to determine the quality of the C-CDA documents produced by their applications. Iterative discussions between clinical information users and C-CDA document creators based on these rubrics will lead to C-CDA data quality improvement.

## Explanation of the Rubric Criteria

The rubric criteria are a set of tighter constraints then those that exist in C-CDA R2.1, which the implementer community agreed are necessary to expand interoperability. In conjunction with best practice testing tools, the rubric criteria provide feedback on generated C-CDA documents with respect to industry acknowledged best practices adherence.

The rubric criteria also are intended to help drive the EHR vendor community towards consistent implementation of the C-CDA standard. They are not to be interpreted as additional requirements for certification.

There are two types of rubric criteria identified:

**Required** – All tools adopting these criteria should return an error.

**Informational** - All tools adopting these criteria should return a warning, not an error.

## Organization of this Guide

The rubric criteria are organized into “Common Rubrics”, “Header Rubrics” and “Section/Domain Specific Rubrics”.

* Common Rubrics: Rubrics that universally apply across the header and/or body of the document regardless of the location (e.g. time zone offset Rubrics).
* Header Rubrics: Rubrics that are specific to header elements, attributes, participants or relationships.
* Section/Domain Specific Rubrics: Rubrics unique to section types or domains (e.g. entry linkings within the domain of care planning) not already defined in the common rule section/chapter (e.g. Medication sig or timing).

Within each of the areas, the rubrics are further divided into required or informational.

Rubrics are sequentially numbered (e.g. Rubric-1) and assigned a high-level name (e.g. DisplayName SHALL be accurate). A testable/codable statement follows (e.g. If an @displayName is present with an @code then the text of the @displayName **SHALL** be the text of the code system’s preferred name.) A rubric intent is provided to clarify the reasoning behind the rubric.

Examples: Highly excerpted xml examples are provided to focus on the rubric issue. Excerpted fields are noted with ellipses (…). The specific foci within the example are also highlighted. Links to related full examples within the C-CDA Example Task Force are provided where applicable.

# COMMON RUBRICS

## Required

#### Rubric- 1 DisplayName SHALL be accurate

**Implementation Detail:** If an @displayName is present with an @code then the text of the @displayName **SHALL** be the text of the code system’s preferred name.

##### Rubric Intent

If code's displayName is present and it conflicts with the codeSystem's preferred displayName then a tool should throw an error. If a displayName isn't present, then a tool should not return an error.

##### Examples

C-CDA Examples Task Force Link:

See entry examples located on the Examples Task Force pages: <http://hl7-c-cda-examples.herokuapp.com/>

Code and Display Name alignment in Single Administration of Medication Example: <http://cdasearch.hl7.org/examples/view/051c409be64e64d6b35844891314a826e1496106>

Figure 1: @Code and @ DisplayName Alignment

<manufacturedMaterial>

 <code code="573621" codeSystem="2.16.840.1.113883.6.88"

 codeSystemName="RxNorm"

 displayName="Albuterol 0.09 MG/ACTUAT [Proventil]"/>
</manufacturedMaterial>

Figure 2: @Code and @DisplayName Misalignment

< manufacturedMaterial>

 <code code="573621" codeSystem="2.16.840.1.113883.6.88"

 codeSystemName="RxNorm"

 displayName="Aspirin”/>
</manufacturedMaterial >

Figure 3: @Code and @DisplayName Misalignment


#### Rubric-2 Identifiers SHALL be unique

**Implementation Detail:** If Instance Identifiers (IDs) are duplicated in a document instance, then the attributes of that class, when present, **SHALL** have the same values OR **SHALL** be the ID in an Entry Reference template [act: identifier urn:oid:2.16.840.1.113883.10.20.22.4.122] and/or (in the case of encounter) the encompassingEncounter/ID **SHALL** be identical to one encounterEntry/id.

##### Rubric Intent

Identifiers (i.e., <id/>) in clinicalStatements in CDA documents provide unique identification to each statement. IDs can also aid in secondary use of data.

With few exceptions, IDs must be unique across a single document instance. In one notable exception Entry Reference (TemplateID 2.16.840.1.113883.10.20.22.4.122) ids must equal the ID if another entry in the document. An encompassing encounter will have the same id as one encounter in the section. One ID may be identical to another ID if it is a repeated instance of the clinical statement residing elsewhere intentionally.

##### Examples

C-CDA Examples Task Force Link:

See entry examples located on the Examples Task Force pages: <http://hl7-c-cda-examples.herokuapp.com/>

Unique IDs in Active Problem Example: <http://cdasearch.hl7.org/examples/view/b6f23e38249108eb5bc47905c949e9bb59fc33b4>

Figure 4: Unique IDs

<observation classCode="OBS" moodCode="EVN">
 <!-- \*\* Allergy observation \*\* -->
 <templateId root="2.16.840.1.113883.10.20.22.4.7" extension="2014-06-

 09"/>
 <templateId root="2.16.840.1.113883.10.20.22.4.7"/>
 <id root="901db0f8-9355-4794-81cd-fd951ef07917"/>

 . . .

</observation>

#### Rubric-3: Each entry SHALL contain at least one Text reference

**Implementation Detail:** Minimally, in each outermost (primary) act in each entry, when entry/code exits, there **SHALL** be a code/Text/reference that points to the human readable text identified with section/text/@ID.

##### Rubric Intent

The intent of this rubric is to encourage referencing between the narrative and coded entry. This will enable validation and comparison of the accuracy of the narrative read by humans and the contained computer processable encoded data the human may not see.

##### Examples

C-CDA Examples Task Force Link: Links Below

For examples on technical accuracy of text referencing across entry types, please review the methods of referencing in the C-CDA examples task force links below. Note that these do not have clinically relevant codes or text:

[Narrative Reference - Supply](http://hl7-c-cda-examples.herokuapp.com/examples/view/General/Narrative%20Reference%20-%20Supply)

[Narrative Reference - Procedure](http://hl7-c-cda-examples.herokuapp.com/examples/view/General/Narrative%20Reference%20-%20Procedure)

[Narrative Reference - Organizer](http://hl7-c-cda-examples.herokuapp.com/examples/view/General/Narrative%20Reference%20-%20Organizer)

[Narrative Reference - SubstanceAdministration](http://hl7-c-cda-examples.herokuapp.com/examples/view/General/Narrative%20Reference%20-%20SubstanceAdministration)

[Narrative Reference - Act](http://hl7-c-cda-examples.herokuapp.com/examples/view/General/Narrative%20Reference%20-%20Act)

[Narrative Reference - Encounter](http://hl7-c-cda-examples.herokuapp.com/examples/view/General/Narrative%20Reference%20-%20Encounter)

[Narrative Reference - Observation](http://hl7-c-cda-examples.herokuapp.com/examples/view/General/Narrative%20Reference%20-%20Observation)

Note 1: A poor example is the absence of at least one text reference. In addition, it is not necessary to place a reference in multiple locations within a single entry

Figure 5: Text Reference – Presence

<!-- Section Text -->

<tbody>

<!-- This ID is referenced from the coded entry-->
 <tr ID="Medication\_1">
 <td>

 <content> Noscapine 3 MG/ML Oral Solution</content>
 </td>
 <td>
 ...
 </tr>
</tbody>

<!—Corresponding Entry -->

<entry typeCode="DRIV">
 <substanceAdministration classCode="SBADM" moodCode="INT">
...
 <reference value="#Medication\_1"/>
 </text>
 ...
 <manufacturedMaterial>
 <code code="102494" codeSystem="2.16.840.1.113883.6.88"

 displayName="Noscapine MG/ML Oral Solution" />
 </manufacturedMaterial>
 </manufacturedProduct>

...

</entry>

#### Rubric-4: entryTextReference alignment

**Implementation Detail:** Where a link between the narrative (section.text), identified with section/text/(any)/@ID="xxx", and coded clinical data (entry) exists, identified with entry/act/text/reference/@value="#xxx", the section.text must conceptually align with the meaning of the encoded attributes and elements within the entry it links with.

##### Rubric Intent

The intent of this rubric is to compare the accuracy of narrative that is read by humans and the contained computer processable encoded data that the human may not see. In addition to the presence of textReference, this rubric assesses accuracy between coded entries and human narrative.

Note 2: As many textReferences as there are present should be compared. If the text has more text in it than in the coded entries, that is acceptable – as long as it does not conflict.

##### Examples

For a full example of tagging technique of textReferencing see 3.1.3 Rubric-3 and its example Figure 5. The examples here will focus on truncated examples where alignment exists and where it does not.

For examples on technical accuracy of text referencing across entry types, review the methods of referencing in the C-CDA examples task force links below. Note that these do not have clinically relevant codes or text:

[Narrative Reference - Supply](http://hl7-c-cda-examples.herokuapp.com/examples/view/General/Narrative%20Reference%20-%20Supply)

[Narrative Reference - Procedure](http://hl7-c-cda-examples.herokuapp.com/examples/view/General/Narrative%20Reference%20-%20Procedure)

[Narrative Reference - Organizer](http://hl7-c-cda-examples.herokuapp.com/examples/view/General/Narrative%20Reference%20-%20Organizer)

[Narrative Reference - SubstanceAdministration](http://hl7-c-cda-examples.herokuapp.com/examples/view/General/Narrative%20Reference%20-%20SubstanceAdministration)

[Narrative Reference - Act](http://hl7-c-cda-examples.herokuapp.com/examples/view/General/Narrative%20Reference%20-%20Act)

[Narrative Reference - Encounter](http://hl7-c-cda-examples.herokuapp.com/examples/view/General/Narrative%20Reference%20-%20Encounter)

[Narrative Reference - Observation](http://hl7-c-cda-examples.herokuapp.com/examples/view/General/Narrative%20Reference%20-%20Observation)

Figure 6: entryTextReference Alignment – Medication Example

< tbody>

<!-- This ID is referenced from the coded entry-->

 <tr ID="Medication\_1">

 <td>

 <content> Noscapine 3 MG/ML Oral Solution</content>

 </td>

 <td>

 <content>every 4 to 6 hours prn for cough</content>

 </td>

 <td>

 <content>6 mg (2 mL)</content>

 </td>

 <td>12/21/17 - 12/31/17</td>

 <td>Active</td>

 </tr>

</tbody>

 ...

 <text>

 <reference value="#Medication\_1"/>

 </text>

 . . .

 <routeCode code="C38288" codeSystem="2.16.840.1.113883.3.26.1.1"

 codeSystemName="NCI Thesaurus" displayName="ORAL"/>

 ...

 <effectiveTime xsi:type="PIVL\_TS" institutionSpecified="true"

 operator="A">

 <period xsi:type="IVL\_PQ">

 <low value="4" unit="h"/>

 <high value="6" unit="h"/>

 </period>

 </effectiveTime>

 . . .

 <manufacturedMaterial>

 <code code="102494" codeSystem="2.16.840.1.113883.6.88"

 displayName="Noscapine 3 MG/ML Oral Solution" />

 </manufacturedMaterial>

 ...

Figure 7: entryTextReference Mislignment – Medication Example

<!-- Section Text -->

<tbody>

<!-- This ID is referenced from the coded entry-->

 <tr ID="Medication\_1">

 <td>

 <content>Acetaminophen</content>

 </td>

 <td>

 <content>Per Rectum</content>

 </td>

 <td>

 <content>2 tabs</content>

 </td>

 <td>12/21/17 - 12/31/17</td>

 <td>Active</td>

 </tr>

</tbody>

 ...

 <text>

 <reference value="#Medication\_1"/>

 </text>

 <!-- Entry -->

 ...

 <routeCode code="C38288" codeSystem="2.16.840.1.113883.3.26.1.1"

 codeSystemName="NCI Thesaurus" displayName="ORAL"/>

 ...

 <manufacturedMaterial>

 <code code="102494" codeSystem="2.16.840.1.113883.6.88"

 displayName="Noscapine 3 MG/ML Oral Solution" />

 </manufacturedMaterial>

 ...

Figure 8: entryTextReference Alignment – Problem Example

|  |
| --- |
| <!-- Section Text -->. . . <tbody><!-- This ID is referenced from the coded entry--><tbody> <tr ID="Problem1"> <td>Community Acquired Pneumonia</td>  <!—Note: This could be a synonym or less granular term instead of exact same for example Community Pneumonia or Pneumonia. It would also be acceptable to have increased narrative text such as: Mrs. Seven, a pleasant elderly woman, who lives in Anytown, USA came Down with Community Acquired Pneumonia on February 27 2014 --> <td> <content>Onset: February 27 2014</content> </td> <td>Active</td> </tr></tbody>. . .  <!-- Entry --> <text> <reference value="#Problem1"/> </text> <statusCode code="completed"/> <effectiveTime> <!-- This represents the date of biological onset. --> <low value="20140227"/> </effectiveTime> <!-- This is a SNOMED code as the primary vocabulary for problem lists--> <value xsi:type="CD" code="385093006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT" displayName="Community Acquired Pneumonia"/> . . .   |

Figure 9: entryTextReference Mislignment – Problem Example

|  |
| --- |
| <!-- Section Text -->. . . <tbody><!-- This ID is referenced from the coded entry--><tbody> <tr ID="Problem1"> <td>Celiac Disease</td>  <td> <content>Onset: February 27 2014</content> </td> <td>Active</td> </tr></tbody><!-- Entry -->. . .  <text> <reference value="#Problem1"/> </text> <statusCode code="completed"/> <effectiveTime> <!-- This represents the date of biological onset. --> <low value="20140227"/> </effectiveTime> <!-- This is a SNOMED code as the primary vocabulary for problem lists--> <value xsi:type="CD" code="385093006"  codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT" displayName="Community Acquired  Pneumonia"/>. . .  |

#### Rubric-5: The EffectiveDate/Time elements in an Organizer act SHALL encompass the underlying observations.

**Implementation Detail:** Each /organizer/component/observation/effectiveTime/@value **SHALL** be equal to or within the organizer's /organizer/effectiveTime/low/@value and the organizer’s /organizer/effectiveTime/high/@value

##### Rubric Intent

The intent of this rubric is to encourage technical accuracy with respect to clinical practice. For example, a CBC laboratory result report would not contain CBC components (e.g. WBC, RBC, etc.) that are from a blood specimen drawn at a different time.

