CDAR2_IG_CCDA_PERIODONTAL_R1_STU_2017JUL

HL7 CDA® Release 2 Implementation Guide: Exchange of C-CDA Based Documents; Periodontal Attachment, Release 1 – US Realm

HL7 Standard for Trial Use
July 2017

Publication of this standard for trial use and comment has been approved by Health Level Seven International (HL7). This standard is not an accredited American National Standard. The comment period for trial use of this standard shall end 24 months from the date of publication. Suggestions for revision should be submitted at http://www.hl7.org/dstucomments/index.cfm.

Following this 24 month evaluation period, this standard, revised as necessary, will be submitted to a normative ballot in preparation for approval by ANSI as an American National Standard. Implementations of this trial use standard shall be viable throughout the normative ballot process and for up to six months after publication of the relevant normative standard.

IMPORTANT NOTES:

HL7 licenses its standards and select IP free of charge. **If you did not acquire a free license from HL7 for this document,** you are not authorized to access or make any use of it. To obtain a free license, please visit http://www.HL7.org/implement/standards/index.cfm.

If you are the individual that obtained the license for this HL7 Standard, specification or other freely licensed work (in each and every instance "Specified Material"), the following describes the permitted uses of the Material.

A. HL7 INDIVIDUAL, STUDENT AND HEALTH PROFESSIONAL MEMBERS, who register and agree to the terms of HL7's license, are authorized, without additional charge, to read, and to use Specified Material to develop and sell products and services that implement, but do not directly incorporate, the Specified Material in whole or in part without paying license fees to HL7.

INDIVIDUAL, STUDENT AND HEALTH PROFESSIONAL MEMBERS wishing to incorporate additional items of Special Material in whole or part, into products and services, or to enjoy additional authorizations granted to HL7 ORGANIZATIONAL MEMBERS as noted below, must become ORGANIZATIONAL MEMBERS of HL7.

B. HL7 ORGANIZATION MEMBERS, who register and agree to the terms of HL7's License, are authorized, without additional charge, on a perpetual (except as provided for in the full license terms governing the Material), non-exclusive and worldwide basis, the right to (a) download, copy (for internal purposes only) and share this Material with your employees and consultants for study purposes, and (b) utilize the Material for the purpose of developing, making, having made, using, marketing, importing, offering to sell or license, and selling or licensing, and to otherwise distribute, Compliant Products, in all cases subject to the conditions set forth in this Agreement and any relevant patent and other intellectual property rights of third parties (which may include members of HL7). No other license, sublicense, or other rights of any kind are granted under this Agreement.

C. NON-MEMBERS, who register and agree to the terms of HL7's IP policy for Specified Material, are authorized, without additional charge, to read and use the Specified Material for evaluating whether to implement, or in implementing, the Specified Material, and to use Specified Material to develop and sell products and services that implement, but do not directly incorporate, the Specified Material in whole or in part.

NON-MEMBERS wishing to incorporate additional items of Specified Material in whole or part, into products and services, or to enjoy the additional authorizations granted to HL7 ORGANIZATIONAL MEMBERS, as noted above, must become ORGANIZATIONAL MEMBERS of HL7.

Please see http://www.HL7.org/legal/ippolicy.cfm for the full license terms governing the Material.

Ownership. Licensee agrees and acknowledges that **HL7 owns** all right, title, and interest, in and to the Trademark. Licensee shall **take no action contrary to, or inconsistent with**, the foregoing.

Licensee agrees and acknowledges that HL7 may not own all right, title, and interest, in and to the Materials and that the Materials may contain and/or reference intellectual property owned by third parties ("Third Party IP"). Acceptance of these License Terms does not grant Licensee any rights with respect to Third Party IP. Licensee alone is responsible for identifying and obtaining any necessary licenses or authorizations to utilize Third Party IP in connection with the Materials or otherwise. Any actions, claims or suits brought by a third party resulting from a breach of any Third Party IP right by the Licensee remains the Licensee's liability.

Following is a non-exhaustive list of third-party terminologies that may require a separate license:

Terminology	**Owner/Contact**
Current Procedures Terminology (CPT) code set	American Medical Association http://www.ama-assn.org/ama/pub/physician-resources/solutions-managing-your-practice/coding-billing-insurance/cpt/cpt-products-services/licensing.page?
SNOMED CT	International Healthcare Terminology Standards Development Organization (IHTSDO) http://www.ihtsdo.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 222.nucc.org. AMA licensing contact: 312-464-5022 (AMA IP services)

Sponsored by:
Attachments Work Group
Structured Documents Work Group

Primary Editor:	Russell Ott Deloitte Consulting LLP rott@deloitte.com	Primary Editor:	Christopher Brancato Deloitte Consulting LLP cbrancato@deloitte.com
Co-Chair:	Craig Gabron Blue Cross Blue Shield of South Carolina craig.gabron@bcbssc.com	Co-Chair:	Durwin Day Health Care Service Corporation dayd@bcbsil.com
Co-Editor	Brett Marquard River Rock Associates brett@riverrockassociates.com	Co-Editor:	Nancy Orvis Defense Health Agency nancy.j.orvis.civ@mail.mil
Co-Editor:	Jean Narcisi American Dental Association narcisij@ada.org	Co-Editor:	CAPT Brenda Hamilton DMD, MS, FAGD United States Navy brenda.r.hamilton2.mil@mail.mil
Current Work Group includes those who participated in the Attachments Workgroup Periodontal Attachment IG project: Nancy Orvis, Chris Brancato, Brett Marquard, Brenda Hamilton, Robert Han, Patrick Cannady, Desirae Ciraci, Theresa Jansen, Durwin Day, Craig Gabron, Jean Narcisi, Angela Ulsh, Russell Ott, Ashley Payne, Molly McMorrow, Ann Burnett, Shayan Noushababi			

Acknowledgments

This guide was developed and produced through the efforts of Health Level Seven (HL7).

The editors appreciate the support and sponsorship of the HL7 Attachments Working Group, the HL7 Structured Documents Working Group (SDWG), and all volunteers and staff associated with the creation of this document. This guide would not have been possible without the support of the Defense Health Agency and the American Dental Association.

Table of Contents

Table of Figures

Table of Tables

1 INTRODUCTION

1.1 Purpose

The purpose of this implementation guide is to provide a HL7 CDA-based set of templates defining a standardized document that can be used to convey supporting clinical documentation from a dental provider to a payer (e.g., insurance company) to substantiate a claim for periodontal care.

This publication provides the data model, defined data items and their corresponding code and value sets, if available, specific to a periodontal attachment for the following applications.

- Those codes that identify the attachment or attachment components used in transactions such as those defined by the ASC X12N 277 *Health Care Claim Request for Additional Information* and the ASC X12N 275 *Additional Information to Support a Health Care Claim or Encounter* implementation guides.
- Those codes used in HL7 Clinical Document Architecture (CDA) documents designed for inclusion in the BIN segment of the 275 transaction set as described in the *HL7 Additional Information Specification Implementation Guide.*

The document leverages several observations that are already in use today. This was done to provide consistency to the doctrine of repurpose and reuse found within the CDA.

This document is heavily based on the American National Standard/American Dental Association (ANS/ADA) Specification Number 1079; *Standard Content of Electronic Attachments for Dental Claims,* 2015.

All proprietary documents, guides, guidance, standards, codes and values contained herein remain the property of their respective Standards Designating Organization. HL7 does not make any claim to ownership herein.

Where possible, it has been designed to align with design patterns present in the Release 2.1 version of the Consolidated CDA Templates for Clinical Notes.

This guide, in conjunction with the HL7 CDA Release 2 (CDA R2) standard, is to be used for implementing Periodontal Attachment CDA documents.

1.2 Audience

The audience for this implementation guide includes architects and developers of dental health information technology and dental payer systems in the US Realm. Business analysts and policy managers can also benefit from a basic understanding of the use of periodontal attachments to support both claim substantiation, as well as secondary use for dental care coordination.

1.3 Organization of the Guide

This document provides background on the use of Periodontal Attachments, and detailed documentation of how to use the included CDA templates and supporting terminologies to construct CDA-based Periodontal Attachments.

- **Chapter 1**—Introduction
- **Chapter 2**—Background on Periodontal Exams and Attachments. This section provides background and examples for those unfamiliar with periodontal exams or the submission of periodontal attachments to payers to substantiate claims.
- **Chapter 3**—Using This Implementation Guide. This section describes the rules and formalisms used to constrain the CDA R2 standard. It describes the formal representation of CDA templates, the mechanism by which templates are bound to vocabulary, and additional information necessary to understand and correctly implement the normative content found in this guide.
- **Chapter 4**—References. This section contains an inventory of the artifacts referenced in the development of this guide.
- **Chapter 5**—Document-Level Templates. This section contains the Periodontal Attachment document-level template as well as a republication of the US Realm Header from C-CDA R2.1.
- **Chapter 6**—Section-Level Templates. This section contains the two section-level templates used in a Periodontal Attachment.
- **Chapter 7**—Entry-Level Templates. This section contains all entry-level templates used in a Periodontal Attachment.
- **Chapter 8**—US Realm Header Supporting Templates. This section contains templates needed to support the US Realm Header as published in C-CDA R2.1.
- **Chapter 9**—Template Ids in this Guide. This section contains an inventory of unique template names and corresponding OIDs used in this guide.
- **Chapter 10**—Value Sets in this Guide. This section contains an inventory of the unique value sets used in this guide and their definitions.
- **Chapter 11**—Code Systems in this Guide. This section contains an inventory of code systems referenced in this guide.

2 BACKGROUND ON PERIODONTAL EXAMS AND ATTACHMENTS

2.1 Background: Periodontal Attachments

The Periodontal attachment is used to convey information about periodontal related services. This includes the business use of claims attachments, prior authorization and pre-determinations. It may also be used for other clinical data exchange functions as needed. The items defined for electronic supporting documentation were developed by the Standards Committee on Dental Informatics of the American Dental Association (ADA). Many of the items described in the attachments are based on an analysis of paper forms that have been used by dentists and payers in the past. Each possible attachment item, however, has been reviewed for appropriateness in an electronic format. This standard does not include diagnostic quality scanned images, or digital images in DICOM or other image file types to represent radiographs or pictures of patient conditions. These are included in a separate attachment if needed.

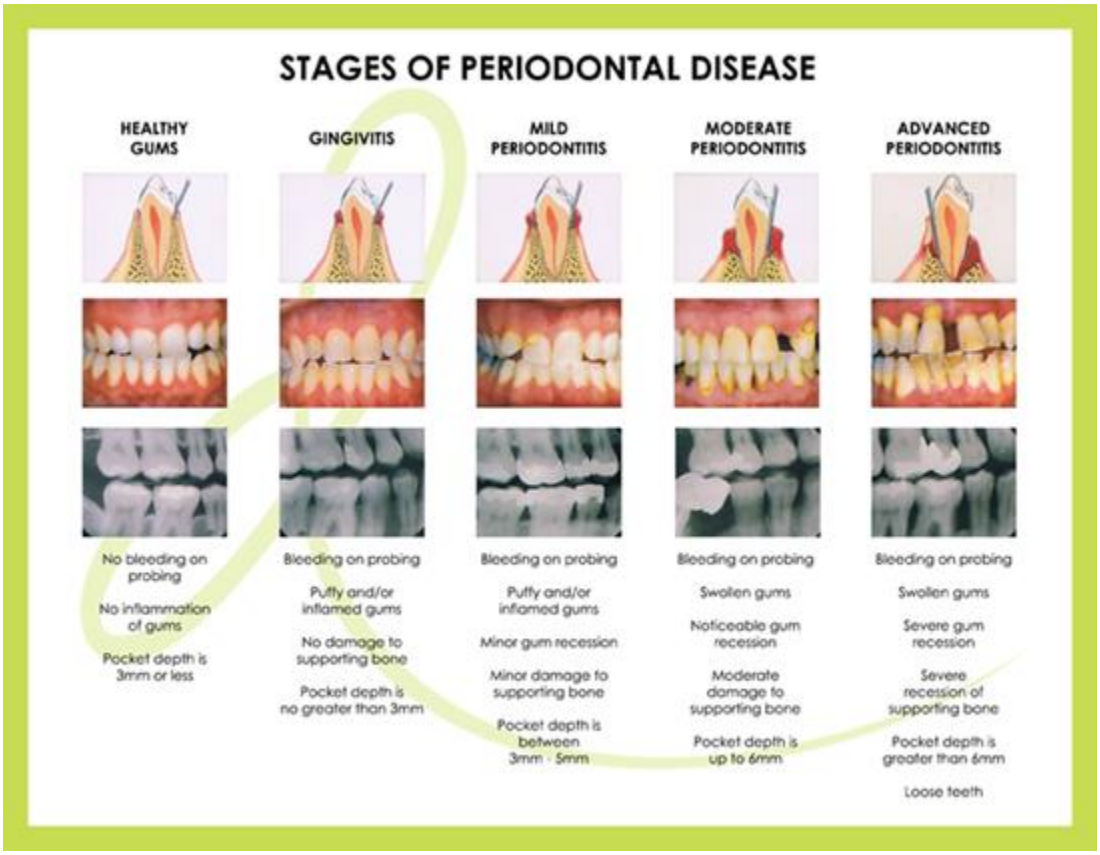
Currently the industry is capturing and sending periodontal exam information which is transferred to electronic systems in the form of unstructured data. The authors respectfully believe that by creating new document types to support these data, claims processing speed will be increased and the overall delivery and payment of care will be made more interoperable through the use of standardized document types fit for this purpose.