##### Examples

C-CDA Examples Task Force Link:

Result Section Examples: <http://hl7-c-cda-examples.herokuapp.com/sections/Results>

Vital Sign section examples: <http://hl7-c-cda-examples.herokuapp.com/sections/Vital%20Signs>

Figure 10: Organizer and component observation effectiveTime agreement

<organizer classCode="BATTERY" moodCode="EVN">

 <!-- \*\* Result organizer (V3) \*\* -->

 <templateId root="2.16.840.1.113883.10.20.22.4.1" extension="2015-08-

 01"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.1"/>

 <id root="7d5a02b0-67a4-11db-bd13-0800200c9a66"/>

 <code code="57021-8" displayName="CBC W Auto Differential panel in

 Blood"codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"/>

 <statusCode code="completed"/>

 <effectiveTime>
 <low value="202003190830-0800"/>
 <high value="202003190830-0800"/>
 </effectiveTime>

 <component>

 <observation classCode="OBS" moodCode="EVN">

 <!-- \*\* Result observation (V3) \*\* -->

 <templateId root="2.16.840.1.113883.10.20.22.4.2" extension="2015-

 08-01"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.2"/>

 <id root="107c2dc0-67a5-11db-bd13-0800200c9a66"/>

 <code code="718-7" displayName="Hemoglobin"

 codeSystem="2.16.840.1.113883.6.1"

 codeSystemName="LOINC"/>

 <statusCode code="completed"/>

 <effectiveTime value="202003190830-0800"/>

 ...

Figure 11: Organizer and component observation effectiveTime disagreement

<organizer classCode="BATTERY" moodCode="EVN">
 <!-- \*\* Result organizer (V3) \*\* -->
 <templateId root="2.16.840.1.113883.10.20.22.4.1" extension="2015-08-

 01"/>
 <templateId root="2.16.840.1.113883.10.20.22.4.1"/>
 <id root="7d5a02b0-67a4-11db-bd13-0800200c9a66"/>
 <code code="57021-8" displayName="CBC W Auto Differential panel in Blood"

 codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"/>
 <statusCode code="completed"/>
 <effectiveTime>
 <low value="202003190830-0800"/>
 <high value="202003190830-0800"/>
 </effectiveTime>

 <component>
 <observation classCode="OBS" moodCode="EVN">
 <!-- \*\* Result observation (V3) \*\* -->
 <templateId root="2.16.840.1.113883.10.20.22.4.2" extension="2015-

 08-01"/>
 <templateId root="2.16.840.1.113883.10.20.22.4.2"/>
 <id root="107c2dc0-67a5-11db-bd13-0800200c9a66"/>
 <code code="718-7" displayName="Hemoglobin"

 codeSystem="2.16.840.1.113883.6.1"

 codeSystemName="LOINC"/>
 <statusCode code="completed"/>
 <effectiveTime value="202003200930-0800"/>

 ...

Figure 12: Organizer effectiveTime poor practice – nulling component observation effectiveTime

<organizer classCode="BATTERY" moodCode="EVN">
 <!-- \*\* Result organizer (V3) \*\* -->
 <templateId root="2.16.840.1.113883.10.20.22.4.1" extension="2015-08-

 01"/>
 <templateId root="2.16.840.1.113883.10.20.22.4.1"/>
 <id root="7d5a02b0-67a4-11db-bd13-0800200c9a66"/>
 <code code="57021-8" displayName="CBC W Auto Differential panel in Blood"

 codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"/>
 <statusCode code="completed"/>
 <effectiveTime>
 <low value="202003190830-0800"/>
 <high value="202003190830-0800"/>
 </effectiveTime>

 <component>
 <observation classCode="OBS" moodCode="EVN">
 <!-- \*\* Result observation (V3) \*\* -->
 <templateId root="2.16.840.1.113883.10.20.22.4.2" extension="2015-

 08-01"/>
 <templateId root="2.16.840.1.113883.10.20.22.4.2"/>
 <id root="107c2dc0-67a5-11db-bd13-0800200c9a66"/>
 <code code="718-7" displayName="Hemoglobin"

 codeSystem="2.16.840.1.113883.6.1"

 codeSystemName="LOINC"/>
 <statusCode code="completed"/>
 <effectiveTime value="NI"/>

 ...

#### Rubric-6: Validation – Schema and schematron validation SHALL be the first step in rubric evaluation

**Implementation Detail:** Validation against CDA schema and C-CDA R2.1 shematron **SHALL** occur as the first step in tooling to support Rubric assessment.

##### Rubric Intent

The intent of this rubric is to encourage all C-CDA R2.1 rubric tooling ensures only valid documents are assessed. Tooling should provide notification if an invalid document is presented for evaluation.

##### Examples

Not Applicable

#### Rubric-7: Validation – XML documents that do not pass schema and schematron SHALL NOT receive a grade

**Implementation Detail:** XML documents that do not pass base xml schema and C-CDA R2.1 schematron without errors SHALL not receive a grade.

##### Rubric Intent

The intent of this rubric is to prevent end user misconception about document quality.

##### Examples

Not Applicable

## Informational

#### Rubric-8: Template IDs SHALL have version dates in @extension

**Implementation Detail:** A C-CDA R2.1 document, **SHALL** have at least one of the C-CDA R2.1 templateIDs asserted at /ClinicalDocument/templateId and **SHALL** have a /ClinicalDocument/templateId/@extension indicating the version, represented with "YYYY-MM-DD". And all template IDs that are defined in C-CDA R2.1 templates or C-CDA R2.1 supplemental templates contained in the document **SHALL** have at least one template ID with a templateId/@extension indicating the version, represented with "YYYY-MM-DD". Non-C-CDA R2.1 templates identified by templateIDs **MAY** be present.

##### Rubric Intent

The intent of this rubric is to encourage use of the correct C-CDA R2.1 template IDs and the correct format of those IDs (with version extension). Additional template IDs are permitted in open templates. All C-CDA templates are open templates.

##### Examples

C-CDA Examples Task Force Link:

See section or entry examples located on the Examples Task Force pages:: <http://hl7-c-cda-examples.herokuapp.com/>

Template IDs with proper versioning in Active Problem Example: <http://cdasearch.hl7.org/examples/view/b6f23e38249108eb5bc47905c949e9bb59fc33b4>

Figure 13: Template IDs with proper version identified in @extension

<!-- \*\* At the document level \*\* -->

<ClinicalDocument xmlns="urn:hl7-org:v3"

 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:voc="urn:hl7-

 org:v3/voc" xmlns:sdtc="urn:hl7-org:sdtc">
 <realmCode code="US"/>
 <typeId extension="POCD\_HD000040" root="2.16.840.1.113883.1.3"/>
 <!-- CCD template ID-->
 <templateId root="2.16.840.1.113883.10.20.22.1.2" extension="2015-08-

 01"/>
 <templateId root="2.16.840.1.113883.10.20.22.1.2"/>

 <!-- \*\* At the entry level \*\* -->

 <observation classCode="OBS" moodCode="EVN">
 <!-- \*\* Allergy observation \*\* -->
 <templateId root="2.16.840.1.113883.10.20.22.4.7" extension="2014-06-

 09"/>
 <templateId root="2.16.840.1.113883.10.20.22.4.7"/>

 <id root="7d5a02b0-67a4-11db-bd13-0800200c9a66"/>

 . . .

</observation>

Figure 14: Template IDs with no version identified in @extension

<!-- \*\* At the document level \*\* -->

<ClinicalDocument xmlns="urn:hl7-org:v3"

 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:voc="urn:hl7-

 org:v3/voc" xmlns:sdtc="urn:hl7-org:sdtc">
 <realmCode code="US"/>
 <typeId extension="POCD\_HD000040" root="2.16.840.1.113883.1.3"/>
 <!-- CCD template ID-->
 <templateId root="2.16.840.1.113883.10.20.22.1.2" />

 <!-- \*\* At the entry level \*\* -->

 <observation classCode="OBS" moodCode="EVN">
 <!-- \*\* Allergy observation \*\* -->
 <templateId root="2.16.840.1.113883.10.20.22.4.7"/>

 <id root="7d5a02b0-67a4-11db-bd13-0800200c9a66"/>

 . . .

</observation>

#### Rubric-9 effectiveTime and time lifespan SHALL be logical

**Implementation Detail:** EffectiveTime and time element values **SHALL** be less than one year prior to recordTarget/patientRole/patient/birthTime/value and less than 90 days before:

1) recordTarget/patientRole/patient/sdtc:deceasedTime value

OR

2) Deceased Observation templateId root="2.16.840.1.113883.10.20.22.4.79"]/observation/effectiveTime/low @value.

Exception: Family history section [templateId “2.16.840.1.113883.10.20.22.2.15"]/entry/organizer[templateId“2.16.840.1.113883.10.20.22.4.45"] /component/observation [TemplateId “2.16.840.1.113883.10.20.22.4.46"]/effectiveTime/@value **SHALL** be excluded from this rubric test

##### Rubric Intent

The intent of this rubric is to discourage illogical dating of entries and header time elements within a document instance.

##### Examples

C-CDA Examples Task Force Link:

Not applicable – The example task force focus is on sections and entries, not whole documents, thus comparison between header elements and entry time examples do not exist and are not planned at this time.

Figure 15: effectiveTime and Time within lifespan agreement – sdtc:deceasedTime

<!-- \*\* BirthTime \*\* -->

<birthTime value="19450501"/>
<!-- A full CDA example may include the Deceased Observation to indicate cause of death -->
<!-- A Deceased Observation may (also) be present in any section. Problem List is a suitable location -->
<sdtc:deceasedInd value="true" />

<!-- \*\* Patient Deceased Time in header \*\* -->
<sdtc:deceasedTime value="202003151500+0500" />

...

<!-- \*\* Example logical header times \*\* -->

<legalAuthenticator>
 <time value="20200215223615-0500"/>

<documentationOf>
 <serviceEvent classCode="PCPR">
 <effectiveTime>
 <low value="19750501"/>
 <high value="20200315"/>

...

<!-- \*\* Example logical entry effectiveTimes \*\* -->

 <!-- \*\* Author -->

 . . .

 <author>
 <templateId root="2.16.840.1.113883.10.20.22.4.119"/>
 <time value="202003151500+0500"/>

 ...

 <!-- \*\* Performer -->

 <performer>
 <time value="202003151400+0500"/>

 ...

 <!-- \*\* Clinical Statements -->

 <!-- \*\* Point in time -->

 <effectiveTime value="201909271300+0500"/>

 <!-- \*\* Range -->

 <effectiveTime xsi:type="IVL\_TS">
 <low value="20191103"/>
 <high value="20191203"/>
 </effectiveTime>

...

Figure 15: effectiveTime and Time within lifespan disagreement – sdtc:deceasedTime

<!-- \*\* BirthTime \*\* -->

<birthTime value="19450501"/>
...

<!-- A full CDA example may include the Deceased Observation to indicate cause of death -->
<!-- A Deceased Observation may (also) be present in any section. Problem List is a suitable location -->
<sdtc:deceasedInd value="true" />

<!-- \*\* Patient Deceased Time in header \*\* -->
<sdtc:deceasedTime value="202003151500+0500" />

...

<!-- \*\* Example illogical header times \*\* -->

<legalAuthenticator>
 <time value="00000000000-0000"/>

<documentationOf>
 <serviceEvent classCode="PCPR">
 <effectiveTime>
 <low value="19750501"/>
 <high value="20250315"/>

...

<!-- \*\* Example illogical entry effectiveTimes \*\* -->

 <!-- \*\* Author -->

 ...

 <author>
 <templateId root="2.16.840.1.113883.10.20.22.4.119"/>
 <time value="202103151500+0500"/>

 ...

 <!-- \*\* Performer -->

 <performer>
 <time value="000000000000+0000"/>

 ...

 <!-- \*\* Clinical Statements -->

 <!-- \*\* Point in time -->

 <effectiveTime value="000009271300+0000"/>

 <!-- \*\* Range -->

 <effectiveTime xsi:type="IVL\_TS">
 <low value="20251103"/>
 <high value="20251203"/>
 </effectiveTime>

 ...

Figure 17: effectiveTime and Time within lifespan agreement – deceased observation

<!-- \*\* BirthTime \*\* -->

<birthTime value="19450501"/>

. . .

<!-- \*\* Example logical header times \*\* -->

<legalAuthenticator>
 <time value="20200215223615-0500"/>

<documentationOf>
 <serviceEvent classCode="PCPR">
 <effectiveTime>
 <low value="19750501"/>
 <high value="20200315"/>

 ...

 <!-- \*\* Example logical entry effectiveTimes \*\* -->

 <entry>
 <observation classCode="OBS" moodCode="EVN">

 <!-- \*\* Deceased Observation Template \*\* -->
 <templateId root="2.16.840.1.113883.10.20.22.4.79"

 extension="2015-08-01"/>
 <id root="6898fae0-5c8a-11db-b0de-0800200c9a77"/>
 <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
 <statusCode code="completed"/>
 <effectiveTime>
 <low value="202003151500+0500"/>
 </effectiveTime>
 <value xsi:type="CD" code="419099009"

 codeSystem="2.16.840.1.113883.6.96" displayName="Dead"/>
 </observation>
 </entry>

 ...

 <!-- \*\* Author -->

 ...

 <author>
 <templateId root="2.16.840.1.113883.10.20.22.4.119"/>
 <time value="202003151500+0500"/>

 ...

 <!-- \*\* Performer -->

 <performer>
 <time value="202003151400+0500"/>

 ...

 <!-- \*\* Clinical Statements -->

 <!-- \*\* Point in time -->

 <effectiveTime value="201909271300+0500"/>

 <!-- \*\* Range -->

 <effectiveTime xsi:type="IVL\_TS">
 <low value="20191103"/>
 <high value="20191203"/>
 </effectiveTime>

 ...

Figure 17: effectiveTime and Time within lifespan disagreement – deceased observation

<!-- \*\* BirthTime \*\* -->

<birthTime value="19450501"/>

...

<!-- \*\* Example illogical header times \*\* -->

<legalAuthenticator>
 <time value="00000000000-0000"/>

<documentationOf>
 <serviceEvent classCode="PCPR">
 <effectiveTime>
 <low value="19750501"/>
 <high value="20250315"/>

 ...

 <entry>
 <observation classCode="OBS" moodCode="EVN">

 <!-- \*\* Deceased Observation Template \*\* -->
 <templateId root="2.16.840.1.113883.10.20.22.4.79" extension="2015-

 08-01"/>
 <id root="6898fae0-5c8a-11db-b0de-0800200c9a77"/>
 <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
 <statusCode code="completed"/>
 <effectiveTime>
 <low value="202003151500+0500"/>
 </effectiveTime>
 <value xsi:type="CD" code="419099009"

 codeSystem="2.16.840.1.113883.6.96" displayName="Dead"/>
 </observation>
 </entry>

 <!-- \*\* Example illogical entry effectiveTimes \*\* -->

 <!-- \*\* Author -->

 ...

 <author>
 <templateId root="2.16.840.1.113883.10.20.22.4.119"/>
 <time value="202103151500+0500"/>

 ...

 <!-- \*\* Performer -->

 <performer>
 <time value="000000000000+0000"/>

 ...

 <!-- \*\* Clinical Statements -->

 <!-- \*\* Point in time -->

 <effectiveTime value="000009271300+0000"/>

 <!-- \*\* Range -->

 <effectiveTime xsi:type="IVL\_TS">
 <low value="20201103"/>
 <high value="20201203"/>
 </effectiveTime>

 ...

#### Rubric-10 effectiveTime and time precision SHALL be logical

**Implementation Detail:** If more than 1 instance of effectiveTime or Time is present where there are only zeros in the hours, minutes, and seconds locations (or more) then a warning **SHALL** be issued.

##### Rubric Intent

The intent of this rubric is to ensure, when specifying dates and times, data is captured with as much precision as is known. The timestamp format allows for partial dates and partial times to be specified

##### Examples

See entry examples located on the Examples Task Force pages: ANY example: <http://hl7-c-cda-examples.herokuapp.com/>

EffectiveTime use in CDA Documents (Example Task force): http://cdasearch.hl7.org/examples/view/5a0b3a01f02cc01f665c2002

Figure 19: Select Appropriate Precision vs Over Precise effectiveTime Examples

<!-- \*\* BirthTime \*\* -->

<!-- \*\* BirthTime - Likely correct precision in older child or adult \*\* -->

<birthTime value="19450501"/>

<!-- \*\* BirthTime - Likely excessive precision in older child or adult \*\* -->

<birthTime value="194505010000-0000"/>

...

 <!-- \*\* Likely correct precision – entry example - observation \*\* -->

 <entry>
 <observation classCode="OBS" moodCode="EVN">

 ...

 <effectiveTime>
 <low value="2020031515+0500"/>
 </effectiveTime>

 <!-- \*\* Likely excessive precision – entry example - observation \*\* -->

 <entry>
 <observation classCode="OBS" moodCode="EVN">

 ...

 <effectiveTime>
 <low value="2020000000+0000"/>
 </effectiveTime>

 ...

# HEADER SPECIFIC RUBRICS

## Required

#### Rubric-11 Multiple Patient Name SHALL be identified with use or qualifiers

**Implementation Detail:** If more than 1 patient name is present, recordTarget/patient/name @use **SHALL** be present and SHALL equal "L" on one of the patient element instances.

 AND

* if more than 1 patient name is present, recordTarget/patient/name @use **SHALL** be present and **SHALL** equal a value from EntityNameUse value set <https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.15913/expansion/Latest> other than "L" on one of the patient element instances

 OR

* patient/name ("part": family or given or prefix or suffix)/qualifier **SHALL** be present and **SHALL** equal a value from EntityPersonNamePartQualifier value set <https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.11.20.9.26/expansion/Latest> in any additional patient/name element instances

##### Rubric Intent

The intent of this rubric is to ensure that when multiple and alternative patient names exist in a document instance it is possible to determine the meaning or use of the different names and to ensure that at least one of the names is the patient’s legal name.

##### Examples

C-CDA Examples Task Force Link:

Person Name Formatting: <http://cdasearch.hl7.org/examples/view/a5c2321b-06e1-4141-88f2-0ac1b902748d>

Figure 20: Appropriate Multiple Name Example

<patient>
<!-- The "L" is "Legal" from the value set EntityNameUse 2.16.840.1.113883.1.11.15913 -->
 <name use="L">
 <given>Evangeline</given>
<!-- The "CL" is "Call Me" from value set EntityPersonNamePartQualifier

 2.16.840.1.113883.11.20.9.26 -->
 <given qualifier="CL">Eve</given>
<!-- The "SP" is "Spouse" from value set EntityPersonNamePartQualifier

 2.16.840.1.113883.11.20.9.26 -->
 <family qualifier="SP">Betterhalf</family>
<!-- The "BR" is "Birth" from value set EntityPersonNamePartQualifier

 2.16.840.1.113883.11.20.9.26 -->
 <family qualifier="BR">Everywomen</family>
 </name>
<!-- The "A" is "Artist/Stage" from the value set EntityNameUse

 2.16.840.1.113883.1.11.15913 -->
 <name use="A">
 <given>Starlight</given>
 <family>Superwomen</family>
 </name>

 ...

 </patient>

Figure 21: Inappropriate Multiple Name Example

<patient>
 <name>
 <given>Evangeline</given>
 <given >Eve</given>
 <family>Betterhalf</family>
 <family>Everywomen</family>
 <family>Superwoman</family>
 </name>
 <name>
 <given>Marci</given>
 <given >Jane</given>
 <family>Betterhalf</family>
 </name>

 ...

 </patient>...

#### Rubric-12 Patient birthTime value SHALL be precise to the day

##### Rubric Intent

The intent of this rubric is to encourage systems to capture and communicate the year and day of birth.

##### Examples

C-CDA Examples Task Force Link:

Patient Deceased (includes birthtime): <http://cdasearch.hl7.org/examples/view/4f17c14a-a779-49aa-9b3d-b8f836ea8958>

Figure 22: Appropriate Precision of BirthTime Example

...

<!-- \*\* BirthTime \*\* -->

<!-- \*\* BirthTime - Correct precision in older child or adult \*\* -->

<birthTime value="19450501"/>

<!-- \*\* BirthTime – Acceptable precision in neonate\*\* -->

<birthTime value="202005011515-0800"/>

...

Figure 23: Inappropriate Precision of BirthTime Example

...

<!-- \*\* Imprecise BirthTime \*\* -->

<birthTime value="1945"/>

...

# SECTION/DOMAIN SPECIFIC RUBRICS

This portion of document describes rubrics that are unique to attributes or elements in entries within the stated section. The examples in this portion of the document will most often include only appropriate/accurate examples rather than inappropriate examples. Occasionally, inappropriate examples will be presented if deemed beneficial.

## Required

### Allergies

#### Rubric-13: Allergy - Intolerance Observation SHALL have a Reaction Observation

**Implementation Detail:** Allergy - Intolerance Observation TemplateID 2.16.840.1.113883.10.20.22.4.7 **SHALL** contain Reaction Observation (V2) nullFlavor in @value **SHALL** be permitted

##### Rubric Intent

The intent of this rubric is to require the presence of the reaction that occurred when a person was exposed to the represented allergen. In comparison, the base standard recommends the inclusion of the reaction (SHOULD). A null value is permitted within the reaction observation to encourage an assertion that the reaction is unknown if it is clinically unknown.

##### Examples

C-CDA Examples Task Force Link:

Allergy to PCN with Reaction: <http://cdasearch.hl7.org/examples/view/46224f150dee048bc8f907116d285b332739d3a0>

Figure 24: Appropriate Presence of Allergy Reaction Observation Example

...

<observation classCode="OBS" moodCode="EVN">
 <!-- \*\* Allergy observation (V2) \*\* -->
 <templateId root="2.16.840.1.113883.10.20.22.4.7" extension="2014-06-

 09"/>
 <templateId root="2.16.840.1.113883.10.20.22.4.7"/>

 ...

 <participant typeCode="CSM">
 <participantRole classCode="MANU">

 <playingEntity classCode="MMAT">
 <code code="70618" displayName="Penicillin"

 codeSystem="2.16.840.1.113883.6.88" codeSystemName="RxNorm"/>

 </playingEntity>

 </participantRole>
 </participant>

 <entryRelationship typeCode="MFST" inversionInd="true">
 <observation classCode="OBS" moodCode="EVN">
 <!-- \*\* Reaction Observation (V2) \*\* -->
 <templateId root="2.16.840.1.113883.10.20.22.4.9" extension="2014-

 06-09"/>
 <templateId root="2.16.840.1.113883.10.20.22.4.9"/>

 ...

 <value xsi:type="CD" code="422587007"

 codeSystem="2.16.840.1.113883.6.96" displayName="Nausea"/>

 <!-- \*\* OR – observation/value here is allowed to contain a null value\*\* -->

 <value nullFlavor="UNK"/>

 ...

</observation>

Figure 25: Absence of Allergy Reaction Observation Example

. . .

<observation classCode="OBS" moodCode="EVN">
 <!-- \*\* Allergy observation (V2) \*\* -->
 <templateId root="2.16.840.1.113883.10.20.22.4.7" extension="2014-06-

 09"/>
 <templateId root="2.16.840.1.113883.10.20.22.4.7"/>

 . . .

 <participant typeCode="CSM">
 <participantRole classCode="MANU">

 <playingEntity classCode="MMAT">
 <code code="70618" displayName="Penicillin"

 codeSystem="2.16.840.1.113883.6.88" codeSystemName="RxNorm"/>

 </playingEntity>

 </participantRole>
 </participant>

<!-- \*\* Reaction Observation (V2) Should be here\*\* -->

 . . .

</observation>

. . .

#### Rubric-14: Allergy statements SHALL contain authorTime

**Implementation Detail:** In an Allergy statement, there **SHALL** be at least one authorTime. The Allergy Concern Act TemplateID 2.16.840.1.113883.10.20.22.4.30 OR the Allergy - Intolerance Observation TemplateID 2.16.840.1.113883.10.20.22.4.7 **SHALL** contain the Author Participation template:2.16.840.1.113883.10.20.22.4.119 which **SHALL** contain author/time which **SHALL NOT** be nulled.

##### Rubric Intent

The intent of this rubric is to encourage the provision of data that can be interpreted as the most recent time a clinician addressed or noted the allergy. The intent of this rubric is also to prevent the sending of null values in the time attribute.

##### Examples

C-CDA Examples Task Force Link:

Allergy to PCN with author/time in the Allergy Concern Act AND the Allergy-Intolerance Observation: <http://cdasearch.hl7.org/examples/view/46224f150dee048bc8f907116d285b332739d3a0>

Figure 26: Appropriate Author Times in Allergy Statements Example

...

<entry typeCode="DRIV">

 <act classCode="ACT" moodCode="EVN">

 <!-- \*\* Allergy Concern Act (V3) \*\* -->

 <templateId root="2.16.840.1.113883.10.20.22.4.30" extension="2015-08-

 01"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.30"/>
 . . .