The peridontal claim attachment may be orginated in two ways: solicited - where the payer requires information after a claim for payment was received and processed, and unsolicited - where the periodontal claim attachment is sent when the provider is sending an electronic claim for payment without a request from the payer.

2.2 Background: Periodontal Exams

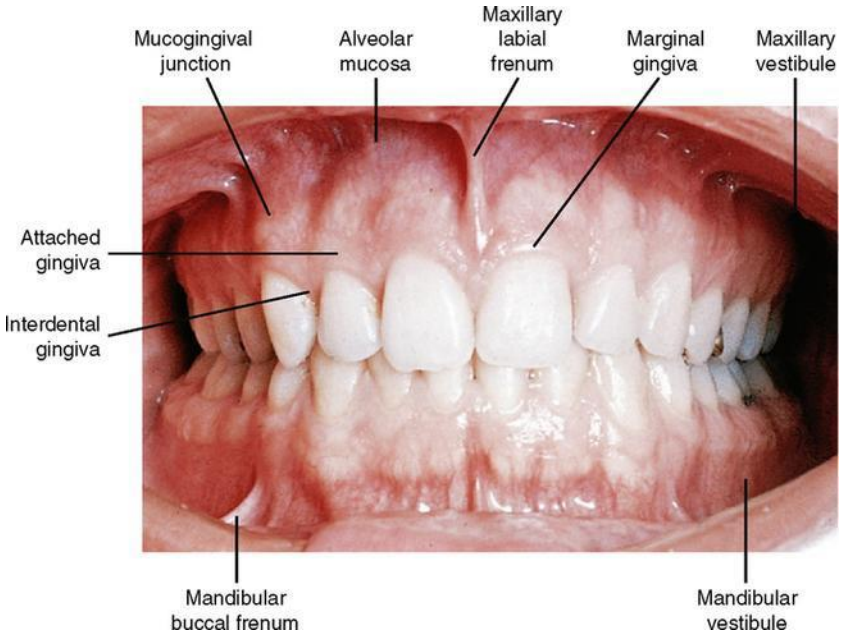
The Peridontal Exam is a series of physical observations and measurements of the disease of the gingiva. It includes all structures and relationships to the teeth and supporting bony structures. Gingival examinations have two parts. The first part contains a gross observation of overall health of the mouth which lends to observations without specific measurements such as Oral Hygiene: Acceptable or Unacceptable. In these cases, one and only one value is recorded. In the second part of the exam, the gingiva is evaluated and measured using tools with gradiants yielding values resultant from direct measurement while others use specific clinical observations based on appropriate clinical guidelines. For example: Probing depth of the gingival sulcus is measured in Millimeters and repeated in six different locations surrounding the tooth whereas furcation involvement is observed and annotated using a clinical classification (Glickman Classification) without specific numeric measurement. Additional detail on each observation is elaborated in detail throughout the rest of the document.

[1]Gingival disease is evaluated in five stages: namely, gingival health, gingivitis, Slight/mild periodontitis, moderate periodontitis, and advance/aggressive periodontitis. Disease progression or treatment efficacy is both observed and measured. The image (left) depicts this progression and implementers should note the values associated with the measurement of each tooth to a particular stage of disease.



[1] Image source: https://deefordentist.com/why-cant-i-just-get-a-cleaning/ as of 4/20/2017

[2]The exam begins by peforming a gross examination of the mouth. The gingival structures are evaluated by looking for normality or abnormality. Clinical observations such as oral hygiene, bleeding upon probing, frenum involvement, orthodontic and restorative treatment needs are a result of this gross evaluation. Normal observations are documented in the clinical record in unstructured text while abnormalities are captured as discrete findings.



The specific examination continues to individual teeth, identifed by a number convention, 1-32 which represents the average number of teeth present in an adult dentition. The gingiva over the missing teeth/edentulous spaces or areas where teeth are replaced by a bridge (pontic) are also not evaluated but the abutting/adjoining teeth are. This is often valuable in evaluating the efficacy of the bridge/pontic to hold the tooth spacing as intended. Children and adults may have “supernumerary” teeth where teeth are counted and expressed as unique numbers during the observation.

[2] Image provided by US Naval Postgraduate School, CAPT Brenda Hamilton USN

2.3 Sample Periodontal Exam User Story

Mr. Brown has been referred to Dr. Smalls by his general dentist for evaluation and possible treatment for Periodontal disease.

Mr. Brown's demographics are: He is a 56 year old, white male. He lives at 1245 Hillsdale Drive, Charlottesville, VA 22963. Other demographic information is collected as well as payer information from his insurance card.

Mr. Brown comes with a summary of his medical history, basic radiographs,list of medications, allergies (environmental and medication), etc. Dr. Smalls reviews this information and directs his staff to enter it into his dental record system while he performs a comprehensive periodontal exam.

The exam begins with a gross examination of the mouth, observing the general health of the mouth, the teeth and all intraoral structures. He notes that the patient has unacceptable oral hygiene. He also notes that there is bleeding from teeth 2-4 and 25-30. He continues the evaluation of the gingiva, evaluating on a tooth by tooth basis.

In evaluation of the Frenum or skin folds, Dr. Smalls examines all of the 4 frena, maxillary anterior, mandibular anterior and has normal findings.

Working through the 32 tooth positions, he notes that teeth 5, 6,7 have been replaced with a bridge which is connected/abutted to tooth 4 on one side and tooth 8 on the other. Using a graduated periodontal probe, he finds the following abnormalities. He notes that there are multiple locations where the gums are bleeding and recessed from the tooth upon gross observation. The remaining teeth are either missing or are within normal limits:

Tooth Position	Furcation Involvement	Gingival Recession	Probing Depth
2	Grade II, mid-facial(buccal)	5mm, mid-facial(buccal)	7mm mid-facial (buccal)
3	Grade III, mid-facial(buccal)	7mm, mid-facial(buccal)	10mm mid-facial(buccal)
4	Grade III, mid-facial (buccal)	10 mm, mid-facial(buccal)	10mm mid-facial(buccal)
5	Missing, replaced by Maryland Bridge	N/A	N/A
6	Missing, replaced by Maryland Bridge	N/A	N/A
7	Missing, replaced by Maryland Bridge	N/A	N/A
8	Grade III, mid-facial (buccal)	10 mm, mid-facial(buccal)	10mm mid-facial(buccal)
25	Grade I, distal	1mm, disto-lingual/palatal	3mm disto-lingual/palatal
26	Grade I, distal	1mm, disto-lingual/palatal	3mm disto-lingual/palatal
27	Grade II, distal	5mm, disto-	3mm disto-

		lingual/palatal	lingual/palatal
28	Grade III, distal	9mm, disto-lingual/palatal	3mm disto-lingual/palatal
29	Grade II, distal	6mm, disto-lingual/palatal	3mm disto-lingual/palatal
30	Grade I, distal	1mm, disto-lingual/palatal	3mm disto-lingual/palatal

Dr. Small's inputs his 900 character narrative in the text box provided by his Electronic Dental Record System (EDR). He has completed his exam.

3 USING THIS IMPLEMENTATION GUIDE

The authors of this guide recommend implementers of this standard reference the invaluable content in Section 4: "Using this Implementation Guide" of Volume 1 of *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1.*

In the interest of providing a single reference for implementers, the most important content from that section has been reprinted in this section with minor modifications to reflect this publication.

3.1 Conformance Conventions Used in This Guide

3.1.1 Templates and Conformance Statements[3]

Conformance statements within this implementation guide are presented as constraints from Trifolia Workbench, a template repository. An algorithm converts constraints recorded in Trifolia to a printable presentation. Each constraint is uniquely identified by an identifier at or near the end of the constraint (e.g., CONF:86-7345). The digits in the conformance number before the hyphen identify which implementation guide the template belongs to and the number after the hyphen is unique to the owning implementation guide. Together, these two numbers uniquely identify each constraint. These identifiers are persistent but not sequential. Conformance numbers in this guide associated with a conformance statement that is carried forward from a previous version of this guide will carry the same conformance number from the previous version. This is true even if the previous conformance statement has been edited. If a conformance statement is entirely new it will have a new conformance number.

Bracketed information following each template title indicates the template type (section, observation, act, procedure, etc.), the object `identifier (OID)` or `uniform resource name (URN)`, and whether the template is open or closed. The `identifier OID` is the `templateId/@root value`; all `templateIds` have an `@root` value. Versioned templates also have an `@extension` value, which is a date identifying the version of this template; such templates are identified by `URN` and the HL7 version (`urn:hl7ii`). The `URN` identifier includes both the `@root` and `@extension` value for the `templateId` (for example, `identifier urn:hl7ii:2.16.840.1.113883.10.20.5.5.41:2014-06-09`).

Each section and entry template in this guide includes a context table. The "Contained By" column indicates which templates use this template, and if the template is optional or required in the containing template. The "Contains" column indicates any templates that the template uses.

[3] Content taken from Section 4.2.1, Volume 1, of *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1 (C-CDA R2.1).* (August 2015) http://www.hl7.org/implement/standards/product_brief.cfm?product_id=408

Table 1: Contexts Table Example—Allergy Concern Act (V2)

Contained By:	Contains:
Allergies and Intolerances Section (entries optional) (V2) (optional) Allergies and Intolerances Section (entries required) (V2) (required)	Allergy - Intolerance Observation (V2) Author Participation

Each entry template also includes a constraints overview table to summarize the constraints in the template.

Table 2: Constraints Overview Example—Allergy Concern Act (V2)

XPath	Card.	Verb	Data Type	CONF#	Value
act (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.30:2014-06-09)					
@classCode	1..1	SHALL		1098-7469	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
@moodCode	1..1	SHALL		1098-7470	2.16.840.1.113883.5.1001 (ActMood) = EVN
templateId	1..1	SHALL		1098-7471	
@root	1..1	SHALL		1098-10489	2.16.840.1.113883.10.20.22.4.30
@extension	1..1	SHALL		1098-32543	2014-06-09
...					

The expression “such that it” at the end of one conformance statement links that conformance statement to the following subordinate conformance statement to further constrain the first conformance statement. To understand the full effect of this conformance construct, the two conformances must be considered as a single compound requirement. The subordinate conformance statement functions as a subordinate clause (like a "where" clause), which is being applied on the first conformance statement.

The following example shows a compound conformance statement made up of two conformance statements joined by a "such that it" clause. The effect of this syntax can be interpreted as a "where" clause. Thus...

1. **SHALL** contain exactly one [1..1] **templateId** (CONF:81-7899) such that it
    a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.31" (CONF:81-10487).

...is understood as:

> This template **SHALL** contain exactly one [1..1] **templateId** where it contains exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.31".

This means that you must have a template id with **@root**="2.16.840.1.113883.10.20.22.4.31", but you can also have other template ids with different valued attributes.

The following figure shows a typical template's set of constraints presented in this guide. The next chapters describe specific aspects of conformance statements—open vs. closed templates, conformance verbs, cardinality, vocabulary conformance, containment relationships, and null flavors.

Age Observation

`[observation: identifier urn:oid:2.16.840.1.113883.10.20.22.4.31 (open)]`

1. **SHALL** contain exactly one [1..1] **@classCode**="OBS" Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**) (CONF:81-7613).
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**) (CONF:81-7614).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:81-7899) such that it
    a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.31" (CONF:81-10487).

…

Figure 1: Constraint Conformance Including "such that it" Syntax Example

3.1.2 Open and Closed Templates[4]

In open templates, all of the features of the CDA R2 base specification are allowed except as constrained by the templates. By contrast, a closed template specifies everything that is allowed and nothing further may be included.

Open templates allow HL7 implementers to develop additional structured content not constrained within this guide. HL7 encourages implementers to bring their use cases forward as candidate requirements to be formalized in a subsequent version of the standard to maximize the use of shared semantics.