 <author typeCode="AUT">

 <templateId root="2.16.840.1.113883.10.20.22.4.119"/>

 <!-- Same as Concern effectiveTime/low -->

 <time value="199805011145-0800"/>

 <assignedAuthor>
 <id extension="555555555" root="2.16.840.1.113883.4.6"/>
 <code code="207QA0505X" displayName="Adult Medicine"

 codeSystem="2.16.840.1.113883.6.101"

 codeSystemName="Healthcare Provider Taxonomy (HIPAA)"/>
 </assignedAuthor>

 ...

 <!-- \*\* AND/OR\*\* -->

 <entryRelationship typeCode="SUBJ">
 <observation classCode="OBS" moodCode="EVN">
 <!-- \*\* Allergy observation (V2) \*\* -->
 <templateId root="2.16.840.1.113883.10.20.22.4.7"

 extension="2014-06-09"/>
 <templateId root="2.16.840.1.113883.10.20.22.4.7"/>
 <id root="4adc1020-7b14-11db-9fe1-0800200c9a66"/>
 <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
 <text>
 <reference value="#allergytype1"/>
 </text>
 . . .
 <author typeCode="AUT">
 <templateId root="2.16.840.1.113883.10.20.22.4.119"/>
 <time value="199805011145-0800"/>
 <assignedAuthor>
 <id extension="222223333"

 root="2.16.840.1.113883.4.6"/>
 <code code="207KA0200X" displayName="Allergy"

 codeSystem="2.16.840.1.113883.6.101"

 codeSystemName="Healthcare Provider Taxonomy

 (HIPAA)"/>

 </assignedAuthor>
 </author>

 ...

###

### Encounter

#### Rubric-15: An encounter Activity, when an encompassingEncounter also exists SHALL align

**Implementation Detail:** Where encompassingEncounter is present in the C-CDA R2.1 header and Encounter Activities are present in the body of the document in EVENT mood, then the encompassingEncounter date/time and ID and effectiveTimes **SHALL** equal at least one of the Encounter Activity encounter/IDs and its encounter/effectiveTime(s) in the body of the document.

##### Rubric Intent

The intent of this rubric is to ensure that a document with encompassingEncounter AND encounter activities should iterate the encompassing encounter information in an encounter activity and that the information must align.

##### Examples

C-CDA Examples Task Force Link:

ANY Encounter example to view encounter activity representation: <http://hl7-c-cda-examples.herokuapp.com/sections/Encounters>

Figure 27: encompassingEncounter and encounter Activity Alignment

...

<!-- \*\* EncompassingEncounter \*\* -->

. . .

<componentOf>
 <encompassingEncounter>
 <id extension="31528" root="1.2.840.114350.1.13.6289.1.7.8.698084.8"/>
 <effectiveTime>
 <low value="20160618115807-0500"/>
 <high value="20160625150000-0500"/>
 </effectiveTime>
 <dischargeDispositionCode code="1"

 codeSystem="2.16.840.1.113883.3.88.12.80.33"
 codeSystemName="National Uniform Billing Committee (NUBC)"
 displayName="Discharged to Home or Self Care (Routine

 Discharge)"/>

 <!-- \*\* Encounter Activity\*\* -->

 . . .
 <entry typeCode="DRIV">
 <encounter classCode="ENC" moodCode="EVN">
 <!-- \*\* Encounter Activity (V3) \*\* -->
 <templateId root="2.16.840.1.113883.10.20.22.4.49" extension="2015-08-

 01"/>
 <templateId root="2.16.840.1.113883.10.20.22.4.49"/>
 <id extension="31528" root="1.2.840.114350.1.13.6289.1.7.8.698084.8"/>
 <!-- CPT code should be used for ambulatory visits, but for a

 hospitalization, another codeSystem is more appropriate – translation

 to an HL7 Act Encounter code shown-->
 <code code="99238" displayName="Discharge day management services"

 codeSystem="2.16.840.1.113883.6.12">
 <originalText>
 <reference value="#Enc1\_Type"/>
 </originalText>
 <translation code="IMP" codeSystem="2.16.840.1.113883.5.4"

 displayName="Inpatient"

 codeSystemName="Act Encounter Code - Act Code"/>
 </code>
 <effectiveTime>
 <low value="20160618115807-0500"/>
 <high value="20160625150000-0500"/>
 </effectiveTime>
 <sdtc:dischargeDispositionCode code="1"

 codeSystem="2.16.840.1.113883.3.88.12.80.33"

 codeSystemName="National Uniform Billing Committee (NUBC)"

 displayName="Discharged to

 Home or Self Care (Routine Discharge)"/>

 . . .

 </encounter>

 </entry>

### Goals

#### Rubric-16: Goals and Health Concerns in a Care Plan Document Type SHALL be associated

**Implementation Detail:** If a Goal Observation (2.16.840.1.113883.10.20.22.4.121) is present, then it **SHALL** contain an Entry Reference (2.16.840.1.113883.10.20.22.4.122) which points to/contains the ID of a Health Concern Act (V2) (2.16.840.1.113883.10.20.22.4.132) OR a Problem Observation (V3) (2.16.840.1.113883.10.20.22.4.4) within the document, or be contained by, or contain, a Problem Observation (V3) (2.16.840.1.113883.10.20.22.4.4) or Health Concern Act (V2) (2.16.840.1.113883.10.20.22.4.132) using the REFR actRelationshipType.

##### Rubric Intent

The intent of this rubric is to require the associating of Goals to its related Health concern or Problem in a Care Plan Document.

##### Examples

Search C-CDA Examples Task Force search link: <http://cdasearch.hl7.org/>

Note: Example under development at time of publication.

Figure 28: Linking of Goals to Health Concerns

...

<entry>

 <observation classCode="OBS" moodCode="GOL">

 <templateId root="2.16.840.1.113883.10.20.22.4.121" extension="2015-

 08-01"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.121"/>

 <id root="1.3.6.1.4.1.22812.4.222.334.4.34" extension="1074100"/>

 ...

 <value xsi:type="CD" code="33841007" displayName="Decreased nausea

 and vomiting (disorder)" codeSystem="2.16.840.1.113883.6.96"

 codeSystemName="SNOMED CT"/>

 <entryRelationship typeCode="REFR">

 <!-- This is the "Entry Reference" Template that enables

 referencing another entry in the same

 CDA document instance. In a Care Plan it is particularly

 useful because it is necessary to

 repeatedly relate Health Concerns, Goals, Interventions and

 Outcomes.-->

 <act classCode="ACT" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.122" />

 <!-- This ID equals the Health Concern Act ID of the

 Nausea and Vomiting Problem. -->

 <id root="1.3.6.1.4.1.22812.4.222.334.4.32"

 extension="1148128"/>

 <!-- The code is nulled to "NP" Not Present" -->

 <code nullFlavor="NP" />

 <text>

 <reference value="#\_ConditionRef-1"/>

 </text>

 <statusCode code="completed" />

 </act>

 </entryRelationship>

 </observation>

 ...

<entry>

<!-- ELSEWHERE IN THE SAME DOCUMENT -->

<!-- The Health Concern act -->

 <act classCode="ACT" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.132" extension="2015-

 08-01"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.132"/>

 <!—The Goal/ID refers to the Health Concern Act Wrapper -->

 <id root="1.3.6.1.4.1.22812.4.222.334.4.32" extension="1148128"/>

 <code code="75310-3" displayName="Health concerns Document"

 codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC">

 ...

#### Rubric-17: Goals and Interventions in a Care Plan Document Type SHALL be related

**Implementation Detail:** If a Goal Observation (2.16.840.1.113883.10.20.22.4.121) is present, then it SHALL contain an Entry Reference (2.16.840.1.113883.10.20.22.4.122) which points to/contains the ID of an Intervention Act (V2) (2.16.840.1.113883.10.20.22.4.131) within the document OR be contained by, or contain, an Intervention Act (V2) (2.16.840.1.113883.10.20.22.4.131) using the REFR act relationship type.

##### Rubric Intent

The intent of this rubric is to require the associating of a Goal to its related Intervention(s) in a Care Plan Document.

##### Examples

Search C-CDA Examples Task Force search link: <http://cdasearch.hl7.org/>

Note: Example under development at time of publication.

Figure 29: Relating Goals and Interventions

|  |
| --- |
| ...<entry> <observation classCode="OBS" moodCode="GOL"> <templateId root="2.16.840.1.113883.10.20.22.4.121"  extension="2015-08-01"/> <templateId root="2.16.840.1.113883.10.20.22.4.121"/> <id root="1.3.6.1.4.1.22812.4.222.334.4.34" extension="1074100"/> ... <value xsi:type="CD" code="33841007" displayName="Decreased nausea  and vomiting (disorder)" codeSystem="2.16.840.1.113883.6.96"  codeSystemName="SNOMED CT"/> <entryRelationship typeCode="REFR"> <act classCode="ACT" moodCode="EVN"> <templateId root="2.16.840.1.113883.10.20.22.4.122" /> <!-- This ID equals the ID of the INTERVENTION: Referral to Cerezyme Infusion --> <id root="45a8d282-2409-450f-b26f-cc0eb6204296"/> <!-- The code is nulled to "NP" Not Present" --> <code nullFlavor="NP" /> ... <statusCode code="completed" /> </act> </entryRelationship> </observation> ...<entry> ...<!—ELSEWHERE IN THE SAME DOCUMENT --><act classCode="ACT" moodCode="EVN"> <templateId root="2.16.840.1.113883.10.20.22.4.131"  extension="2015-08-01"/> <templateId root="2.16.840.1.113883.10.20.22.4.131"/> <id root="45a8d282-2409-450f-b26f-cc0eb6204296"/> <code code="362956003" displayName="Procedure / intervention  (navigational concept)" codeSystem="2.16.840.1.113883.6.96"  codeSystemName="SNOMED CT"/> <statusCode code="completed"/> <entryRelationship typeCode="REFR"> <substanceAdministration classCode="SBADM" moodCode="EVN"> ... <consumable> <manufacturedProduct classCode="MANU"> <templateId root="2.16.840.1.113883.10.20.22.4.23"/> <templateId root="2.16.840.1.113883.10.20.22.4.23"  extension="2014-06-09"/> <manufacturedMaterial> <code code="1726267"  codeSystem="2.16.840.1.113883.6.88"  displayName="imiglucerase 400 UNT [Cerezyme]"> </code> </manufacturedMaterial> </manufacturedProduct> </consumable> ... </substanceAdministration> </entryRelationship></act> |

### Immunizations

#### Rubric-18: Immunization entries SHALL be in sections intended for Immunizations

**Implementation Detail:** When an Immunization Activity (V3) substanceAdministration: identifier urn:hl7ii:2.16.840.1.113883.10.20.22.4.52 is present in any C-CDA R2.1 document it **SHALL** be present in the Immunizations Section (entries required) (V3) section: identifier urn:hl7ii:2.16.840.1.113883.10.20.22.2.2.1

OR

Immunizations Section (entries optional) (V3) section: identifier urn:hl7ii:2.16.840.1.113883.10.20.22.2.2:2

OR

Interventions Section (V3) section: identifier urn:hl7ii:2.16.840.1.113883.10.20.21.2.3

In the Interventions Section (V3) section: identifier urn:hl7ii:2.16.840.1.113883.10.20.21.2.3 it **MAY** reside inside an Intervention Act (V2) act: identifier urn:hl7ii:2.16.840.1.113883.10.20.22.4.131

OR

in a Planned Intervention Act (V2) act: identifier urn:hl7ii:2.16.840.1.113883.10.20.22.4.146

when in Plan of Treatment Section (V2) section: identifier urn:hl7ii:2.16.840.1.113883.10.20.22.2.10:2014-06-09 (open)] it **SHALL** reside in a Planned Act (V2) act: identifier urn:hl7ii:2.16.840.1.113883.10.20.22.4.39: An Immunization Activity (V3) substanceAdministration: identifier urn:hl7ii:2.16.840.1.113883.10.20.22.4.52 **SHALL NOT** reside anywhere else in a C-CDA R2.1 Document

##### Rubric Intent

The intent of this rubric is to require in CCD and “Encounter Summaries” (Discharge Summary, Progress Note, H and P etc.) that administered immunizations **SHALL** be recorded in the Immunization Section. Future (orders or requests) for immunization (Planned) should be recorded in Plan section.

 In the Care Plan Document both performed and future (orders or request) immunizations **SHALL** be recorded in the Intervention section.

##### Examples

C-CDA Examples Task Force Link:

Immunizations in the Immunization Section – Influenza Vaccination: <http://cdasearch.hl7.org/examples/view/3c38951895eee8513fb9eb60c7b5dae8060da1d5>

Figure 30: Sections Appropriate for Immunizations

...

<section>
 <!-- \*\*\* Immunizations Section (entries required) (V3) \*\*\* -->

 <templateId root="2.16.840.1.113883.10.20.22.2.2.1" extension="2015-08-

 01"/>
 <templateId root="2.16.840.1.113883.10.20.22.2.2.1"/>
 <code code="11369-6" codeSystem="2.16.840.1.113883.6.1"

 codeSystemName="LOINC" displayName="History of immunizations"/>
 <title>IMMUNIZATIONS</title>

 . . .

</section>

<section>
 <!-- \*\*\* Immunizations Section (entries optional) (V3) \*\*\* -->

 <templateId root="2.16.840.1.113883.10.20.22.2.2.2" extension="2015-08-

 01"/>
 <templateId root="2.16.840.1.113883.10.20.22.2.2.2"/>
 <code code="11369-6" codeSystem="2.16.840.1.113883.6.1"

 codeSystemName="LOINC" displayName="History of immunizations"/>
 <title>IMMUNIZATIONS</title>

 . . . .

</section>

<section>
 <!-- \*\*\* Plan of Treatment Section (V2)\*\*\* -->

 <templateId root="2.16.840.1.113883.10.20.22.2.2.10" extension="2014-06-

 09"/>
 <templateId root="2.16.840.1.113883.10.20.22.2.2.10"/>
 <code code="18776-5" codeSystem="2.16.840.1.113883.6.1"

 codeSystemName="LOINC" displayName="Treatment plan"/>
 <title>TREATMENT PLAN</title>

 . . . .

</section>

<section>
 <!-- \*\*\* Interventions Section (V3)\*\*\* -->

 <templateId root="2.16.840.1.113883.10.20.21.2.3" extension="2015-08-

 01"/>
 <templateId root="2.16.840.1.113883.10.20.21.2.3"/>
 <code code="62387-6"codeSystem="2.16.840.1.113883.6.1"

 codeSystemName="LOINC” displayName="Interventions Narrative"/>
 <title>INTERVENTIONS</title>

 ...

</section>

### Medications

#### Rubric-19: Medication Activity statements SHALL contain a free text sig.

**Implementation Detail:** The MedicationActivity TemplateId/@root="2.16.840.1.113883.10.20.22.4.16" **SHALL** contain an Instruction TemplateId/@root=2.16.840.1.113883.10.20.22.4.20" that **SHALL** contain an /act/text/reference/@value pointing to text in the narrative block represents the free text sig.

##### Rubric Intent

The intent of this rubric is to encourage the use of free text sig to capture and communicate meaningful, clinically friendly, textual information about medication in ALL medication Activities. While free text sig is extremely valuable for clinical and validation purposes, the use of free text sig SHALL NOT replace full encoding.

##### Examples

C-CDA Examples Task Force Link:

Free Text Sig example: <http://cdasearch.hl7.org/examples/view/11bc1ece-94a9-44a4-b361-c7aad19af1f8>

Figure 31: Presence of Free Text Sig in Medication Activity

<tr ID="medications00001">

 <td>Acetaminophen: 500 mg oral tablets - 2 tablets</td>

 <td ID="medications00001value">Acetaminophen</td>

 <td>no information</td>

 <td>1000 mg</td>

 <td>06-22-2015 - 07-02-2015</td>

 <td>Active</td>

 <td>Take 2 tablets by mouth once daily</td>

 <!-- This represents the free text sig for this medication. The text

 Reference is pointed to from the corresponding entry. The sig for the

 text is housed only here in the section/text -->

 <td ID="medications00001\_0">Acetaminophen Extra Strength 500 mg oral 2

 tablets orally once a day for 2 weeks. </td>

 <td>Patricia Primary, MD</td>

</tr>

. . .

 <!-- Structured Medication Detail from Medication Activity Template →

 <entry>

 <substanceAdministration classCode="SBADM" moodCode="INT">

 <templateId root="2.16.840.1.113883.10.20.22.4.16"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.16" extension="2014-06-

 09"/>

 <id root="00000000-5CF3-EC63-0513-4A4838595787" extension="10160-0\_2"/>

 <text>

 <reference value="#medications00001"/>

 </text>

 <statusCode code="active"/>

 <effectiveTime xsi:type="IVL\_TS">

 <low value="20190622"/>

 <high value="20190705"/>

 </effectiveTime>

 <routeCode code="C38288" codeSystem="2.16.840.1.113883.3.26.1.1"

 displayName="Oral"/>

 <doseQuantity value="2"/>

 <consumable>

 <manufacturedProduct classCode="MANU">

 <templateId root="2.16.840.1.113883.10.20.22.4.23"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.23" extension="2014-

 06-09"/>

 <manufacturedMaterial>

 <code code="198440" codeSystem="2.16.840.1.113883.6.88"

 displayName="acetaminophen 500 mg oral tablet">

 <originalText>

 <reference value="#medications00001value"/>

 </originalText>

 <translation code="161" codeSystem="2.16.840.1.113883.6.88"

 displayName="Acetaminophen"/>

 <translation code="209459"

 codeSystem="2.16.840.1.113883.6.88"/>

 <translation code="50580044410"

 codeSystem="2.16.840.1.113883.6.69"/>

 </code>

 </manufacturedMaterial>

 </manufacturedProduct>

</consumable>

. . .

<!-- Instructions Template -->

 <entryRelationship typeCode="COMP">

 <substanceAdministration classCode="SBADM" moodCode="INT">
 <!-- The template is used to explicitly identify the free text Sig

 within each medication. The free text sig is captured in section

 text where the text/reference below points to-->
 <templateId root="2.16.840.1.113883.10.20.22.4.147"/>
 <code code="76662-6" displayName="Instructions [Text] Medication

 Narrative"

 codeSystem="2.16.840.1.113883.6.1"/>
 <text>
 <reference value="#medications00001\_0"/>
 </text>
 <consumable>
 <manufacturedProduct>
 <manufacturedLabeledDrug nullFlavor="NA"/>
 </manufacturedProduct>
 </consumable>
 </substanceAdministration>
 </entryRelationship>

#### Rubric-20: Free Text Sig - xsi:type="IVL\_TS" EffectiveTime SHALL agree with its free text

**Implementation Detail:** TheMedicationActivityTemplate/entry/substanceAdministration/templateId/@root="2.16.840.1.113883.10.20.22.4.16"/effectiveTime xsi:type="IVL\_TS" **SHALL NOT** conflict with Medication duration/administration times in the Instruction TemplateId/@root=2.16.840.1.113883.10.20.22.4.20" /act/text/reference/@value (e.g.="#xxx1) pointed to text in the narrative block identified by its narrative ID value (e.g.="xxx1")

##### Rubric Intent

The intent of this rubric is to ensure that the human readable medication duration does not conflict with the coded effective time. The <effectiveTime xsi:type="IVL\_TS"> in a Medication Activity represents the medication duration or a single administration timestamp. The free text sig medication duration / administration text referred to from a Medication activity should not conflict with Medication Activity effectiveTime xsi:type="IVL\_TS">.

##### Examples

C-CDA Examples Task Force Link:

Free Text Sig example: <http://cdasearch.hl7.org/examples/view/11bc1ece-94a9-44a4-b361-c7aad19af1f8>

Figure 32: Free text Sig Duration time and effectiveTime Agreement

|  |
| --- |
| <tr ID="medications00001"> <td>Acetaminophen: 500 mg oral tablets - 2 tablets</td> <td ID="medications00001value">Acetaminophen</td> <td>no information</td> <td>1000 mg</td> <td>06-22-2015 - 07-02-2015</td> <td>Active</td> <td>Take 2 tablets by mouth once daily</td> <!-- This represents the free text sig for this medication. The text  reference is pointed to from the corresponding entry. The sig for  the text is housed only here in the section/text --> <td ID="medications00001\_0">Acetaminophen Extra Strength 500 mg oral 2 tablets orally once a day for 2 weeks. </td> <td>Patricia Primary, MD</td></tr>. . .  <!-- Structured Medication Detail from Medication Activity Template → <entry> <substanceAdministration classCode="SBADM" moodCode="INT"> <templateId root="2.16.840.1.113883.10.20.22.4.16"/> <templateId root="2.16.840.1.113883.10.20.22.4.16"  extension="2014-06-09"/> <id root="00000000-5CF3-EC63-0513-4A4838595787"  extension="10160-0\_2-1\_1.3.6.1.4.1.22812.11.2016.163.1\_14168"/> <text> <reference value="#medications00001"/> </text> <statusCode code="active"/> <effectiveTime xsi:type="IVL\_TS"> <low value="20190622"/> <high value="20190705"/> </effectiveTime> <routeCode code="C38288" codeSystem="2.16.840.1.113883.3.26.1.1"  displayName="Oral"/> <doseQuantity value="2"/> <consumable> <manufacturedProduct classCode="MANU"> <templateId root="2.16.840.1.113883.10.20.22.4.23"/> <templateId  root="2.16.840.1.113883.10.20.22.4.23"extension="2014-06-  09"/> <manufacturedMaterial> <code code="198440" codeSystem="2.16.840.1.113883.6.88"  displayName="acetaminophen 500 mg oral tablet"> <originalText> <reference value="#medications00001value"/> </originalText> <translation code="161" codeSystem="2.16.840.1.113883.6.88"  displayName="Acetaminophen"/> <translation code="209459"  codeSystem="2.16.840.1.113883.6.88"/> <translation code="50580044410"  codeSystem="2.16.840.1.113883.6.69"/> </code> </manufacturedMaterial> </manufacturedProduct> </consumable>. . . <!-- Instructions Template --> <entryRelationship typeCode="COMP"> <substanceAdministration classCode="SBADM" moodCode="INT"> <!-- The template is used to explicitly identify the free text Sig  within each medication. The free text is captured in section text where the text/reference below points to--> <templateId root="2.16.840.1.113883.10.20.22.4.147"/> <code code="76662-6" displayName="Instructions [Text] Medication  Narrative"  codeSystem="2.16.840.1.113883.6.1"/> <text> <reference value="#medications00001\_0"/> </text> <consumable> <manufacturedProduct> <manufacturedLabeledDrug nullFlavor="NA"/> </manufacturedProduct> </consumable> </substanceAdministration> </entryRelationship> ... |

#### Rubric-21: Free Text Sig - xsi:type="PIVL\_TS" EffectiveTime SHALL agree with its free text

**Implementation Detail:** TheMedicationActivityTemplate/entry/substanceAdministration/templateId/@root="2.16.840.1.113883.10.20.22.4.16"/effectiveTime <effectiveTime xsi:type="PIVL\_TS" operator="A"> or <effectiveTime xsi:type="PIVL\_TS" institutionSpecified="true" operator="A"> **SHALL NOT** conflict with Medication discrete dosing frequencies in the Instruction TemplateId/@root=2.16.840.1.113883.10.20.22.4.20" /act/text/reference/@value (e.g.="#xxx2) pointed to text in the narrative block identified by its narrative ID value (e.g.="xxx2")

##### Rubric Intent

The intent of this rubric is to ensure that the human readable medication discrete dosing information does not conflict with the coded effective time. The <effectiveTime xsi:type="PIVL\_TS" operator="A"> or <effectiveTime xsi:type="PIVL\_TS" institutionSpecified="true" operator="A"> represents the medication activity discrete dosing frequencies. The free text sig medication dosing frequency text referred to from a Medication activity should not conflict with Medication Activity <effectiveTime xsi:type="PIVL\_TS"

##### Examples

C-CDA Examples Task Force Link:

Free Text Sig in “Med Every 4-6 Hours example: <http://cdasearch.hl7.org/examples/view/4f3c542cfceda966aee61e29528f895cb8024602>

Figure 33: Free text sig and coded discrete dosing agreement

|  |
| --- |
| <tr ID="Medication\_1"> <td> <content ID="MedicationName\_1" xmlns="urn:hl7-org:v3">Sudafed 30mg Oral  Tablet</content> </td> <td> <content>2 tablets</content> <content>Every 4-6 hours</content> </td> <td> <content>30 MG</content> </td> <td>Jan-18-2014 - </td> <td>Active</td></tr><tr ID="medicationsSig00001"></tr><tr> <td ID="medications00001\_0">Take Sudafed 30mg Oral Tablet2 tablets every 4-6 hours</td> <td>Patricia Primary, MD</td></tr>. . .  <!-- Structured Medication Detail from Medication Activity Template → <entry> <substanceAdministration classCode="SBADM" moodCode="INT"> <!-- This medication use case is a medication to be administered. If it  has been already administered use moodCode = "EVN". If an ordered drug  then use moodCode = "RQO" --> <!-- Dependencies exist between moodCode, statusCode and effectiveTime --> <templateId root="2.16.840.1.113883.10.20.22.4.16"/> <templateId root="2.16.840.1.113883.10.20.22.4.16" extension="2014-06-09"/> <id root="36edd5f0-0b15-49f6-a395-7752b4f18b77"/> <text> <!-- This reference refers to medication information in unstructured  portion of section--> <reference value="#Medication\_1"/> </text> <statusCode code="active"/> <!-- This first effectiveTime shows that medication was  prescribed on January 18, 2014 (not known to have stopped)--> <effectiveTime xsi:type="IVL\_TS"> <low value="20140118"/> <high nullFlavor="NI"/> </effectiveTime> <!-- This second effectiveTime represents every 4-6 hours from medication sig. --><!-- InstituionSpecified = "false" is implied in ths omission of this attribute and means that it must be administered exactly once per day--> <!-- InstituionSpecified = "true"which is not default would mean that receiving institution has flexibility in dosing schedule--><!-- Operator "A" means that this timing information is in addition to previous effectiveTime information provided--> <effectiveTime xsi:type="PIVL\_TS" operator="A"> <period xsi:type="IVL\_PQ"> <low value="4" unit="h"/> <high value="6" unit="h"/> </period> </effectiveTime>... <entryRelationship typeCode="COMP"> <substanceAdministration classCode="SBADM" moodCode="INT"> <!-- The template is used to explicitly identify the free text Sig within each medication. The free text sig is captured in section text where the text/reference below points to--> <templateId root="2.16.840.1.113883.10.20.22.4.147"/> <code code="76662-6" displayName="Instructions [Text] Medication Narrative"  codeSystem="2.16.840.1.113883.6.1"/> <text> <reference value="#medications00001\_0"/> </text> <consumable> <manufacturedProduct> <manufacturedLabeledDrug nullFlavor="NA"/> </manufacturedProduct> </consumable> </substanceAdministration> </entryRelationship> ... |

#### Rubric-22: Medication Statement SHALL contain author time

**Implementation Detail:** A Medication statement templateId/@root="2.16.840.1.113883.10.20.22.4.16", **SHALL** contain the Author Participation [templateId root=2.16.840.1.113883.10.20.22.4.119] which **SHALL** contain author/time which **SHALL NOT** be nulled.