3.1.3 Conformance Verbs (Keywords)[5]

The keywords **SHALL, SHOULD, MAY, NEED NOT, SHOULD NOT,** and **SHALL NOT** in this document are to be interpreted as described in the HL7 Version 3 Publishing Facilitator's Guide.[6]

- **SHALL**: an absolute requirement
- **SHALL NOT**: an absolute prohibition against inclusion

[4] Content taken from Section 4.2.3, Volume 1, of *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1 (C-CDA R2.1).* (August 2015) http://www.hl7.org/implement/standards/product_brief.cfm?product_id=408

[5] Content taken from Section 4.2.4, Volume 1, of *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1 (C-CDA R2.1).* (August 2015) http://www.hl7.org/implement/standards/product_brief.cfm?product_id=408

[6] HL7, *Version 3 Publishing Facilitator's Guide.* http://www.hl7.org/v3ballot/html/help/pfg/pfg.htm

- **SHOULD/SHOULD NOT**: best practice or recommendation. There may be valid reasons to ignore an item, but the full implications must be understood and carefully weighed before choosing a different course
- **MAY/NEED NOT**: truly optional; can be included or omitted as the author decides with no implications

The keyword "**SHALL**" allows the use of `nullFlavor` unless the requirement is on an attribute or the use of `nullFlavor` is explicitly precluded.

When conformance statements are nested (or have subordinate clauses) the conformance statements are to be read and interpreted in hierarchical order. These hierarchical clauses can be interpreted as "if then, else" clauses. Thus...

a. This structuredBody **SHOULD** contain zero or one [0..1] **component** (CONF:1098-29066) such that it
   i. **SHALL** contain exactly one [1..1] **Plan of Treatment Section (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.2.10:2014-06-09) (CONF:1098-29067).

...is understood as:

a. It is recommended (**SHOULD**) that the structureBody contains a component.
   i. **If** the component exists, **then** it must contain a Plan of Treatment Section (V2),
   ii. **else** the component does not exist, and the conformance statement about the Plan of Treatment Section (V2) should be skipped.

In the case where the higher level conformance statement is a **SHALL,** there is no conditional clause. Thus...

a. This structuredBody **SHALL** contain exactly one [1..1] **component** (CONF:1098-29086) such that it
   i. **SHALL** contain exactly one [1..1] **Problem Section (entries required) (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.2.5.1:2014-06-09) (CONF:1098-29087).

...means that the structuredBody is always required to have a component.

3.1.4 Cardinality[7]

The cardinality indicator (0..1, 1..1, 1..*, etc.) specifies the allowable occurrences within a document instance. The cardinality indicators are interpreted with the following format “m…n” where m represents the least and n the most:

- 0..1 zero or one
- 1..1 exactly one

[7] Content taken from Section 4.2.5, Volume 1, of *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1 (C-CDA R2.1).* (August 2015) http://www.hl7.org/implement/standards/product_brief.cfm?product_id=408

- 1..* at least one
- 0..* zero or more
- 1..n at least one and not more than n

When a constraint has subordinate clauses, the scope of the cardinality of the parent constraint must be clear. In the next figure, the constraint says exactly one participant is to be present. The subordinate constraint specifies some additional characteristics of that participant.

Figure 2: Constraints Format – only one allowed

```
1. SHALL contain exactly one [1..1] participant (CONF:2777).
     a. This participant SHALL contain exactly one [1..1] @typeCode="LOC"
        (CodeSystem: 2.16.840.1.113883.5.90 HL7ParticipationType)
        (CONF:2230).
```

In the next figure, the constraint says only one participant "like this" is to be present. Other participant elements are not precluded by this constraint.

Figure 3: Constraints Format – only one like this allowed

```
1. SHALL contain exactly one [1..1] participant (CONF:2777) such that it
     a. SHALL contain exactly one [1..1] @typeCode="LOC" (CodeSystem:
        2.16.840.1.113883.5.90 HL7ParticipationType) (CONF:2230).
```

3.1.5 Optional and Required with Cardinality[8]

The terms *optional* and *required* describe the *lower* bound of cardinality as follows:

Optional means that the number of allowable occurrences of an element may be 0; the cardinality will be expressed as [0..1] or [0..*] or similar. In these cases, the element may not be present in the instance. Conformances formulated with **MAY** or **SHOULD** are both considered "optional" conformances.

Required means that the number of allowable occurrences of an element must be at least 1; the cardinality will be expressed as [m..n], where m >=1 and n >=1 (for example, [1..1] or [1..*]). In these cases, the element must be present in the instance. Conformance statements formulated with SHALL are required conformances.

3.1.6 Containment Relationships[9]

Containment constraints between a section and its entries allow indirect containment in this guide. This means that where a section asserts containment of an entry, that entry either can be a direct child or a further descendent of that section.

---

[8] Content taken from Section 4.2.6, Volume 1, of *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1 (C-CDA R2.1).* (August 2015) http://www.hl7.org/implement/standards/product_brief.cfm?product_id=408

[9] Content taken from Section 4.2.7, Volume 1, of *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1 (C-CDA R2.1).* (August 2015) http://www.hl7.org/implement/standards/product_brief.cfm?product_id=408

For example, in the following constraint:

1. **SHALL** contain at least one [1..*] **entry** (CONF:8647) such that it
    a. **SHALL** contain exactly one [1..1] **Advance Directive Observation** (templateId:2.16.840.1.113883.10.20.22.4.48) (CONF:8801).

The Advance Directive Observation can be a direct child of the section (i.e., section/entry/AdvanceDirectiveObservation) or a further descendent of that section (i.e., section/entry/…/AdvanceDirectiveObservation). Either of these are conformant.

All other constraints are direct and do not allow an indirect containment relationship, for example:

1. **SHALL** contain exactly one [1..1] templateId/@root="2.16.840.1.113883.10.20.22.2.21" (CONF:7928).

The templateId must be a direct child of the section (i.e., section/templateId).

3.1.7 Vocabulary Conformance[10]

The templates in this document use terms from several code systems. These vocabularies are defined in various supporting specifications and may be maintained by other bodies, as is the case for the LOINC® and SNOMED CT® vocabularies.

Note that value set identifiers (e.g., ValueSet 2.16.840.1.113883.1.11.78 Observation Interpretation (HL7) **DYNAMIC**) used in the binding definitions of template conformance statements do not appear in the XML instance of a CDA document. The definition of the template must be referenced to determine or validate the vocabulary conformance requirements of the template.

Value set bindings adhere to HL7 Vocabulary Working Group best practices, and include both an indication of stability and of coding strength for the binding. Value set bindings can be **STATIC**, meaning that they bind to a specified version of a value set, or **DYNAMIC**, meaning that they bind to the most current version of the value set. If a **STATIC** binding is specified, a date **SHALL** be included to indicate the value set version. If a **DYNAMIC** binding is specified, the value set authority and link to the base definition of the value set **SHALL** be included, if available, so implementers can access the current version of the value set. When a vocabulary binding binds to a single code, the stability of the binding is implicitly **STATIC**.

Figure 4: Binding to a Single Code

2. **SHALL** contain exactly one [1..1] **code** (CONF:15403).
   a) This code **SHALL** contain exactly one [1..1] **@code**="11450-4" Problem List (CONF:15408).
   b) This code **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.1" (CodeSystem: LOINC 2.16.840.1.113883.6.1 **STATIC**) (CONF: 31141).

The notation conveys the actual code (11450-4), the code's displayName (Problem List), the OID of the codeSystem from which the code is drawn (2.16.840.1.113883.6.1), and the codeSystemName (LOINC).

---

[10] Content taken from Section 4.2.8, Volume 1, of *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1 (C-CDA R2.1).* (August 2015) http://www.hl7.org/implement/standards/product_brief.cfm?product_id=408

HL7 Data Types Release 1 requires the `codeSystem` attribute unless the underlying data type is "Coded Simple" or "CS", in which case it is prohibited. The `displayName` and the `codeSystemName` are optional, but recommended, in all cases.

The above example would be properly expressed as follows.

Figure 5: XML Expression of a Single-Code Binding

```
<code code="11450-4" codeSystem="2.16.840.1.113883.6.1"/>

<!-- or -->

<code code="11450-4" codeSystem="2.16.840.1.113883.6.1"
      displayName="Problem List"
      codeSystemName="LOINC"/>
```

A full discussion of the representation of vocabulary is outside the scope of this document; for more information, see the *HL7 V3 Normative Edition 2010*[11] sections on Abstract Data Types and XML Data Types R1.

There is a discrepancy between the HL7 R1 Data Types and this guide in the implementation of translation code versus the original code. The R1 data type requires the original code in the root. The convention agreed upon for this implementation guide specifies a code from the required value set be used in the element and other codes not included in the value set are to be represented in a translation for the element. This discrepancy is resolved in HL7 Data Types R2.

In the next example, the conformant code is SNOMED-CT code 206525008.

Figure 6: Translation Code Example

```
<code code='206525008'
      displayName='neonatal necrotizing enterocolitis'
      codeSystem='2.16.840.1.113883.6.96'
      codeSystemName='SNOMED CT'>
   <translation code='NEC-1'
      displayName='necrotizing enterocolitis'
      codeSystem='2.16.840.1.113883.19'/>
</code>
```

Value set tables are present below a template, or are referenced if they occur elsewhere in the specification, when there are value set bindings in the template. The value set table provides the value set identifier, a description, and a link to the source of the value set when possible. Ellipses in the last row indicate the value set members shown are examples and the true source must be accessed to see all members.

If a value set binding has a **DYNAMIC** stability, implementers creating a CDA document must go to the location in the URL to check for the most current version of the value set expansion.

[11] *HL7 Version 3 Interoperability Standards,* http://www.hl7.org/memonly/downloads/v3edition.cfm - V32010

Table 3: Example Value Set Table (Referral Types)

Value Set: Referral Types 2.16.840.1.113883.11.20.9.56 A value set of SNOMED-CT codes descending from "3457005" patient referral (procedure). Value Set Source: http://vtsl.vetmed.vt.edu/TerminologyMgt/RF2Browser/ISA.cfm?SCT_ConceptID=3457005			
Code	**Code System**	**Code System OID**	**Print Name**
44383000	SNOMED CT	2.16.840.1.113883.6.96	Patient referral for consultation
391034007	SNOMED CT	2.16.840.1.113883.6.96	Refer for falls assessment (procedure)
86395003	SNOMED CT	2.16.840.1.113883.6.96	Patient referral for family planning (procedure)
306106002	SNOMED CT	2.16.840.1.113883.6.96	Referral to intensive care service (procedure)
306140002	SNOMED CT	2.16.840.1.113883.6.96	Referral to clinical oncology service (procedure)
396150002	SNOMED CT	2.16.840.1.113883.6.96	Referral for substance abuse (procedure)
...			

3.1.8 Data Types[12]

All data types used in a CDA document are described in the CDA R2 normative edition.[13] All attributes of a data type are allowed unless explicitly prohibited by this specification.

3.1.9 Document-Level Templates "Properties" Heading[14]

In Volume 2 of this implementation guide, each document-level template has a "Properties" heading for ease of navigation. The Properties heading is an organizational construct, underneath which relevant CDA act-relationships and roles are called out as headings in the document.

[12] Content taken from Section 4.2.9, Volume 1, of *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1 (C-CDA R2.1).* (August 2015) http://www.hl7.org/implement/standards/product_brief.cfm?product_id=408

[13] *HL7 CDA Release 2.* http://www.hl7.org/implement/standards/product_brief.cfm?product_id=7

[14] Content taken from Section 4.2.10, Volume 1, of *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1 (C-CDA R2.1).* (August 2015) http://www.hl7.org/implement/standards/product_brief.cfm?product_id=408

3.2 XML Conventions Used in This Guide

3.2.1 XPath Notation[15]

Instead of the traditional dotted notation used by HL7 to represent RIM classes, this document uses XML Path Language (XPath) notation[16] in conformance statements and elsewhere to identify the XML elements and attributes within the CDA document instance to which various constraints are applied. The implicit context of these expressions is the root of the document. This notation provides a mechanism that will be familiar to developers for identifying parts of an XML document.

XPath statements appear in this document in a `monospace font`.

XPath syntax selects nodes from an XML document using a path containing the context of the node(s). The path is constructed from node names and attribute names (prefixed by a '@') and catenated with a '/' symbol.

Figure 7: XML Document Example

```
<author>
  <assignedAuthor>
  ...
    <code codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'
          code='17561000' displayName='Cardiologist' />
  ...
  </assignedAuthor>
</author>
```

In the above example, the `code` attribute of the code could be selected with the XPath expression in the next figure.

Figure 8: XPath Expression Example

```
author/assignedAuthor/code/@code
```

3.2.2 XML Examples and Sample Documents[17]

Extensible Mark-up Language (XML) examples appear in figures in this document in this `monospace font`. XML elements (`code, assignedAuthor`, etc.) and attribute names (`SNOMED CT, 17561000`, etc.) also appear in this `monospace font`. Portions of the XML content may be omitted from the content for brevity, marked by an ellipsis (...) as shown in the example below.