##### Rubric Intent

The intent of this rubric is to provide information that can be interpreted as the most recent time a clinician addressed or noted the medication and to prevent sending of null values in the time attribute.

##### Examples

C-CDA Examples Task Force Link:

A medication example showing presence of a valid author time: <http://cdasearch.hl7.org/examples/view/4f3c542cfceda966aee61e29528f895cb8024602>

Figure 34: Medication Author Time

. . .

 </substanceAdministration>

 ...

 </consumable>

 <author>

 <!-- Time the author noted that patient is on medication -->

 <templateId root="2.16.840.1.113883.10.20.22.4.119"/>

 <time value="20140118"/>

 <assignedAuthor>

 <id extension="66666" root="2.16.840.1.113883.4.6"/>

 <code code="207RC0000X" codeSystem="2.16.840.1.113883.6.101"

 codeSystemName="NUCC" displayName="Cardiovascular Disease"/>

 <addr>

 <streetAddressLine>6666 StreetName St.</streetAddressLine>

 <city>Silver Spring</city>

 <state>MD</state>

 <postalCode>20901</postalCode>

 <country>US</country>

 </addr>

 <telecom value="tel:+1(301)666-6666" use="WP"/>

 <assignedPerson>

 <name>

 <given>Heartly</given>

 <family>Sixer</family>

 <suffix>MD</suffix>

 </name>

 </assignedPerson>

 </assignedAuthor>

 </author>

 </substanceAdministration>

#### Rubric-23: Medication Status Active and medication time stamps SHALL agree

**Implementation Detail:** Medication activity templateId root="2.16.840.1.113883.10.20.22.4.16", when substanceAdministration/statusCode/@code="active", then substanceAdministration/effectiveTime/high, **SHALL** be absent or nulled or greater than /ClinicalDocument/effectiveTime/@value.

##### Rubric Intent

The intent of this rubric is to ensure a Medication that has an active status has a correct high time indicating it is current and therefore correlates with ''active”.

##### Examples

C-CDA Examples Task Force Link:

An Active Medication: <http://cdasearch.hl7.org/examples/view/26db7c4228f4f13bcaefbe776df4e3eac58e31b7>

Figure 35: Medication Active and time stamps

<ClinicalDocument>

<realmCode code="US" />

<typeId extension="POCD\_HD000040" root="2.16.840.1.113883.1.3" />

...

 <effectiveTime value="20200118114559-0500"/>

. . .

<substanceAdministration classCode="SBADM" moodCode="INT">

 <templateId root="2.16.840.1.113883.10.20.22.4.16"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.16"extension="2014-06-09"/>

 <id root="36edd5f0-0b15-49f6-a395-7752b4f18b77"/>

 ...

 <statusCode code="active"/>

 <!-- Example effectiveTime shows that medication was prescribed on

 January 18, 2020 (not known to have stopped)-->

 <effectiveTime xsi:type="IVL\_TS">

 <low value="20200118"/>

 <high nullFlavor="NI"/>

 </effectiveTime>

  **<!-- OR -->**

 <!-- Example effectiveTime shows that medication was prescribed on

 January 18, 2020 through February 18, 2020(Later than the document

 effectiveTime)-->

 <effectiveTime xsi:type="IVL\_TS">

 <low value="20200118"/>

 <high value="20200218"/>

 </effectiveTime>

 . . .

</ClinicalDocument>

###

### Problems

#### Rubric-24 : Problem Concern status and EffectiveTime SHALL agree

**Implementation Detail:** If Problem Concern Status = "active", then Problem Concern/effectiveTime="high" **SHALL NOT** be present.

If Problem Concern Status = "completed" or "aborted" or "suspended" then Problem Concern/effectiveTime="high" **SHALL** be present.

##### Rubric Intent

The intent of this rubric is to assert that the statusCode of the Problem Concern Act is the definitive indication of the concern’s status. The Problem Concern effectiveTime must correlate with the Problem Concern Status.

##### Examples

C-CDA Examples Task Force Link – Active Problem: <http://cdasearch.hl7.org/examples/view/b6f23e38249108eb5bc47905c949e9bb59fc33b4>

Figure 36: Problem Concern Status and Effective Time

<act classCode="ACT" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.3" />

 <templateId root="2.16.840.1.113883.10.20.22.4.3" extension="2015-08-

 01"/>

 <id root="102ca2e9-884c-4523-a2b4-1b6c3469c397"/>

 <code code="CONC" codeSystem="2.16.840.1.113883.5.6"/>

 <!-- Since this is an active problem, the concern status is active, and

 there is no effectiveTime.high. -->

 <statusCode code="active"/>

 <effectiveTime>

 <low value="20140302124536-0500"/>

 </effectiveTime>

 <entryRelationship typeCode="SUBJ">

 <observation classCode="OBS" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.4" />

 <templateId root="2.16.840.1.113883.10.20.22.4.4"

 extension="2015-08-01"/>

 <id extension="10241104348"

 root="1.3.6.1.4.1.22812.4.111.0.4.1.2.1"/>

 <code code="55607006" displayName="Problem"

 codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">

 ...

 </code>

 ...

 <statusCode code="completed"/>

 <effectiveTime>

 <low value="20140227"/>

 </effectiveTime>

 <value xsi:type="CD" code="385093006"

 codeSystem="2.16.840.1.113883.6.96"

 codeSystemName="SNOMED CT" displayName="Community Acquired

 Pneumonia"/>

 ...

 </observation>

 </entryRelationship>

</act>

...

#### Rubric-25: Problem Code and Value SHALL be different

**Implementation Detail:** In the Problem Observation templateId root="2.16.840.1.113883.10.20.22.4.4", observation/code@code and observation/value@value **SHALL NOT** be same code and code system.

##### Rubric Intent

The intent of this rubric is to prevent redundancy in observation/code and observation/value.

##### Examples

C-CDA Examples Task Force Link – Active Problem: <http://cdasearch.hl7.org/examples/view/b6f23e38249108eb5bc47905c949e9bb59fc33b4>

Figure 37: Problem Code <> Problem Value

<observation classCode="OBS" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.4" />

 <templateId root="2.16.840.1.113883.10.20.22.4.4" extension="2015-08-

 01"/>

 <id extension="10241104348" root="1.3.6.1.4.1.22812.4.111.0.4.1.2.1"/>

 <code code="55607006" displayName="Problem"

 codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">

 ...

 </code>

 ...

 <statusCode code="completed"/>

 <effectiveTime>

 <low value="20140227"/>

 </effectiveTime>

 <value xsi:type="CD" code="385093006" codeSystem="2.16.840.1.113883.6.96"

 codeSystemName="SNOMED CT" displayName="Community Acquired Pneumonia"/>

 ...

</observation>

Figure 38: ERRONEOUS EXAMPLE: Problem Code = Problem Value

|  |
| --- |
| <observation classCode="OBS" moodCode="EVN"> <templateId root="2.16.840.1.113883.10.20.22.4.4" /> <templateId root="2.16.840.1.113883.10.20.22.4.4" extension="2015-08- 01"/> <id extension="10241104348" root="1.3.6.1.4.1.22812.4.111.0.4.1.2.1"/> <code code="385093006" displayName="Community Acquired Pneumonia" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"> ... </code> ... <statusCode code="completed"/> <effectiveTime> <low value="20140227"/> </effectiveTime> <value xsi:type="CD" code="385093006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT" displayName="Community Acquired  Pneumonia"/> ...</observation> |

#### Rubric-26: The Problem Concern Act and/or the Problem Observation SHALL contain an Author Time

**Implementation Detail:** In a Problem statement, either the Problem Concern Act [templateId root="2.16.840.1.113883.10.20.22.4.3"] or the Problem Observation [templateId root="2.16.840.1.113883.10.20.22.4.4"] **SHALL** contain the Author Participation [templateId root= 2.16.840.1.113883.10.20.22.4.119] which **SHALL** contain author/time which **SHALL NOT** be nulled. There **MAY** be an author time on both.

##### Rubric Intent

The intent of this rubric is to provide information that can be interpreted as the most recent time a clinician addressed or noted the problem and to prevent the sending of null values in the time attribute.

##### Examples

C-CDA Examples Task Force Link – Active Problem: <http://cdasearch.hl7.org/examples/view/b6f23e38249108eb5bc47905c949e9bb59fc33b4>

Figure 39: Problem Author Time present and not null

<act classCode="ACT" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.3" />

 <templateId root="2.16.840.1.113883.10.20.22.4.3" extension="2015-08-

 01"/>

 <id root="102ca2e9-884c-4523-a2b4-1b6c3469c397"/>

 <code code="CONC" codeSystem="2.16.840.1.113883.5.6"/>

 <statusCode code="active"/>

 <effectiveTime>

 <low value="20140302124536-0500"/>

 </effectiveTime>

 <entryRelationship typeCode="SUBJ">

 <observation classCode="OBS" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.4" />

 <templateId root="2.16.840.1.113883.10.20.22.4.4"

 extension="2015-08-01"/>

 <id extension="10241104348"

 root="1.3.6.1.4.1.22812.4.111.0.4.1.2.1"/>

 <code code="55607006" displayName="Problem"

 codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">

 ...

 </code>

 ...

 <statusCode code="completed"/>

 <effectiveTime>

 <low value="20140227"/>

 </effectiveTime>

 <value xsi:type="CD" code="385093006"

 codeSystem="2.16.840.1.113883.6.96"

 codeSystemName="SNOMED CT" displayName="Community Acquired

 Pneumonia"/>

 <author>

 <templateId root="2.16.840.1.113883.10.20.22.4.119"/>

 <time value="20140302124536"/>

 <assignedAuthor>

 ...

 </assignedAuthor>

 </author>

 </observation>

 </entryRelationship>

</act>

 ...

### Procedures

#### Rubric-27: Procedure Coding SHALL contain codes from the code systems referenced in the C-CDA Procedure templates

**Implementation Detail:** In Procedure Activity Procedure V2 (2.16.840.1.113883.10.20.22.4.14), Procedure Activity Act (V2) (2.16.840.1.113883.10.20.22.4.12) and Procedure Activity Observation (V2) (2.16.840.1.113883.10.20.22.4.13):

/ClinicalDocument/component/structuredBody/component/section/entry/procedure/code @ code **SHALL** be coded with CPT, CDT-2, ICD-9, ICD-10, SNOMED, HCPCS or LOINC.

##### Rubric Intent

The intent of the rubric is to encourage encoding of procedures with the recommended code systems from the base standard. In the base standard the bound code systems are a **SHOULD**.

##### Examples

C-CDA Examples Task Force: <http://cdasearch.hl7.org/examples/view/b1784b68-4372-4511-adea-eb6f8790df9e>

Figure 40: Procedure code shall be CPT, CDT-2, ICD-9, ICD-10, SNOMED, HCPCS or LOINC

<procedure moodCode="EVN" classCode="PROC">

 <templateId root="2.16.840.1.113883.10.20.22.4.14" />

 <templateId root="2.16.840.1.113883.10.20.22.4.14" extension="2014-06-

 09"/>

 <id root="56a76ee2-c5a9-4c69-be93-0461bd98691c"/>

 <code code="25732003" displayName="Fiberoptic colonoscopy with biopsy"

 codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED-CT">

 ...

 </code>

 ...

 <statusCode code="completed"/>

 <effectiveTime xsi:type="IVL\_TS">

 <low value="20190503092205-0700"/>

 <high value="20190503111514-0700"/>

 </effectiveTime>

</procedure>

###

### Results

#### Rubric-28: Lab Results SHALL contain recommended UCUM codes

**Implementation Detail:** In Result observation (V3) (2.16.840.1.113883.10.20.22.4.2) when /observation/value/xsi:type="PQ" is present, then the unit of measure **SHALL** equal one of the UCUM codes recommended by LOINC in LOINC axis "“exUCUMunits."