---

[15] Content taken from Section 4.3.1, Volume 1, of *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1 (C-CDA R2.1).* (August 2015) http://www.hl7.org/implement/standards/product_brief.cfm?product_id=408

[16] W3C, XML Path Language. http://www.w3.org/TR/xpath/

[17] Content taken from Section 4.3.2, Volume 1, of *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1 (C-CDA R2.1).* (August 2015) http://www.hl7.org/implement/standards/product_brief.cfm?product_id=408

Figure 9: ClinicalDocument Example

```
<ClinicalDocument xmls="urn:hl7-org:v3">
  ...
</ClinicalDocument>
```

4 REFERENCES

- American National Standard/American Dental Association (ANS/ADA) Specification Number 1079; *Standard Content of Electronic Attachments for Dental Claims,* 2015.
- *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1 (C-CDA R2.1).* (August 2015) http://www.hl7.org/implement/standards/product_brief.cfm?product_id=408
- *HL7 Clinical Document Architecture, Release 2 (CDA R2).* (May 2005). http://www.hl7.org/implement/standards/product_brief.cfm?product_id=7

5 DOCUMENT-LEVEL TEMPLATES[18]

Document-level templates describe the purpose and rules for constructing a conforming CDA document. Document templates include constraints on the CDA header and indicate contained section-level templates.

Each document-level template contains the following information:

- Scope and intended use of the document type
- Description and explanatory narrative
- Template metadata (e.g., templateId)
- Header constraints (e.g., document type, template id, participants)
- Required and optional section-level templates

5.1 Periodontal Claim Attachment Document

`[ClinicalDocument: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.1.2:2017-04-01 (open)]`

Table 4: Periodontal Claim Attachment Document Contexts

Contained By:	Contains:
	Periodontal Exam Section

Document for providing supporting clinical information to substantiate a claim to a payer related to periodontal care.

[18] Document-level introductory language taken from *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1 (C-CDA R2.1).* (August 2015) http://www.hl7.org/implement/standards/product_brief.cfm?product_id=408

Table 5: Periodontal Claim Attachment Document Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
ClinicalDocument (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.1.2:2017-04-01)					
templateId	1..1	SHALL		3282-365	
@root	1..1	SHALL		3282-375	2.16.840.1.113883.10.20.38.1.2
@extension	1..1	SHALL		3282-548	2017-04-01
code	1..1	SHALL		3282-366	
@code	1..1	SHALL		3282-376	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 74030-8
@codeSystem	1..1	SHALL		3282-433	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
participant	0..*	SHOULD		3282-383	
@typeCode	1..1	SHALL		3282-386	urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = CALLBCK
associatedEntity	1..1	SHALL		3282-384	
@classCode	1..1	SHALL		3282-387	urn:oid:2.16.840.1.113883.5.110 (HL7RoleClass) = ASSIGNED
addr	0..*	SHOULD		3282-389	
telecom	1..*	SHALL		3282-390	
associatedPerson	1..1	SHALL		3282-385	
name	1..*	SHALL		3282-391	
scopingOrganization	0..1	MAY		3282-392	
documentationOf	1..1	SHALL		3282-393	
serviceEvent	1..1	SHALL		3282-394	
@classCode	1..1	SHALL		3282-397	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = ACT
id	1..*	SHALL		3282-395	
code	1..1	SHALL		3282-396	urn:oid:2.16.840.1.113883.6.13 (CDT)
component	1..1	SHALL		3282-	

				371	
structuredBody	1..1	SHALL		3282-372	
component	1..1	SHALL		3282-374	
section	1..1	SHALL		3282-382	Periodontal Exam Section (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.2.2:2017-04-01

2. Conforms to **US Realm Header (V3)** template (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.1.1:2015-08-01).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-365) such that it
    a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.1.2" (CONF:3282-375).
    b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-548).
4. **SHALL** contain exactly one [1..1] **code** (CONF:3282-366) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="74030-8" Periodontal service attachment (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-376).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-433).
5. **SHOULD** contain zero or more [0..*] **participant** (CONF:3282-383) such that it

The CALLBCK participant is intended to contain contact information that a recipient of the Periodontal Attachment Document could use to obtain further information related to the attachment.

    a. **SHALL** contain exactly one [1..1] **@typeCode**="CALLBCK" (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:3282-386).
    b. **SHALL** contain exactly one [1..1] **associatedEntity** (CONF:3282-384).
        i. This associatedEntity **SHALL** contain exactly one [1..1] **@classCode**="ASSIGNED" (CodeSystem: HL7RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:3282-387).
        ii. This associatedEntity **SHOULD** contain zero or more [0..*] **addr** (CONF:3282-389).
        iii. This associatedEntity **SHALL** contain at least one [1..*] **telecom** (CONF:3282-390).
        iv. This associatedEntity **SHALL** contain exactly one [1..1] **associatedPerson** (CONF:3282-385) such that it
            1. **SHALL** contain at least one [1..*] **name** (CONF:3282-391).
        v. This associatedEntity **MAY** contain zero or one [0..1] **scopingOrganization** (CONF:3282-392).

A periodontal claim attachment should be associated with a particular patient visit - the details of that visit are documented within the documentationOf structure.

6. **SHALL** contain exactly one [1..1] **documentationOf** (CONF:3282-393) such that it
    a. **SHALL** contain exactly one [1..1] **serviceEvent** (CONF:3282-394) such that it

i. **SHALL** contain exactly one [1..1] **@classCode="ACT"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3282-397).

The ID should be the "attachment re-association ID" described in section 3.6.1 of the Supplement to Consolidated CDA for Attachments - http://www.hl7.org/implement/standards/product*brief.cfm?product*id=305.

ii. **SHALL** contain at least one [1..*] **id** (CONF:3282-395).

iii. **SHALL** contain exactly one [1..1] **code**, which **SHALL** be selected from CodeSystem CDT (urn:oid:2.16.840.1.113883.6.13) **DYNAMIC** (CONF:3282-396).

7. **SHALL** contain exactly one [1..1] **component** (CONF:3282-371) such that it
   a. **SHALL** contain exactly one [1..1] **structuredBody** (CONF:3282-372).
      i. This structuredBody **SHALL** contain exactly one [1..1] **component** (CONF:3282-374) such that it
         1. **SHALL** contain exactly one [1..1] **Periodontal Exam Section** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.2.2:2017-04-01) (CONF:3282-382).

Figure 10: Periodontal Claims Attachment Document Service Event Sample

```
<serviceEvent classCode="ACT">
    <!-- This ID should be the "Attachment Re-association ID" used to correlate this
Attachment to a claim -->
    <id root="9aaccc19-7083-495b-9547-ac7f00a15da1"/>
    <code code="D0180" displayName="Comprehensive Periodontal Evaluation"
codeSystem="2.16.840.1.113883.6.13" codeSystemName="Code on Dental Procedures and
Nomenclature"/>
    <!-- The effectiveTime reflects the provision of care summarized in the document. -->
    <effectiveTime>
        <low value="20161123"/>
        <high value="20161123"/>
        <!-- The high value represents when the summarized provision of care being ended. -
->
    </effectiveTime>
    <performer typeCode="PRF">
        <functionCode code="PCP" codeSystem="2.16.840.1.113883.5.88"
codeSystemName="ParticipationFunction" displayName="Primary Care Provider">
            <originalText>Primary Care Provider</originalText>
        </functionCode>
        <assignedEntity>
            <!-- The ID below represents an individual NPI -->
            <id extension="5555555555" root="2.16.840.1.113883.4.6"/>
            <code code="1223S0112X" displayName="Oral & Maxillofacial Surgery"
codeSystem="2.16.840.1.113883.6.101" codeSystemName="Healthcare Provider Taxonomy
(HIPAA)"/>
            <addr use="WP">
                <streetAddressLine>12345 Main Street</streetAddressLine>
                <city>Fairfax</city>
                <state>VA</state>
                <postalCode>22031</postalCode>
                <country>US</country>
            </addr>
            <telecom use="WP" value="tel:+1(555)555-0002"/>
            <assignedPerson>
                <name>
                    <given>Patricia</given>
                    <given qualifier="CL">Patty</given>
                    <family>Periodontist</family>
                    <suffix qualifier="AC">DMD</suffix>
                </name>
            </assignedPerson>
            <representedOrganization>
                <!-- The ID below represents an NPI for an organization -->
                <id extension="123456789" root="2.16.840.1.113883.4.6"/>
                <name>Fairfax Periodontal Care</name>
                <telecom use="WP" value="tel:+1(555)555-0002"/>
                <addr use="WP">
                    <streetAddressLine>12345 Main Street</streetAddressLine>
                    <city>Fairfax</city>
                    <state>VA</state>
                    <postalCode>22031</postalCode>
                    <country>US</country>
                </addr>
            </representedOrganization>
        </assignedEntity>
```



```
    </performer>
</serviceEvent>
```

5.2 US Realm Header (V3)

[ClinicalDocument: identifier urn:hl7ii:2.16.840.1.113883.10.20.22.1.1:2015-08-01 (open)]

Published as part of Consolidated CDA Templates for Clinical Notes (US Realm) DSTU R2.1

Table 6: US Realm Header (V3) Contexts

Contained By:	Contains:
	US Realm Address (AD.US.FIELDED) US Realm Date and Time (DTM.US.FIELDED) US Realm Person Name (PN.US.FIELDED)

This template defines constraints that represent common administrative and demographic concepts for US Realm CDA documents. Further specification, such as ClinicalDocument/code, are provided in document templates that conform to this template.

Table 7: US Realm Header (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
ClinicalDocument (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.1.1:2015-08-01)					
realmCode	1..1	SHALL		1198-16791	US
typeId	1..1	SHALL		1198-5361	
@root	1..1	SHALL		1198-5250	2.16.840.1.113883.1.3
@extension	1..1	SHALL		1198-5251	POCD_HD000040
templateId	1..1	SHALL		1198-5252	
@root	1..1	SHALL		1198-10036	2.16.840.1.113883.10.20.22.1.1
@extension	1..1	SHALL		1198-32503	2015-08-01
id	1..1	SHALL		1198-5363	
code	1..1	SHALL		1198-5253	
title	1..1	SHALL		1198-5254	
effectiveTime	1..1	SHALL		1198-5256	US Realm Date and Time (DTM.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.4
confidentialityCode	1..1	SHALL		1198-5259	urn:oid:2.16.840.1.113883.1.11.16926 (HL7 BasicConfidentialityKind)
languageCode	1..1	SHALL		1198-5372	urn:oid:2.16.840.1.113883.1.11.11526 (Language)
setId	0..1	MAY		1198-5261	
versionNumber	0..1	MAY		1198-5264	
recordTarget	1..*	SHALL		1198-5266	
patientRole	1..1	SHALL		1198-5267	
id	1..*	SHALL		1198-5268	
addr	1..*	SHALL		1198-5271	US Realm Address (AD.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2

telecom	1..*	SHALL		1198-5280	
@use	0..1	SHOULD		1198-5375	urn:oid:2.16.840.1.113883.11.20.9.20 (Telecom Use (US Realm Header))
patient	1..1	SHALL		1198-5283	
name	1..*	SHALL		1198-5284	US Realm Person Name (PN.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1
administrativeGenderCode	1..1	SHALL		1198-6394	urn:oid:2.16.840.1.113883.1.11.1 (Administrative Gender (HL7 V3))
birthTime	1..1	SHALL		1198-5298	
maritalStatusCode	0..1	SHOULD		1198-5303	urn:oid:2.16.840.1.113883.1.11.12212 (Marital Status)
religiousAffiliationCode	0..1	MAY		1198-5317	urn:oid:2.16.840.1.113883.1.11.19185 (Religious Affiliation)
raceCode	1..1	SHALL		1198-5322	urn:oid:2.16.840.1.113883.3.2074.1.1.3 (Race Category Excluding Nulls)
sdtc:raceCode	0..*	MAY		1198-7263	urn:oid:2.16.840.1.113883.1.11.14914 (Race)
ethnicGroupCode	1..1	SHALL		1198-5323	urn:oid:2.16.840.1.114222.4.11.837 (Ethnicity)
sdtc:ethnicGroupCode	0..*	MAY		1198-32901	urn:oid:2.16.840.1.114222.4.11.877 (Detailed Ethnicity)
guardian	0..*	MAY		1198-5325	
code	0..1	SHOULD		1198-5326	urn:oid:2.16.840.1.113883.11.20.12.1 (Personal And Legal Relationship Role Type)
addr	0..*	SHOULD		1198-5359	US Realm Address (AD.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2
telecom	0..*	SHOULD		1198-5382	
@use	0..1	SHOULD		1198-7993	urn:oid:2.16.840.1.113883.11.20.9.20 (Telecom Use (US Realm Header))
guardianPerson	1..1	SHALL		1198-5385	
name	1..*	SHALL		1198-5386	US Realm Person Name (PN.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1