##### Rubric Intent

The intent of the rubric is to encourage that when Laboratory Results Values that have a unit (physical quantity) must have those units are one of the UCUM units recommended by LOINC for use with the LOINC code associated with the result. Regenstrief[[1]](#footnote-1) provides preferred UCUM units for lab LOINC codes/concepts which tools could implement to validate appropriate UCUM units per code.

##### Examples

C-CDA Examples Task Force Link \_ results of CO2 Test: <http://cdasearch.hl7.org/examples/view/72810ec4a92e1b63fc21c97b7e6e7c9aeb5a839a>

Figure 41: Result unit of measure aligns with LOINC recommendation

|  |
| --- |
| <observation classCode="OBS" moodCode="EVN"> <templateId root="2.16.840.1.113883.10.20.22.4.2"/> <templateId root="2.16.840.1.113883.10.20.22.4.2" extension="2015-08- 01"/> <id root="503B5578-E8FF-11E4-B48A-460231621F93"/> <code code="2028-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Carbon dioxide"> ... </code> ... <statusCode code="completed"/> <effectiveTime value="201208151005-0800"/> <value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="PQ" unit="mmol/L" value="27"/> <interpretationCode code="N" codeSystem="2.16.840.1.113883.5.83"/> ...</observation> |

#### Rubric-29: Results and Observation Range PQ Data Types SHALL align

**Implementation Detail:** In Result observation (V3) (2.16.840.1.113883.10.20.22.4.2) if observation/value/@ xsi-type="PQ" then /observation/referenceRange/observationRange/value/@ xsi-type **SHALL** equal “IVL\_PQ".

##### Rubric Intent

The intent of the rubric is the encourage the use of the “IVL\_PQ” data type for an observation range when a laboratory result observation value is recorded as a PQ datatype and a reference range for that lab result is present.

##### Examples

C-CDA Examples Task Force Link – Results of CO2 Test: <http://cdasearch.hl7.org/examples/view/72810ec4a92e1b63fc21c97b7e6e7c9aeb5a839a>

Figure 42: Reference range for a Result physical quantity is of type IVL\_PQ

<observation classCode="OBS" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.2"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.2" extension="2015-08-

 01"/>

 <id root="503B5578-E8FF-11E4-B48A-460231621F93"/>

 <code code="2028-9" codeSystem="2.16.840.1.113883.6.1"

 codeSystemName="LOINC" displayName="Carbon dioxide">

 ...

 </code>

 ...

 <statusCode code="completed"/>

 <effectiveTime value="201208151005-0800"/>

 <value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

 xsi:type="PQ" unit="mmol/L" value="27"/>

 <interpretationCode code="N" codeSystem="2.16.840.1.113883.5.83"/>

 <referenceRange>

 <observationRange>

 <text>23-29 mmol/L</text>

 <value xsi:type="IVL\_PQ">

 <low value="23" unit="mmol/L" />

 <high value="29" unit="mmol/L" />

 </value>

 <interpretationCode code="N"

 codeSystem="2.16.840.1.113883.5.83"/>

 </observationRange>

 </referenceRange>

</observation>

###

### Social History

#### Rubric-30: Smoking Status SHALL be present in the CCD and Referral document types

**Implementation Detail:** The CCD document type (2.16.840.1.113883.10.20.22.1.2) and the Referral Note document type (2.16.840.1.113883.10.20.22.1.14) **SHALL** contain Smoking Status - Meaningful Use (V2) (2.16.840.1.113883.10.20.22.4.78).

##### Rubric Intent

The intent of this rubric is to require smoking status in CCD and Referral Notes.

##### Examples

C-CDA Examples Task Force Link – Current Smoking Status: <http://cdasearch.hl7.org/examples/view/197a4b45cbb2162c21b557c4f6ad3cee7e9368ec>

Figure 43: CCD and Referral Note require Smoking Status

<observation classCode="OBS" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.78"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.78" extension="2014-06-

 09"/>

 <id extension="123456789" root="2.16.840.1.113883.19" />

 <code code="72166-2" codeSystem="2.16.840.1.113883.6.1"
 displayName="Tobacco smoking status NHIS"/>

 ...

 <statusCode code="completed"/>

 <effectiveTime value="201406061032-0500"/>

 <value xsi:type="CD" codeSystem="2.16.840.1.113883.6.96"

 codeSystemName="SNOMED CT"
 code="449868002" displayName="Current every day smoker"/>

 ...

</observation>

#### Rubric-31: Birth Sex SHALL be present in all document types

**Implementation Detail:** All C-CDA documents **SHALL** have a Birth Sex Observation (2.16.840.1.113883.10.20.22.4.200). Valid observation values **SHALL** be from ONC Birth Sex Value set <https://vsac.nlm.nih.gov/valueset/2.16.840.1.113762.1.4.1/expansion/Latest> or contain the HL7 null value UNK.

All C-CDA documents (except the Care Plan Document type) **SHALL** contain this observation on the Social History Section (V3) (2.16.840.1.113883.10.20.22.2.17).

##### Rubric Intent

The intent of this rubric is to require the birth sex recording in C-CDA documents in addition to administrative gender that is captured in the header. Please see HL7 CDA® R2 IG: C-CDA Templates for Clinical Notes R1 Companion Guide, Release 1 March 2017, section 4.4.4 'Birth Sex and Administrative Gender', and section A.1 'New C-CDA Templates: Birth Sex Observation'.

##### Examples

C-CDA Examples Task Force Link – Birth Sex: <http://cdasearch.hl7.org/examples/view/3b30a01004eccd6664935ff886a8c88830389324>

Figure 44: Inclusion of birth sex observation

|  |
| --- |
| <observation classCode="OBS" moodCode="EVN"> <templateId root="2.16.840.1.113883.10.20.22.4.200" extension="2016-06- 01"/> <code code="76689-9" codeSystem="2.16.840.1.113883.6.1" displayName="Sex Assigned At Birth"/> ... <statusCode code="completed"/> <value xsi:type="CD" codeSystem="2.16.840.1.113883.5.1"  codeSystemName="AdministrativeGender" code="F" displayName="Female"> ... </value> <author> ... </author></observation> |

### Vital Signs

#### Rubric-32: Vital Signs SHALL be encoded with LOINC

**Implementation Detail:** In Vital Sign Observation (V2) (2.16.840.1.113883.10.20.22.4.27) if the observation code does not come from the Vital Sign Result Type value set (2.16.840.1.113883.3.88.12.80.62), then it **SHALL** still come from the LOINC code System.

##### Rubric Intent

The intent of this rubric is to encourage use of LOINC even if the codes in the Vital Sign Result Type value set do not contain the desired code for a particular vital sign.

##### Examples

C-CDA Examples Task Force Link – Panel of Vital signs in Metric Units: <http://cdasearch.hl7.org/examples/view/713669406c546a843ed2b78cfd99080f87834191>

Figure 45: Vital sign observation code comes from LOINC

<observation classCode="OBS" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.27"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.27" extension="2014-06-

 09"/>

 <id root="6d3fa9f8-6049-41bd-b0c3-b0196bb6bd37"/>

 <code code="8302-2" codeSystem="2.16.840.1.113883.6.1"

 codeSystemName="LOINC"

 displayName="HEIGHT"/>

 ...

 <statusCode code="completed"/>

 <effectiveTime value="20140520193605-0500"/>

 <value xsi:type="PQ" value="170.2" unit="cm"/>

</observation>

#### Rubric-33: Vital Signs SHALL use LOINC recommended UCUM codes

**Implementation Detail:** In Vital Sign Observation (V2) (2.16.840.1.113883.10.20.22.4.27) when /observation/value/xsi:type="PQ" is present, then unit of measure **SHALL** equal one of the UCUM codes recommended by LOINC in LOINC axis "exUCUMunits."

##### Rubric Intent

Vital sign observation values that have a unit (physical quantity) must have one of the UCUM units recommended by LOINC for use with the LOINC code associated with the result. Regenstrief provides preferred UCUM units for lab LOINC codes/concepts which tools could implement to validate appropriate UCUM units per code.

##### Examples

Figure 46: Recommended UCUM in LOINC

Figure 47: Vital sign unit of measure aligns with LOINC recommendation

<observation classCode="OBS" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.27"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.27" extension="2014-06-

 09"/>

 <id root="2594e631-2189-4e72-9dd1-d6769ee2a7be"/>

 <code code="3141-9" codeSystem="2.16.840.1.113883.6.1"

 codeSystemName="LOINC"

 displayName="WEIGHT"/>

 ...

 <statusCode code="completed"/>

 <effectiveTime value="20140520193605-0500"/>

 <value xsi:type="PQ" value="108.863" unit="kg"/>

</observation>

#### Rubric-34: A BMI SHALL represent the value calculated from height and weight

**Implementation Detail:** If Vital sign observations (2.16.840.1.113883.10.20.22.4.27) are present where one contains 8302-2 LOINC Body Height and one contains 29463-7 LOINC Body Weight, and one contains 39156-5 Body mass index (BMI), then BMI **SHALL** represent the calculated value in kilograms per meters squared (kg/m2).

##### Rubric Intent

The intent of the rubric is to require that a Body Mass Index (BMI) that is sent in a C-CDA is the correct calculated value. EHRs calculate BMI based on a patient’s height and weight. The formula is BMI = kg/m2 where kg is a person’s weight in kilograms and m2 is their height in meters squared.

##### Examples

C-CDA Examples Task Force Link – Panel of Vital signs in Metric Units: <http://cdasearch.hl7.org/examples/view/713669406c546a843ed2b78cfd99080f87834191>

Figure 48: BMI expressed in kg/m2 regardless of units in height and weight observations

<component>

 <observation classCode="OBS" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.27"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.27" extension="2014-

 06-09"/>

 <id root="6d3fa9f8-6049-41bd-b0c3-b0196bb6bd37"/>

 <code code="8302-2" codeSystem="2.16.840.1.113883.6.1"

 codeSystemName="LOINC"

 displayName="HEIGHT"/>

 ...

 <statusCode code="completed"/>

 <effectiveTime value="20140520193605-0500"/>

 <value xsi:type="PQ" value="170.2" unit="cm"/>

 </observation>

</component>

<component>

 <observation classCode="OBS" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.27"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.27" extension="2014-

 06-09"/>

 <id root="2594e631-2189-4e72-9dd1-d6769ee2a7be"/>

 <code code="3141-9" codeSystem="2.16.840.1.113883.6.1"

 codeSystemName="LOINC"

 displayName="WEIGHT"/>

 ...

 <statusCode code="completed"/>

 <effectiveTime value="20140520193605-0500"/>

 <value xsi:type="PQ" value="108.863" unit="kg"/>

 </observation>

</component>

<component>

 <observation classCode="OBS" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.27"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.27" extension="2014-

 06-09"/>

 <id root="5858e765-2ffe-413f-9197-260f2c6e7aa8"/>

 <code code="39156-5" codeSystem="2.16.840.1.113883.6.1"

 codeSystemName="LOINC"

 displayName="BODY MASS INDEX"/>

 ...

 <statusCode code="completed"/>

 <effectiveTime value="20140520193605-0500"/>

 <value xsi:type="PQ" value="37.58" unit="kg/m2"/>

 </observation>

</component>

## Informational

### Allergies

#### Rubric-35: Allergy entries and their entryTextReferences text SHALL align

**Implementation Detail:** In the Allergy Observation template [templateId root="2.16.840.1.113883.10.20.22.4.7"] the entryRelationship/observation/participant/participantRole/playingEntity/code/@code where the link between the narrative (section.text) and coded clinical entry data exists, the narrative must conceptually align with the meaning of the code it links with.

##### Rubric Intent

The intent of this rubric is to compare the accuracy of the narrative that is read by humans and the contained computer processable encoded data that the human may not see. In addition to the presence of textReference, this rubric assesses accuracy between coded entries and human narrative.

##### Examples

C-CDA Examples Task Force Link:

Allergy to Food - Egg: Allergy: <http://cdasearch.hl7.org/examples/view/9731b470c5291fabfafb97268bdc0820f0058bc9>

Figure 49: Allergy entryTextReferance alignment with allergen code

|  |
| --- |
| ...<section> <templateId root="2.16.840.1.113883.10.20.22.2.6.1"/> <templateId root="2.16.840.1.113883.10.20.22.2.6.1"  extension="2015-08-01"/> <!-- Allergies (entries required) section template --> <code code="48765-2" codeSystem="2.16.840.1.113883.6.1"/> <title>Allergies, Adverse Reactions and Alerts</title> <text> ... <tr> <th>Type:</th> <td ID="AllergyType\_1.1D">Drug intolerance (disorder)</td> </tr> <tr> <th>Agent:</th> <td ID="AllergyAgent\_1.1D">Codeine</td> ... </text> ... <participant typeCode="CSM"> <participantRole classCode="MANU"> <playingEntity classCode="MMAT"> <code code="2670" displayName="Codeine" codeSystem="2.16.840.1.113883.6.88"  codeSystemName="RxNorm"> <originalText> <reference value="#AllergyAgent\_1.1D"/> </originalText> </code> </playingEntity> </participantRole> </participant> ... |

### Goals

#### Rubric-36 Goals SHALL relate to Health Concerns in a NON-Care Plan Document Type

**Implementation Detail:** If a Goal Observation (2.16.840.1.113883.10.20.22.4.121) is present, then it **SHALL** contain an Entry Reference (2.16.840.1.113883.10.20.22.4.122) which points to/contains the ID of a Health Concern Act (V2) (2.16.840.1.113883.10.20.22.4.132) or a Problem Observation (V3) (2.16.840.1.113883.10.20.22.4.4) within the document, or be contained by, or contain a Problem Observation (V3) (2.16.840.1.113883.10.20.22.4.4) or Health Concern Act (V2) (2.16.840.1.113883.10.20.22.4.132) using the REFR actRelationshipType.