birthplace	0..1	MAY		1198-5395	
place	1..1	SHALL		1198-5396	
addr	1..1	SHALL		1198-5397	
country	0..1	SHOULD		1198-5404	urn:oid:2.16.840.1.113883.3.88.12.80.63 (Country)
postalCode	0..1	MAY		1198-5403	urn:oid:2.16.840.1.113883.3.88.12.80.2 (PostalCode)
languageCommunication	0..*	SHOULD		1198-5406	
languageCode	1..1	SHALL		1198-5407	urn:oid:2.16.840.1.113883.1.11.11526 (Language)
modeCode	0..1	MAY		1198-5409	urn:oid:2.16.840.1.113883.1.11.12249 (LanguageAbilityMode)
proficiencyLevelCode	0..1	SHOULD		1198-9965	urn:oid:2.16.840.1.113883.1.11.12199 (LanguageAbilityProficiency)
preferenceInd	0..1	SHOULD		1198-5414	
providerOrganization	0..1	MAY		1198-5416	
id	1..*	SHALL		1198-5417	
@root	0..1	SHOULD		1198-16820	2.16.840.1.113883.4.6
name	1..*	SHALL		1198-5419	
telecom	1..*	SHALL		1198-5420	
@use	0..1	SHOULD		1198-7994	urn:oid:2.16.840.1.113883.11.20.9.20 (Telecom Use (US Realm Header))
addr	1..*	SHALL		1198-5422	US Realm Address (AD.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2
author	1..*	SHALL		1198-5444	
time	1..1	SHALL		1198-5445	US Realm Date and Time (DTM.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.4
assignedAuthor	1..1	SHALL		1198-5448	
id	1..*	SHALL		1198-5449	

id	0..1	SHOULD		1198-32882	
@nullFlavor	0..1	MAY		1198-32883	urn:oid:2.16.840.1.113883.5.1008 (HL7NullFlavor) = UNK
@root	1..1	SHALL		1198-32884	2.16.840.1.113883.4.6
@extension	0..1	SHOULD		1198-32885	
code	0..1	SHOULD		1198-16787	
@code	1..1	SHALL		1198-16788	urn:oid:2.16.840.1.114222.4.11.1066 (Healthcare Provider Taxonomy (HIPAA))
addr	1..*	SHALL		1198-5452	US Realm Address (AD.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2
telecom	1..*	SHALL		1198-5428	
@use	0..1	SHOULD		1198-7995	urn:oid:2.16.840.1.113883.11.20.9.20 (Telecom Use (US Realm Header))
assignedPerson	0..1	SHOULD		1198-5430	
name	1..*	SHALL		1198-16789	US Realm Person Name (PN.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1
assignedAuthoringDevice	0..1	SHOULD		1198-16783	
manufacturerModelName	1..1	SHALL		1198-16784	
softwareName	1..1	SHALL		1198-16785	
dataEnterer	0..1	MAY		1198-5441	
assignedEntity	1..1	SHALL		1198-5442	
id	1..*	SHALL		1198-5443	
@root	0..1	SHOULD		1198-16821	2.16.840.1.113883.4.6
code	0..1	MAY		1198-32173	urn:oid:2.16.840.1.114222.4.11.1066 (Healthcare Provider Taxonomy (HIPAA))
addr	1..*	SHALL		1198-5460	US Realm Address (AD.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2

telecom	1..*	SHALL		1198-5466	
@use	0..1	SHOULD		1198-7996	urn:oid:2.16.840.1.113883.11.20.9.20 (Telecom Use (US Realm Header))
assignedPerson	1..1	SHALL		1198-5469	
name	1..*	SHALL		1198-5470	US Realm Person Name (PN.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1
informant	0..*	MAY		1198-8001	
assignedEntity	1..1	SHALL		1198-8002	
id	1..*	SHALL		1198-9945	
code	0..1	MAY		1198-32174	urn:oid:2.16.840.1.114222.4.11.1066 (Healthcare Provider Taxonomy (HIPAA))
addr	1..*	SHALL		1198-8220	US Realm Address (AD.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2
assignedPerson	1..1	SHALL		1198-8221	
name	1..*	SHALL		1198-8222	US Realm Person Name (PN.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1
informant	0..*	MAY		1198-31355	
relatedEntity	1..1	SHALL		1198-31356	
custodian	1..1	SHALL		1198-5519	
assignedCustodian	1..1	SHALL		1198-5520	
representedCustodianOrganization	1..1	SHALL		1198-5521	
id	1..*	SHALL		1198-5522	
@root	0..1	SHOULD		1198-16822	2.16.840.1.113883.4.6
name	1..1	SHALL		1198-5524	
telecom	1..1	SHALL		1198-5525	

@use	0..1	SHOULD		1198-7998	urn:oid:2.16.840.1.113883.11.20.9.20 (Telecom Use (US Realm Header))
addr	1..1	SHALL		1198-5559	US Realm Address (AD.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2
informationRecipient	0..*	MAY		1198-5565	
intendedRecipient	1..1	SHALL		1198-5566	
id	0..*	MAY		1198-32399	
informationRecipient	0..1	MAY		1198-5567	
name	1..*	SHALL		1198-5568	US Realm Person Name (PN.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1
receivedOrganization	0..1	MAY		1198-5577	
name	1..1	SHALL		1198-5578	
legalAuthenticator	0..1	SHOULD		1198-5579	
time	1..1	SHALL		1198-5580	US Realm Date and Time (DTM.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.4
signatureCode	1..1	SHALL		1198-5583	
@code	1..1	SHALL		1198-5584	urn:oid:2.16.840.1.113883.5.89 (HL7ParticipationSignature) = S
sdtc:signatureText	0..1	MAY		1198-30810	
assignedEntity	1..1	SHALL		1198-5585	
id	1..*	SHALL		1198-5586	
@root	0..1	MAY		1198-16823	2.16.840.1.113883.4.6
code	0..1	MAY		1198-17000	urn:oid:2.16.840.1.114222.4.11.1066 (Healthcare Provider Taxonomy (HIPAA))
addr	1..*	SHALL		1198-5589	US Realm Address (AD.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2
telecom	1..*	SHALL		1198-	

				5595	
@use	0..1	SHOULD		1198-7999	urn:oid:2.16.840.1.113883.11.20.9.20 (Telecom Use (US Realm Header))
assignedPerson	1..1	SHALL		1198-5597	
name	1..*	SHALL		1198-5598	US Realm Person Name (PN.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1
authenticator	0..*	MAY		1198-5607	
time	1..1	SHALL		1198-5608	US Realm Date and Time (DTM.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.4
signatureCode	1..1	SHALL		1198-5610	
@code	1..1	SHALL		1198-5611	urn:oid:2.16.840.1.113883.5.89 (HL7ParticipationSignature) = S
sdtc:signatureText	0..1	MAY		1198-30811	
assignedEntity	1..1	SHALL		1198-5612	
id	1..*	SHALL		1198-5613	
@root	0..1	SHOULD		1198-16824	2.16.840.1.113883.4.6
code	0..1	MAY		1198-16825	
@code	0..1	MAY		1198-16826	urn:oid:2.16.840.1.114222.4.11.1066 (Healthcare Provider Taxonomy (HIPAA))
addr	1..*	SHALL		1198-5616	US Realm Address (AD.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2
telecom	1..*	SHALL		1198-5622	
@use	0..1	SHOULD		1198-8000	urn:oid:2.16.840.1.113883.11.20.9.20 (Telecom Use (US Realm Header))
assignedPerson	1..1	SHALL		1198-5624	
name	1..*	SHALL		1198-5625	US Realm Person Name (PN.US.FIELDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1
participant	0..*	MAY		1198-	

				10003	
time	0..1	MAY		1198-10004	
inFulfillmentOf	0..*	MAY		1198-9952	
order	1..1	SHALL		1198-9953	
id	1..*	SHALL		1198-9954	
documentationOf	0..*	MAY		1198-14835	
serviceEvent	1..1	SHALL		1198-14836	
effectiveTime	1..1	SHALL		1198-14837	
low	1..1	SHALL		1198-14838	
performer	0..*	SHOULD		1198-14839	
@typeCode	1..1	SHALL		1198-14840	urn:oid:2.16.840.1.113883.1.11.19601 (x_ServiceEventPerformer)
functionCode	0..1	MAY		1198-16818	
@code	0..1	SHOULD		1198-32889	urn:oid:2.16.840.1.113883.1.11.10267 (ParticipationFunction)
assignedEntity	1..1	SHALL		1198-14841	
id	1..*	SHALL		1198-14846	
@root	0..1	SHOULD		1198-14847	2.16.840.1.113883.4.6
code	0..1	SHOULD		1198-14842	urn:oid:2.16.840.1.114222.4.11.1066 (Healthcare Provider Taxonomy (HIPAA))
authorization	0..*	MAY		1198-16792	
consent	1..1	SHALL		1198-16793	
id	0..*	MAY		1198-16794	
code	0..1	MAY		1198-16795	
statusCode	1..1	SHALL		1198-16797	
@code	1..1	SHALL		1198-16798	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = completed
componentOf	0..1	MAY		1198-	

				9955	
encompassingEncounter	1..1	SHALL		1198-9956	
id	1..*	SHALL		1198-9959	
effectiveTime	1..1	SHALL		1198-9958	

5.2.1 Properties

5.2.1.1 realmCode

8. **SHALL** contain exactly one [1..1] **realmCode**="US" (CONF:1198-16791).
9. **SHALL** contain exactly one [1..1] **typeId** (CONF:1198-5361).
    a. This typeId **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.1.3" (CONF:1198-5250).
    b. This typeId **SHALL** contain exactly one [1..1] **@extension**="POCD_HD000040" (CONF:1198-5251).
10. **SHALL** contain exactly one [1..1] **templateId** (CONF:1198-5252) such that it
    a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.1.1" (CONF:1198-10036).
    b. **SHALL** contain exactly one [1..1] **@extension**="2015-08-01" (CONF:1198-32503).
11. **SHALL** contain exactly one [1..1] **id** (CONF:1198-5363).
    a. This id **SHALL** be a globally unique identifier for the document (CONF:1198-9991).
12. **SHALL** contain exactly one [1..1] **code** (CONF:1198-5253).
    a. This code **SHALL** specify the particular kind of document (e.g., History and Physical, Discharge Summary, Progress Note) (CONF:1198-9992).
13. **SHALL** contain exactly one [1..1] **title** (CONF:1198-5254).
    Note: The title can either be a locally defined name or the displayName corresponding to clinicalDocument/code
14. **SHALL** contain exactly one [1..1] **US Realm Date and Time (DTM.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.4) (CONF:1198-5256).
15. **SHALL** contain exactly one [1..1] **confidentialityCode**, which **SHOULD** be selected from ValueSet **HL7 BasicConfidentialityKind** urn:oid:2.16.840.1.113883.1.11.16926 **STATIC** (CONF:1198-5259).
16. **SHALL** contain exactly one [1..1] **languageCode**, which **SHALL** be selected from ValueSet **Language** urn:oid:2.16.840.1.113883.1.11.11526 **DYNAMIC** (CONF:1198-5372).
17. **MAY** contain zero or one [0..1] **setId** (CONF:1198-5261).
    a. If setId is present versionNumber **SHALL** be present (CONF:1198-6380).
18. **MAY** contain zero or one [0..1] **versionNumber** (CONF:1198-5264).
    a. If versionNumber is present setId **SHALL** be present (CONF:1198-6387).

5.2.1.2 recordTarget

The recordTarget records the administrative and demographic data of the patient whose health information is described by the clinical document; each recordTarget must contain at least one patientRole element

19. **SHALL** contain at least one [1..*] **recordTarget** (CONF:1198-5266).
    a. Such recordTargets **SHALL** contain exactly one [1..1] **patientRole** (CONF:1198-5267).
        i. This patientRole **SHALL** contain at least one [1..*] **id** (CONF:1198-5268).
        ii. This patientRole **SHALL** contain at least one [1..*] **US Realm Address (AD.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2) (CONF:1198-5271).
        iii. This patientRole **SHALL** contain at least one [1..*] **telecom** (CONF:1198-5280).
            1. Such telecoms **SHOULD** contain zero or one [0..1] **@use**, which **SHALL** be selected from ValueSet **Telecom Use (US Realm Header)** urn:oid:2.16.840.1.113883.11.20.9.20 **DYNAMIC** (CONF:1198-5375).
        iv. This patientRole **SHALL** contain exactly one [1..1] **patient** (CONF:1198-5283).
            1. This patient **SHALL** contain at least one [1..*] **US Realm Person Name (PN.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1) (CONF:1198-5284).
            2. This patient **SHALL** contain exactly one [1..1] **administrativeGenderCode**, which **SHALL** be selected from ValueSet **Administrative Gender (HL7 V3)** urn:oid:2.16.840.1.113883.1.11.1 **DYNAMIC** (CONF:1198-6394).
            3. This patient **SHALL** contain exactly one [1..1] **birthTime** (CONF:1198-5298).
                a. **SHALL** be precise to year (CONF:1198-5299).
                b. **SHOULD** be precise to day (CONF:1198-5300).

For cases where information about newborn's time of birth needs to be captured.

                c. **MAY** be precise to the minute (CONF:1198-32418).

            4. This patient **SHOULD** contain zero or one [0..1] **maritalStatusCode**, which **SHALL** be selected from ValueSet **Marital Status** urn:oid:2.16.840.1.113883.1.11.12212 **DYNAMIC** (CONF:1198-5303).
            5. This patient **MAY** contain zero or one [0..1] **religiousAffiliationCode**, which **SHALL** be selected from ValueSet **Religious Affiliation** urn:oid:2.16.840.1.113883.1.11.19185 **DYNAMIC** (CONF:1198-5317).
            6. This patient **SHALL** contain exactly one [1..1] **raceCode**, which **SHALL** be selected from ValueSet **Race Category Excluding Nulls**

urn:oid:2.16.840.1.113883.3.2074.1.1.3 **DYNAMIC** (CONF:1198-5322).

7. This patient **MAY** contain zero or more [0..*] **sdtc:raceCode**, which **SHALL** be selected from ValueSet **Race** urn:oid:2.16.840.1.113883.1.11.14914 **DYNAMIC** (CONF:1198-7263).
   Note: The sdtc:raceCode is only used to record additional values when the patient has indicated multiple races or additional race detail beyond the five categories required for Meaningful Use Stage 2. The prefix sdtc: SHALL be bound to the namespace "urn:hl7-org:sdtc". The use of the namespace provides a necessary extension to CDA R2 for the use of the additional raceCode elements.
   a. If sdtc:raceCode is present, then the patient **SHALL** contain [1..1] raceCode (CONF:1198-31347).
8. This patient **SHALL** contain exactly one [1..1] **ethnicGroupCode**, which **SHALL** be selected from ValueSet **Ethnicity** urn:oid:2.16.840.1.114222.4.11.837 **DYNAMIC** (CONF:1198-5323).
9. This patient **MAY** contain zero or more [0..*] **sdtc:ethnicGroupCode**, which **SHALL** be selected from ValueSet **Detailed Ethnicity** urn:oid:2.16.840.1.114222.4.11.877 **DYNAMIC** (CONF:1198-32901).
10. This patient **MAY** contain zero or more [0..*] **guardian** (CONF:1198-5325).
    a. The guardian, if present, **SHOULD** contain zero or one [0..1] **code**, which **SHALL** be selected from ValueSet **Personal And Legal Relationship Role Type** urn:oid:2.16.840.1.113883.11.20.12.1 **DYNAMIC** (CONF:1198-5326).
    b. The guardian, if present, **SHOULD** contain zero or more [0..*] **US Realm Address (AD.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2) (CONF:1198-5359).
    c. The guardian, if present, **SHOULD** contain zero or more [0..*] **telecom** (CONF:1198-5382).
       i. The telecom, if present, **SHOULD** contain zero or one [0..1] **@use**, which **SHALL** be selected from ValueSet **Telecom Use (US Realm Header)** urn:oid:2.16.840.1.113883.11.20.9.20 **DYNAMIC** (CONF:1198-7993).
    d. The guardian, if present, **SHALL** contain exactly one [1..1] **guardianPerson** (CONF:1198-5385).
       i. This guardianPerson **SHALL** contain at least one [1..*] **US Realm Person Name (PN.US.FIELDED)** (identifier:

urn:oid:2.16.840.1.113883.10.20.22.5.1.1) (CONF:1198-5386).

11. This patient **MAY** contain zero or one [0..1] **birthplace** (CONF:1198-5395).
    a. The birthplace, if present, **SHALL** contain exactly one [1..1] **place** (CONF:1198-5396).
        i. This place **SHALL** contain exactly one [1..1] **addr** (CONF:1198-5397).
        1. This addr **SHOULD** contain zero or one [0..1] **country**, which **SHALL** be selected from ValueSet **Country** urn:oid:2.16.840.1.113883.3.88.12.80.63 **DYNAMIC** (CONF:1198-5404).
        2. This addr **MAY** contain zero or one [0..1] **postalCode**, which **SHALL** be selected from ValueSet **PostalCode** urn:oid:2.16.840.1.113883.3.88.12.80.2 **DYNAMIC** (CONF:1198-5403).
        3. If country is US, this addr **SHALL** contain exactly one [1..1] state, which **SHALL** be selected from ValueSet StateValueSet 2.16.840.1.113883.3.88.12.80.1 **DYNAMIC** (CONF:1198-5402).
        Note: A nullFlavor of ' UNK' may be used if the state is unknown.

12. This patient **SHOULD** contain zero or more [0..*] **languageCommunication** (CONF:1198-5406).
    a. The languageCommunication, if present, **SHALL** contain exactly one [1..1] **languageCode**, which **SHALL** be selected from ValueSet **Language** urn:oid:2.16.840.1.113883.1.11.11526 **DYNAMIC** (CONF:1198-5407).
    b. The languageCommunication, if present, **MAY** contain zero or one [0..1] **modeCode**, which **SHALL** be selected from ValueSet **LanguageAbilityMode** urn:oid:2.16.840.1.113883.1.11.12249 **DYNAMIC** (CONF:1198-5409).
    c. The languageCommunication, if present, **SHOULD** contain zero or one [0..1] **proficiencyLevelCode**, which **SHALL** be selected from ValueSet **LanguageAbilityProficiency** urn:oid:2.16.840.1.113883.1.11.12199 **DYNAMIC** (CONF:1198-9965).
    d. The languageCommunication, if present, **SHOULD** contain zero or one [0..1] **preferenceInd** (CONF:1198-5414).

v. This patientRole **MAY** contain zero or one [0..1] **providerOrganization** (CONF:1198-5416).
    1. The providerOrganization, if present, **SHALL** contain at least one [1..*] **id** (CONF:1198-5417).

a. Such ids **SHOULD** contain zero or one [0..1] **@root**="2.16.840.1.113883.4.6" National Provider Identifier (CONF:1198-16820).

2. The providerOrganization, if present, **SHALL** contain at least one [1..*] **name** (CONF:1198-5419).
3. The providerOrganization, if present, **SHALL** contain at least one [1..*] **telecom** (CONF:1198-5420).
    a. Such telecoms **SHOULD** contain zero or one [0..1] **@use**, which **SHALL** be selected from ValueSet **Telecom Use (US Realm Header)** urn:oid:2.16.840.1.113883.11.20.9.20 **DYNAMIC** (CONF:1198-7994).
4. The providerOrganization, if present, **SHALL** contain at least one [1..*] **US Realm Address (AD.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2) (CONF:1198-5422).

5.2.1.3 author

The author element represents the creator of the clinical document. The author may be a device or a person.

20. **SHALL** contain at least one [1..*] **author** (CONF:1198-5444).
    a. Such authors **SHALL** contain exactly one [1..1] **US Realm Date and Time (DTM.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.4) (CONF:1198-5445).
    b. Such authors **SHALL** contain exactly one [1..1] **assignedAuthor** (CONF:1198-5448).
        i. This assignedAuthor **SHALL** contain at least one [1..*] **id** (CONF:1198-5449).

If this assignedAuthor is an assignedPerson

        ii. This assignedAuthor **SHOULD** contain zero or one [0..1] **id** (CONF:1198-32882) such that it

If id with @root="2.16.840.1.113883.4.6" National Provider Identifier is unknown then

1. **MAY** contain zero or one [0..1] **@nullFlavor**="UNK" Unknown (CodeSystem: HL7NullFlavor urn:oid:2.16.840.1.113883.5.1008) (CONF:1198-32883).
2. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.4.6" National Provider Identifier (CONF:1198-32884).
3. **SHOULD** contain zero or one [0..1] **@extension** (CONF:1198-32885).

Only if this assignedAuthor is an assignedPerson should the assignedAuthor contain a code.

        iii. This assignedAuthor **SHOULD** contain zero or one [0..1] **code** (CONF:1198-16787).
            1. The code, if present, **SHALL** contain exactly one [1..1] **@code**, which **SHOULD** be selected from ValueSet **Healthcare Provider Taxonomy (HIPAA)** urn:oid:2.16.840.1.114222.4.11.1066 **DYNAMIC** (CONF:1198-16788).

iv. This assignedAuthor **SHALL** contain at least one [1..*] **US Realm Address (AD.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2) (CONF:1198-5452).

v. This assignedAuthor **SHALL** contain at least one [1..*] **telecom** (CONF:1198-5428).

1. Such telecoms **SHOULD** contain zero or one [0..1] **@use**, which **SHALL** be selected from ValueSet **Telecom Use (US Realm Header)** urn:oid:2.16.840.1.113883.11.20.9.20 **DYNAMIC** (CONF:1198-7995).

vi. This assignedAuthor **SHOULD** contain zero or one [0..1] **assignedPerson** (CONF:1198-5430).

1. The assignedPerson, if present, **SHALL** contain at least one [1..*] **US Realm Person Name (PN.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1) (CONF:1198-16789).

vii. This assignedAuthor **SHOULD** contain zero or one [0..1] **assignedAuthoringDevice** (CONF:1198-16783).

1. The assignedAuthoringDevice, if present, **SHALL** contain exactly one [1..1] **manufacturerModelName** (CONF:1198-16784).
2. The assignedAuthoringDevice, if present, **SHALL** contain exactly one [1..1] **softwareName** (CONF:1198-16785).

viii. There **SHALL** be exactly one assignedAuthor/assignedPerson or exactly one assignedAuthor/assignedAuthoringDevice (CONF:1198-16790).

5.2.1.4 dataEnterer

The dataEnterer element represents the person who transferred the content, written or dictated, into the clinical document. To clarify, an author provides the content found within the header or body of a document, subject to their own interpretation; a dataEnterer adds an author's information to the electronic system.

21. **MAY** contain zero or one [0..1] **dataEnterer** (CONF:1198-5441).

a. The dataEnterer, if present, **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:1198-5442).

i. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:1198-5443).

1. Such ids **SHOULD** contain zero or one [0..1] **@root="**2.16.840.1.113883.4.6**"** National Provider Identifier (CONF:1198-16821).

ii. This assignedEntity **MAY** contain zero or one [0..1] **code**, which **SHOULD** be selected from ValueSet **Healthcare Provider Taxonomy (HIPAA)** urn:oid:2.16.840.1.114222.4.11.1066 **DYNAMIC** (CONF:1198-32173).

iii. This assignedEntity **SHALL** contain at least one [1..*] **US Realm Address (AD.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2) (CONF:1198-5460).

iv. This assignedEntity **SHALL** contain at least one [1..*] **telecom** (CONF:1198-5466).

1. Such telecoms **SHOULD** contain zero or one [0..1] **@use**, which **SHALL** be selected from ValueSet **Telecom Use (US Realm Header)** urn:oid:2.16.840.1.113883.11.20.9.20 **DYNAMIC** (CONF:1198-7996).

v. This assignedEntity **SHALL** contain exactly one [1..1] **assignedPerson** (CONF:1198-5469).

1. This assignedPerson **SHALL** contain at least one [1..*] **US Realm Person Name (PN.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1) (CONF:1198-5470).

5.2.1.5 informant

The informant element describes an information source for any content within the clinical document. This informant is constrained for use when the source of information is an assigned health care provider for the patient.

22. **MAY** contain zero or more [0..*] **informant** (CONF:1198-8001) such that it

a. **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:1198-8002).

i. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:1198-9945).

1. If assignedEntity/id is a provider then this id, **SHOULD** include zero or one [0..1] id where id/@root ="2.16.840.1.113883.4.6" National Provider Identifier (CONF:1198-9946).

ii. This assignedEntity **MAY** contain zero or one [0..1] **code**, which **SHOULD** be selected from ValueSet **Healthcare Provider Taxonomy (HIPAA)** urn:oid:2.16.840.1.114222.4.11.1066 **DYNAMIC** (CONF:1198-32174).

iii. This assignedEntity **SHALL** contain at least one [1..*] **US Realm Address (AD.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2) (CONF:1198-8220).

iv. This assignedEntity **SHALL** contain exactly one [1..1] **assignedPerson** (CONF:1198-8221).

1. This assignedPerson **SHALL** contain at least one [1..*] **US Realm Person Name (PN.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1) (CONF:1198-8222).

5.2.1.6 informant

The informant element describes an information source (who is not a provider) for any content within the clinical document. This informant would be used when the source of information has a personal relationship with the patient or is the patient.