##### Rubric Intent

The intent of this rubric is to encourage, but not mandate, the associating of Goals to its related Health Concerns or Problems in C-CDA documents that are not the Care Plan document type. In a Care Plan Document type this association is a required rubric.

##### Examples

C-CDA Examples Task Force Link:

Search C-CDA Examples Task Force search link: <http://cdasearch.hl7.org/>

Note: Example under development at time of publication.

Figure 50: Linking of Goals to Health Concerns

...

<entry>

 <observation classCode="OBS" moodCode="GOL">

 <templateId root="2.16.840.1.113883.10.20.22.4.121" extension="2015-

 08-01"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.121"/>

 <id root="1.3.6.1.4.1.22812.4.222.334.4.34" extension="1074100"/>

 ...

 <value xsi:type="CD" code="33841007" displayName="Decreased nausea

 and vomiting (disorder)" codeSystem="2.16.840.1.113883.6.96"

 codeSystemName="SNOMED CT"/>

 <entryRelationship typeCode="REFR">

 <!-- This is the "Entry Reference" Template that enables referencing

 another entry in the same CDA document instance. In a Care Plan it

 is particularly useful because it is necessary to repeatedly

 relate Health Concerns, Goals, Interventions and Outcomes.-->

 <act classCode="ACT" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.122" />

 <!-- This ID equals the Health Concern Act ID of the Nausea

 and Vomiting Problem. -->

 <id root="1.3.6.1.4.1.22812.4.222.334.4.32"

 extension="1148128"/>

 <!-- The code is nulled to "NP" Not Present" -->

 <code nullFlavor="NP" />

 <text>

 <reference value="#\_ConditionRef-1"/>

 </text>

 <statusCode code="completed" />

 </act>

 </entryRelationship>

 </observation>

 ...

<entry>

<!-- ELSEWHERE IN THE SAME DOCUMENT -->

<!-- The Health Concern act -->

 <act classCode="ACT" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.132" extension="2015-

 08-01"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.132"/>

 <!—The Goal/ID refers to the Health Concern Act Wrapper -->

 <id root="1.3.6.1.4.1.22812.4.222.334.4.32" extension="1148128"/>

 <code code="75310-3" displayName="Health concerns Document"

 codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC">

 ...

#### Rubric-37: Goals SHALL relate to Interventions in a NON-Care Plan Document Type

**Implementation Detail:** If a Goal Observation (2.16.840.1.113883.10.20.22.4.121) is present, then it SHOULD contain an Entry Reference (2.16.840.1.113883.10.20.22.4.122) which points to or contains the ID of an Intervention Act (V2) (2.16.840.1.113883.10.20.22.4.131):2015-08-01 within the document OR be contained by, or contain, an Intervention Act (V2) (2.16.840.1.113883.10.20.22.4.131) using the REFR act relationship type.

##### Rubric Intent

The intent of this rubric is to encourage, but not mandate, the associating of a Goal to its related Intervention(s) in C-CDA documents that are not the Care Plan document type. In a Care Plan Document type this association is a required rubric.

##### Examples

C-CDA Examples Task Force Link:

Search C-CDA Examples Task Force search link: <http://cdasearch.hl7.org/>

Note: Example under development at time of publication.

Figure 51: Relating Goals and Interventions

|  |
| --- |
| ...<entry> <observation classCode="OBS" moodCode="GOL"> <templateId root="2.16.840.1.113883.10.20.22.4.121"  extension="2015-08-01"/> <templateId root="2.16.840.1.113883.10.20.22.4.121"/> <id root="1.3.6.1.4.1.22812.4.222.334.4.34" extension="1074100"/> ... <value xsi:type="CD" code="33841007" displayName="Decreased nausea  and vomiting (disorder)" codeSystem="2.16.840.1.113883.6.96"  codeSystemName="SNOMED CT"/> <entryRelationship typeCode="REFR"> <act classCode="ACT" moodCode="EVN"> <templateId root="2.16.840.1.113883.10.20.22.4.122" /> <!-- This ID equals the ID of the INTERVENTION: Referral to Cerezyme Infusion --> <id root="45a8d282-2409-450f-b26f-cc0eb6204296"/> <!-- The code is nulled to "NP" Not Present" --> <code nullFlavor="NP" /> ... <statusCode code="completed" /> </act> </entryRelationship> </observation> ...<entry> ...<!—ELSEWHERE IN THE SAME DOCUMENT --><act classCode="ACT" moodCode="EVN"> <templateId root="2.16.840.1.113883.10.20.22.4.131"  extension="2015-08-01"/> <templateId root="2.16.840.1.113883.10.20.22.4.131"/> <id root="45a8d282-2409-450f-b26f-cc0eb6204296"/> <code code="362956003" displayName="Procedure / intervention  (navigational concept)" codeSystem="2.16.840.1.113883.6.96"  codeSystemName="SNOMED CT"/> <statusCode code="completed"/> <entryRelationship typeCode="REFR"> <substanceAdministration classCode="SBADM" moodCode="EVN"> ... <consumable> <manufacturedProduct classCode="MANU"> <templateId root="2.16.840.1.113883.10.20.22.4.23"/> <templateId root="2.16.840.1.113883.10.20.22.4.23"  extension="2014-06-09"/> <manufacturedMaterial> <code code="1726267"  codeSystem="2.16.840.1.113883.6.88"  displayName="imiglucerase 400 UNT [Cerezyme]"> </code> </manufacturedMaterial> </manufacturedProduct> </consumable> ... </substanceAdministration> </entryRelationship></act> |

### Medications

#### Rubric-38: Medication RxNorm Term type and route of admin SHALL align

**Implementation Detail:** In Medication Information (V2) (2.16.840.1.113883.10.20.22.4.23) the RxNorm code with a pre-coordinated dose from present within the term type SCDF, SCDG, SCD, GPCK, SBDF, SBDG, SBD, BPCK @ the supply/product/manufacturedProduct/manufacturedMaterial/code/@code  **SHALL NOT** conflict with the substanceAdministration/routeCode/@code present in the Medication activity (2.16.840.1.113883.10.20.22.4.16) it is contained in.

##### Rubric Intent

The intent of this rubric is to encourage alignment of the medication route information with the route stated in the RxNorm medication code.

##### Examples

C-CDA Examples Task Force Link:

A medication example showing Medication and route alignment: <http://cdasearch.hl7.org/examples/view/4f3c542cfceda966aee61e29528f895cb8024602>

Figure 52: Medication RxNorm Term type and route of admin alignment

. . .

<substanceAdministration classCode="SBADM" moodCode="INT">

 <templateId root="2.16.840.1.113883.10.20.22.4.16"/>

 ...

 <routeCode code="C38288" codeSystem="2.16.840.1.113883.3.26.1.1"

 codeSystemName="NCI Thesaurus" displayName="**ORAL** ROUTE OF

 ADMINISTRATION"/>

 ...

 <manufacturedMaterial>

 <code code="197380" displayName="Atenolol 25 MG **Oral** Tablet"

 codeSystem="2.16.840.1.113883.6.88" codeSystemName="RxNorm"/>

 </manufacturedMaterial>

 ...

Figure 53: Medication RxNorm Term type and route of admin misalignment

...

<substanceAdministration classCode="SBADM" moodCode="INT">

 <templateId root="2.16.840.1.113883.10.20.22.4.16"/>

 ...

 <routeCode code="C38276" codeSystem="2.16.840.1.113883.3.26.1.1"

 codeSystemName="NCI Thesaurus" displayName="**INTRAVENOUS** ROUTE OF

 ADMINISTRATION"/>

 ...

 <manufacturedMaterial>

 <code code="197380" displayName="Atenolol 25 MG **Oral** Tablet"

 codeSystem="2.16.840.1.113883.6.88" codeSystemName="RxNorm"/>

 </manufacturedMaterial>

 ...

###

### Results

#### Rubric-39 Lab Results SHALL be encoded with the top 2000 LOINC

**Implementation Detail:** In Result observation (V3) (2.16.840.1.113883.10.20.22.4.2) when /observation/code represents a laboratory result, the LOINC code **SHALL** be drawn from the LOINC top 2000 list (Obtain here <https://loinc.org/usage/obs/>) unless the clinically appropriate LOINC code for a lab is not present.

##### Rubric Intent

The intent of the rubric is to encourage Laboratory Result LOINC codes be drawn from the top 2000 LOINC codes. The top 2000 LOINC codes are maintained by LOINC/Regenstrief and represent a frequency of use list only. However, it is clinically acceptable to send LOINC codes outside the top 2000 when necessary.

##### Examples

C-CDA Examples Task Force Link – Results of CO2 Test: <http://cdasearch.hl7.org/examples/view/72810ec4a92e1b63fc21c97b7e6e7c9aeb5a839a>

Figure 54: Draw LOINC codes from LOINC 2000 list where possible

<observation classCode="OBS" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.2"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.2" extension="2015-08-

 01"/>

 <id root="503B5578-E8FF-11E4-B48A-460231621F93"/>

 <code code="2028-9" codeSystem="2.16.840.1.113883.6.1"

 codeSystemName="LOINC" displayName="Carbon dioxide">

 ...

 </code>

 ...

 <statusCode code="completed"/>

 <effectiveTime value="201208151005-0800"/>

 <value xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

 xsi:type="PQ" unit="mmol/L" value="27"/>

 <interpretationCode code="N" codeSystem="2.16.840.1.113883.5.83"/>

 ...

</observation>

#### Rubric-40 Rad Results SHALL be encoded with radiology LOINC codes

**Implementation Detail:** In Result observation (V3) (2.16.840.1.113883.10.20.22.4.2) when /observation/code represents a radiology result, the LOINC code **SHALL** be a LOINC code where the LOINC class axis ="RAD".

##### Rubric Intent

Radiology Result LOINC codes are clinically valid codes in a Result Observation. See https://loinc.org/collaboration/rsna/ for LOINC radiology codes and/or any LOINC code where class axis = "RAD".

##### Examples

C-CDA Examples Task Force Link - Results Radiology with Image Narrative: <http://cdasearch.hl7.org/examples/view/26323b29d7ae6e03727e442b0884aff337f8627a>

Figure 55: Use LOINC codes where LOINC class is 'RAD'

<observation classCode="OBS" moodCode="EVN">

 <templateId root="2.16.840.1.113883.10.20.22.4.2"/>

 <templateId root="2.16.840.1.113883.10.20.22.4.2" extension="2015-08-

 01"/>

 <!-- Results Observation -->

 <id root="e1aa44dd-6f39-2f5c-b267-897c3824b563"/>

 <code code="36643-5" displayName="Chest X-ray 2 Views"

 codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC">

 </code>

 ...

 <statusCode code="completed"/>

 <effectiveTime value="20150225091059-0500"/>

 <value xsi:type="ED">

 <reference value="#Result1OriginalText" />

 </value>

 ...

</observation>

# REFERENCES

* C-CDA Rubric Project Page - <http://wiki.hl7.org/index.php?title=CCDA_Scorecard_Rubric_Update>

This is the current rubric link location; by following this link you can find more information about the process for creating a rubric and find call information.

* C-CDA Product Page - <http://www.hl7.org/implement/standards/product_brief.cfm?product_id=492>
The Consolidated CDA (C-CDA) implementation guide contains a library of CDA templates, incorporating and harmonizing previous efforts from Health Level Seven (HL7), Integrating the Healthcare Enterprise (IHE), and Health Information Technology Standards Panel (HITSP). It represents harmonization of the HL7 Health Story guides, HITSP C32, related components of IHE Patient Care Coordination (IHE PCC), and Continuity of Care (CCD).
* ONC C-CDA Scorecard - [www.healthit.gov/scorecard](http://www.healthit.gov/scorecard)
The C-CDA Scorecard leverages the work completed by an ONC-funded grant — [SMART (Substitutable Medical Apps Reusable Technologies)](https://www.healthit.gov/policy-researchers-implementers/substitutable-medical-apps-reusable-technologies) and promotes best practices in C-CDA implementation by assessing key aspects of the structured data found in individual documents. It is a tool designed to allow implementers to gain insight and information regarding industry best practice and usage overall. It also provides a rough quantitative assessment and highlights areas of improvement which can be made today to move the needle forward.
1. <https://loinc.org/usage/obs/> [↑](#footnote-ref-1)