23. **MAY** contain zero or more [0..*] **informant** (CONF:1198-31355) such that it

a. **SHALL** contain exactly one [1..1] **relatedEntity** (CONF:1198-31356).

5.2.1.7 custodian

The custodian element represents the organization that is in charge of maintaining and is entrusted with the care of the document.

There is only one custodian per CDA document. Allowing that a CDA document may not represent the original form of the authenticated document, the custodian represents the steward of the original source document. The custodian may be the document originator, a health information exchange, or other responsible party.

24. **SHALL** contain exactly one [1..1] **custodian** (CONF:1198-5519).
    a. This custodian **SHALL** contain exactly one [1..1] **assignedCustodian** (CONF:1198-5520).
        i. This assignedCustodian **SHALL** contain exactly one [1..1] **representedCustodianOrganization** (CONF:1198-5521).
            1. This representedCustodianOrganization **SHALL** contain at least one [1..*] **id** (CONF:1198-5522).
                a. Such ids **SHOULD** contain zero or one [0..1] **@root**="2.16.840.1.113883.4.6" National Provider Identifier (CONF:1198-16822).
            2. This representedCustodianOrganization **SHALL** contain exactly one [1..1] **name** (CONF:1198-5524).
            3. This representedCustodianOrganization **SHALL** contain exactly one [1..1] **telecom** (CONF:1198-5525).
                a. This telecom **SHOULD** contain zero or one [0..1] **@use**, which **SHALL** be selected from ValueSet **Telecom Use (US Realm Header)** urn:oid:2.16.840.1.113883.11.20.9.20 **DYNAMIC** (CONF:1198-7998).
            4. This representedCustodianOrganization **SHALL** contain exactly one [1..1] **US Realm Address (AD.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2) (CONF:1198-5559).

5.2.1.8 informationRecipient

The informationRecipient element records the intended recipient of the information at the time the document was created. In cases where the intended recipient of the document is the patient's health chart, set the receivedOrganization to the scoping organization for that chart.

25. **MAY** contain zero or more [0..*] **informationRecipient** (CONF:1198-5565).
    a. The informationRecipient, if present, **SHALL** contain exactly one [1..1] **intendedRecipient** (CONF:1198-5566).
        i. This intendedRecipient **MAY** contain zero or more [0..*] **id** (CONF:1198-32399).
        ii. This intendedRecipient **MAY** contain zero or one [0..1] **informationRecipient** (CONF:1198-5567).
            1. The informationRecipient, if present, **SHALL** contain at least one [1..*] **US Realm Person Name (PN.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1) (CONF:1198-5568).

iii. This intendedRecipient **MAY** contain zero or one [0..1] **receivedOrganization** (CONF:1198-5577).

1. The receivedOrganization, if present, **SHALL** contain exactly one [1..1] **name** (CONF:1198-5578).

5.2.1.9 legalAuthenticator

The legalAuthenticator identifies the single person legally responsible for the document and must be present if the document has been legally authenticated. A clinical document that does not contain this element has not been legally authenticated.

The act of legal authentication requires a certain privilege be granted to the legal authenticator depending upon local policy. Based on local practice, clinical documents may be released before legal authentication.

All clinical documents have the potential for legal authentication, given the appropriate credentials.

Local policies MAY choose to delegate the function of legal authentication to a device or system that generates the clinical document. In these cases, the legal authenticator is a person accepting responsibility for the document, not the generating device or system.

Note that the legal authenticator, if present, must be a person.

26. **SHOULD** contain zero or one [0..1] **legalAuthenticator** (CONF:1198-5579).
    a. The legalAuthenticator, if present, **SHALL** contain exactly one [1..1] **US Realm Date and Time (DTM.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.4) (CONF:1198-5580).
    b. The legalAuthenticator, if present, **SHALL** contain exactly one [1..1] **signatureCode** (CONF:1198-5583).
        i. This signatureCode **SHALL** contain exactly one [1..1] **@code**="S" (CodeSystem: HL7ParticipationSignature urn:oid:2.16.840.1.113883.5.89 **STATIC**) (CONF:1198-5584).

5.2.1.10 sdtc:signatureText

The sdtc:signatureText extension provides a location in CDA for a textual or multimedia depiction of the signature by which the participant endorses and accepts responsibility for his or her participation in the Act as specified in the Participation.typeCode. Details of what goes in the field are described in the HL7 CDA Digital Signature Standard balloted in Fall 2013.

    c. The legalAuthenticator, if present, **MAY** contain zero or one [0..1] **sdtc:signatureText** (CONF:1198-30810).
    Note: The signature can be represented either inline or by reference according to the ED data type. Typical cases for CDA are:
    1) Electronic signature: this attribute can represent virtually any electronic signature scheme.
    2) Digital signature: this attribute can represent digital signatures by reference to a signature data block that is constructed in accordance to a digital signature standard, such as XML-DSIG, PKCS#7, PGP, etc.

d. The legalAuthenticator, if present, **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:1198-5585).
    i. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:1198-5586).
        1. Such ids **MAY** contain zero or one [0..1] **@root**="2.16.840.1.113883.4.6" National Provider Identifier (CONF:1198-16823).
    ii. This assignedEntity **MAY** contain zero or one [0..1] **code**, which **SHOULD** be selected from ValueSet **Healthcare Provider Taxonomy (HIPAA)** urn:oid:2.16.840.1.114222.4.11.1066 **DYNAMIC** (CONF:1198-17000).
    iii. This assignedEntity **SHALL** contain at least one [1..*] **US Realm Address (AD.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2) (CONF:1198-5589).
    iv. This assignedEntity **SHALL** contain at least one [1..*] **telecom** (CONF:1198-5595).
        1. Such telecoms **SHOULD** contain zero or one [0..1] **@use**, which **SHALL** be selected from ValueSet **Telecom Use (US Realm Header)** urn:oid:2.16.840.1.113883.11.20.9.20 **DYNAMIC** (CONF:1198-7999).
    v. This assignedEntity **SHALL** contain exactly one [1..1] **assignedPerson** (CONF:1198-5597).
        1. This assignedPerson **SHALL** contain at least one [1..*] **US Realm Person Name (PN.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1) (CONF:1198-5598).

5.2.1.11 authenticator

The authenticator identifies a participant or participants who attest to the accuracy of the information in the document.

27. **MAY** contain zero or more [0..*] **authenticator** (CONF:1198-5607) such that it
    a. **SHALL** contain exactly one [1..1] **US Realm Date and Time (DTM.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.4) (CONF:1198-5608).
    b. **SHALL** contain exactly one [1..1] **signatureCode** (CONF:1198-5610).
        i. This signatureCode **SHALL** contain exactly one [1..1] **@code**="S" (CodeSystem: HL7ParticipationSignature urn:oid:2.16.840.1.113883.5.89 **STATIC**) (CONF:1198-5611).

The sdtc:signatureText extension provides a location in CDA for a textual or multimedia depiction of the signature by which the participant endorses and accepts responsibility for his or her participation in the Act as specified in the Participation.typeCode. Details of what goes in the field are described in the HL7 CDA Digital Signature Standard balloted in Fall of 2013.

    c. **MAY** contain zero or one [0..1] **sdtc:signatureText** (CONF:1198-30811).
    Note: The signature can be represented either inline or by reference according to the ED data type. Typical cases for CDA are:
    1) Electronic signature: this attribute can represent virtually any electronic signature scheme.

2) Digital signature: this attribute can represent digital signatures by reference to a signature data block that is constructed in accordance to a digital signature standard, such as XML-DSIG, PKCS#7, PGP, etc.

d. **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:1198-5612).
   i. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:1198-5613).
      1. Such ids **SHOULD** contain zero or one [0..1] **@root**="2.16.840.1.113883.4.6" National Provider Identifier (CONF:1198-16824).
   ii. This assignedEntity **MAY** contain zero or one [0..1] **code** (CONF:1198-16825).
      1. The code, if present, **MAY** contain zero or one [0..1] **@code**, which **SHOULD** be selected from ValueSet **Healthcare Provider Taxonomy (HIPAA)** urn:oid:2.16.840.1.114222.4.11.1066 **STATIC** (CONF:1198-16826).
   iii. This assignedEntity **SHALL** contain at least one [1..*] **US Realm Address (AD.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2) (CONF:1198-5616).
   iv. This assignedEntity **SHALL** contain at least one [1..*] **telecom** (CONF:1198-5622).
      1. Such telecoms **SHOULD** contain zero or one [0..1] **@use**, which **SHALL** be selected from ValueSet **Telecom Use (US Realm Header)** urn:oid:2.16.840.1.113883.11.20.9.20 **DYNAMIC** (CONF:1198-8000).
   v. This assignedEntity **SHALL** contain exactly one [1..1] **assignedPerson** (CONF:1198-5624).
      1. This assignedPerson **SHALL** contain at least one [1..*] **US Realm Person Name (PN.US.FIELDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1) (CONF:1198-5625).

5.2.1.12 participant

The participant element identifies supporting entities, including parents, relatives, caregivers, insurance policyholders, guarantors, and others related in some way to the patient.

A supporting person or organization is an individual or an organization with a relationship to the patient. A supporting person who is playing multiple roles would be recorded in multiple participants (e.g., emergency contact and next-of-kin).

28. **MAY** contain zero or more [0..*] **participant** (CONF:1198-10003) such that it
   a. **MAY** contain zero or one [0..1] **time** (CONF:1198-10004).
   b. **SHALL** contain associatedEntity/associatedPerson **AND/OR** associatedEntity/scopingOrganization (CONF:1198-10006).
   c. When participant/@typeCode is **IND**, associatedEntity/@classCode **SHOULD** be selected from ValueSet 2.16.840.1.113883.11.20.9.33 INDRoleclassCodes **STATIC 2011-09-30** (CONF:1198-10007).

5.2.1.13 inFulfillmentOf

The inFulfillmentOf element represents orders that are fulfilled by this document such as a radiologists' report of an x-ray.

29. **MAY** contain zero or more [0..*] **inFulfillmentOf** (CONF:1198-9952).
    a. The inFulfillmentOf, if present, **SHALL** contain exactly one [1..1] **order** (CONF:1198-9953).
        i. This order **SHALL** contain at least one [1..*] **id** (CONF:1198-9954).

5.2.1.14 documentationOf

30. **MAY** contain zero or more [0..*] **documentationOf** (CONF:1198-14835).

A serviceEvent represents the main act being documented, such as a colonoscopy or a cardiac stress study. In a provision of healthcare serviceEvent, the care providers, PCP, or other longitudinal providers, are recorded within the serviceEvent. If the document is about a single encounter, the providers associated can be recorded in the componentOf/encompassingEncounter template.

    a. The documentationOf, if present, **SHALL** contain exactly one [1..1] **serviceEvent** (CONF:1198-14836).
        i. This serviceEvent **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1198-14837).
            1. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1198-14838).

5.2.1.15 performer

The performer participant represents clinicians who actually and principally carry out the serviceEvent. In a transfer of care this represents the healthcare providers involved in the current or pertinent historical care of the patient. Preferably, the patient's key healthcare care team members would be listed, particularly their primary physician and any active consulting physicians, therapists, and counselors.

        ii. This serviceEvent **SHOULD** contain zero or more [0..*] **performer** (CONF:1198-14839).
            1. The performer, if present, **SHALL** contain exactly one [1..1] **@typeCode**, which **SHALL** be selected from ValueSet **x_ServiceEventPperformer** urn:oid:2.16.840.1.113883.1.11.19601 **STATIC** (CONF:1198-14840).
            2. The performer, if present, **MAY** contain zero or one [0..1] **functionCode** (CONF:1198-16818).
                a. The functionCode, if present, **SHOULD** contain zero or one [0..1] **@code**, which **SHOULD** be selected from ValueSet **ParticipationFunction** urn:oid:2.16.840.1.113883.1.11.10267 **STATIC** (CONF:1198-32889).

3. The performer, if present, **SHALL** contain exactly one [1..1] **assignedEntity** (CONF:1198-14841).
    a. This assignedEntity **SHALL** contain at least one [1..*] **id** (CONF:1198-14846).
        i. Such ids **SHOULD** contain zero or one [0..1] **@root="**2.16.840.1.113883.4.6**"** National Provider Identifier (CONF:1198-14847).
    b. This assignedEntity **SHOULD** contain zero or one [0..1] **code**, which **SHOULD** be selected from ValueSet **Healthcare Provider Taxonomy (HIPAA)** urn:oid:2.16.840.1.114222.4.11.1066 **DYNAMIC** (CONF:1198-14842).

5.2.1.16 authorization

The authorization element represents information about the patient's consent.

The type of consent is conveyed in consent/code. Consents in the header have been finalized (consent/statusCode must equal Completed) and should be on file. This specification does not address how 'Privacy Consent' is represented, but does not preclude the inclusion of 'Privacy Consent'.

The authorization consent is used for referring to consents that are documented elsewhere in the EHR or medical record for a health condition and/or treatment that is described in the CDA document.

31. **MAY** contain zero or more [0..*] **authorization** (CONF:1198-16792) such that it
    a. **SHALL** contain exactly one [1..1] **consent** (CONF:1198-16793).
        i. This consent **MAY** contain zero or more [0..*] **id** (CONF:1198-16794).
        ii. This consent **MAY** contain zero or one [0..1] **code** (CONF:1198-16795). Note: The type of consent (e.g., a consent to perform the related serviceEvent) is conveyed in consent/code.
        iii. This consent **SHALL** contain exactly one [1..1] **statusCode** (CONF:1198-16797).
            1. This statusCode **SHALL** contain exactly one [1..1] **@code="**completed**"** Completed (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:1198-16798).

5.2.1.17 componentOf

The encompassing encounter represents the setting of the clinical encounter during which the document act(s) or ServiceEvent(s) occurred. In order to represent providers associated with a specific encounter, they are recorded within the encompassingEncounter as participants. In a CCD, the encompassingEncounter may be used when documenting a specific encounter and its participants. All relevant encounters in a CCD may be listed in the encounters section.

32. **MAY** contain zero or one [0..1] **componentOf** (CONF:1198-9955).
    a. The componentOf, if present, **SHALL** contain exactly one [1..1] **encompassingEncounter** (CONF:1198-9956).

i. This encompassingEncounter **SHALL** contain at least one [1..*] **id** (CONF:1198-9959).

ii. This encompassingEncounter **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1198-9958).

Figure 11: US Realm Header (V3) Example

```
<ClinicalDocument>
    <realmCode code="US" />
    <typeId extension="POCD_HD000040" root="2.16.840.1.113883.1.3" />
    <!-- CCD template -->
    <templateId root="2.16.840.1.113883.10.20.22.1.1" extension="2015-08-01" />
    <!-- Globally unique identifier for the document  -->
    <id extension="TT988" root="2.16.840.1.113883.19.5.99999.1" />
    <code code="34133-9" displayName="Summarization of Episode Note"
codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" />
    <!-- Title of the document -->
    <title>Patient Chart Summary</title>
    <effectiveTime value="201209151030-0800" />
    <confidentialityCode code="N" displayName="normal" codeSystem="2.16.840.1.113883.5.25"
codeSystemName="Confidentiality" />
    <languageCode code="en-US" />
    <setId extension="sTT988" root="2.16.840.1.113883.19.5.99999.19" />
    <!-- Version of the document -->
    <versionNumber value="1" />
     . . .
</ClinicalDocument>
```

Figure 12: recordTarget Example

```
<recordTarget>
    <patientRole>
        <id extension="444-22-2222" root="2.16.840.1.113883.4.1" />
        <!-- Example Social Security Number using the actual SSN OID. -->
        <addr use="HP">
            <!-- HP is "primary home" from codeSystem 2.16.840.1.113883.5.1119 -->
            <streetAddressLine>2222 Home Street</streetAddressLine>
            <city>Beaverton</city>
            <state>OR</state>
            <postalCode>97867</postalCode>
            <country>US</country>
            <!-- US is "United States" from ISO 3166-1 Country Codes: 1.0.3166.1 -->
        </addr>
        <telecom value="tel:+1(555)555-2003" use="HP" />
        <!-- HP is "primary home" from HL7 AddressUse 2.16.840.1.113883.5.1119 -->
        <patient>
            <!-- The first name element represents what the patient is known as -->
            <name use="L">
                <given>Eve</given>
                <!-- The "SP" is "Spouse" from
                     HL7 Code System EntityNamePartQualifier 2.16.840.1.113883.5.43 -->
                <family qualifier="SP">Betterhalf</family>
            </name>
            <!-- The second name element represents another name
                 associated with the patient -->
            <name>
                <given>Eve</given>
                <!-- The "BR" is "Birth" from
                     HL7 Code System EntityNamePartQualifier 2.16.840.1.113883.5.43 -->
                <family qualifier="BR">Everywoman</family>
            </name>
            <administrativeGenderCode code="F" displayName="Female"
codeSystem="2.16.840.1.113883.5.1" codeSystemName="AdministrativeGender" />
            <!-- Date of birth need only be precise to the day -->
            <birthTime value="19750501" />
            <maritalStatusCode code="M" displayName="Married"
codeSystem="2.16.840.1.113883.5.2" codeSystemName="MaritalStatusCode" />
            <religiousAffiliationCode code="1013" displayName="Christian (non-Catholic,
non-specific)" codeSystem="2.16.840.1.113883.5.1076" codeSystemName="HL7 Religious
Affiliation" />
            <!-- CDC Race and Ethnicity code set contains the five minimum
                 race and ethnicity categories defined by OMB Standards -->
            <raceCode code="2106-3" displayName="White"
codeSystem="2.16.840.1.113883.6.238" codeSystemName="Race & Ethnicity - CDC" />
            <!-- The raceCode extension is only used if raceCode is valued -->
            <sdtc:raceCode code="2076-8" displayName="Hawaiian or Other Pacific Islander"
codeSystem="2.16.840.1.113883.6.238" codeSystemName="Race & Ethnicity - CDC" />
            <ethnicGroupCode code="2186-5" displayName="Not Hispanic or Latino"
codeSystem="2.16.840.1.113883.6.238" codeSystemName="Race & Ethnicity - CDC" />
            <guardian>
                <code code="POWATT" displayName="Power of Attorney"
codeSystem="2.16.840.1.113883.1.11.19830" codeSystemName="ResponsibleParty" />
                <addr use="HP">
                    <streetAddressLine>2222 Home Street</streetAddressLine>
                    <city>Beaverton</city>
```

```
                    <state>OR</state>
                    <postalCode>97867</postalCode>
                    <country>US</country>
                </addr>
                <telecom value="tel:+1(555)555-2008" use="MC" />
                <guardianPerson>
                    <name>
                        <given>Boris</given>
                        <given qualifier="CL">Bo</given>
                        <family>Betterhalf</family>
                    </name>
                </guardianPerson>
            </guardian>
            <birthplace>
                <place>
                    <addr>
                        <streetAddressLine>4444 Home Street</streetAddressLine>
                        <city>Beaverton</city>
                        <state>OR</state>
                        <postalCode>97867</postalCode>
                        <country>US</country>
                    </addr>
                </place>
            </birthplace>
            <languageCommunication>
                <languageCode code="eng" />
                <!-- "eng" is ISO 639-2 alpha-3 code for "English" -->
                <modeCode code="ESP" displayName="Expressed spoken"
codeSystem="2.16.840.1.113883.5.60" codeSystemName="LanguageAbilityMode" />
                <proficiencyLevelCode code="G" displayName="Good"
codeSystem="2.16.840.1.113883.5.61" codeSystemName="LanguageAbilityProficiency" />
                <!-- Patient's preferred language -->
                <preferenceInd value="true" />
            </languageCommunication>
        </patient>
        <providerOrganization>
            <id extension="219BX" root="1.1.1.1.1.1.1.1.2" />
            <name>The DoctorsTogether Physician Group</name>
            <telecom use="WP" value="tel: +(555)-555-5000" />
            <addr>
                <streetAddressLine>1007 Health Drive</streetAddressLine>
                <city>Portland</city>
                <state>OR</state>
                <postalCode>99123</postalCode>
                <country>US</country>
            </addr>
        </providerOrganization>
    </patientRole>
</recordTarget>
```


Figure 13: author Example

```
<author>
    <time value="201209151030-0800" />
    <assignedAuthor>
        <id extension="5555555555" root="2.16.840.1.113883.4.6" />
        <code code="163W00000X" displayName="Registered nurse"
codeSystem="2.16.840.1.113883.5.53" codeSystemName="Health Care Provider Taxonomy" />
        <addr>
            <streetAddressLine>1004 Healthcare Drive </streetAddressLine>
            <city>Portland</city>
            <state>OR</state>
            <postalCode>99123</postalCode>
            <country>US</country>
        </addr>
        <telecom use="WP" value="tel:+1(555)555-1004" />
        <assignedPerson>
            <name>
                <given>Patricia</given>
                <given qualifier="CL">Patty</given>
                <family>Primary</family>
                <suffix qualifier="AC">M.D.</suffix>
            </name>
        </assignedPerson>
    </assignedAuthor>
</author>
```

Figure 14: dateEnterer Example

```
<dataEnterer>
    <assignedEntity>
        <id extension="333777777" root="2.16.840.1.113883.4.6" />
        <addr>
            <streetAddressLine>1007 Healthcare Drive</streetAddressLine>
            <city>Portland</city>
            <state>OR</state>
            <postalCode>99123</postalCode>
            <country>US</country>
        </addr>
        <telecom use="WP" value="tel:+1(555)555-1050" />
        <assignedPerson>
            <name>
                <given>Ellen</given>
                <family>Enter</family>
            </name>
        </assignedPerson>
    </assignedEntity>
</dataEnterer>
```

Figure 15: Assigned Health Care Provider informant Example

```
<informant>
    <assignedEntity>
        <id extension="888888888" root="1.1.1.1.1.1.1.3" />
        <addr>
            <streetAddressLine>1007 Healthcare Drive</streetAddressLine>
            <city>Portland</city>
            <state>OR</state>
            <postalCode>99123</postalCode>
            <country>US</country>
        </addr>
        <telecom use="WP" value="tel:+1(555)555-1003" />
        <assignedPerson>
            <name>
                <given>Harold</given>
                <family>Hippocrates</family>
                <suffix qualifier="AC">M.D.</suffix>
            </name>
        </assignedPerson>
        <representedOrganization>
            <name>The DoctorsApart Physician Group</name>
        </representedOrganization>
    </assignedEntity>
</informant>
```

Figure 16: Personal Relation informant Example

```
<informant>
    <relatedEntity classCode="PRS">
        <!-- classCode "PRS" represents a person with personal relationship with the
patient -->
        <code code="SPS" displayName="SPOUSE" codeSystem="2.16.840.1.113883.1.11.19563"
codeSystemName="Personal Relationship Role Type Value Set" />
        <relatedPerson>
            <name>
                <given>Boris</given>
                <given qualifier="CL">Bo</given>
                <family>Betterhalf</family>
            </name>
        </relatedPerson>
    </relatedEntity>
</informant>
```

Figure 17: custodian Example

```
<custodian>
    <assignedCustodian>
        <representedCustodianOrganization>
            <id extension="321CX" root="1.1.1.1.1.1.1.1.3" />
            <name>Good Health HIE</name>
            <telecom use="WP" value="tel:+1(555)555-1009" />
            <addr use="WP">
                <streetAddressLine>1009 Healthcare Drive </streetAddressLine>
                <city>Portland</city>
                <state>OR</state>
                <postalCode>99123</postalCode>
                <country>US</country>
            </addr>
        </representedCustodianOrganization>
    </assignedCustodian>
</custodian>
```

Figure 18: informationRecipient Example

```
<informationRecipient>
    <intendedRecipient>
        <informationRecipient>
            <name>
                <given>Sara</given>
                <family>Specialize</family>
                <suffix qualifier="AC">M.D.</suffix>
            </name>
        </informationRecipient>
        <receivedOrganization>
            <name>The DoctorsApart Physician Group</name>
        </receivedOrganization>
    </intendedRecipient>
</informationRecipient>
```

Figure 19: Digital signature Example

```
<sdtc:signatureText mediaType="text/xml"
representation="B64">omSJUEdmde9j44zmMiromSJUEdmde9j44zmMirdMDSsWdIJdksIJR3373jeu83
   6edjzMMIjdMDSsWdIJdksIJR3373jeu83MNYD83jmMdomSJUEdmde9j44zmMir
   ... MNYD83jmMdomSJUEdmde9j44zmMir6edjzMMIjdMDSsWdIJdksIJR3373jeu83
   4zmMir6edjzMMIjdMDSsWdIJdksIJR3373jeu83==</sdtc:signatureText>
```

Figure 20: legalAuthenticator Example

```
<legalAuthenticator>
    <time value="20120915223615-0800" />
    <signatureCode code="S" />
    <assignedEntity>
        <id extension="5555555555" root="2.16.840.1.113883.4.6" />
        <code code="207QA0505X" displayName="Adult Medicine"
codeSystem="2.16.840.1.113883.5.53" codeSystemName="Health Care Provider Taxonomy" />
        <addr>
            <streetAddressLine>1004 Healthcare Drive </streetAddressLine>
            <city>Portland</city>
            <state>OR</state>
            <postalCode>99123</postalCode>
            <country>US</country>
        </addr>
        <telecom use="WP" value="tel:+1(555)555-1004" />
        <assignedPerson>
            <name>
                <given>Patricia</given>
                <given qualifier="CL">Patty</given>
                <family>Primary</family>
                <suffix qualifier="AC">M.D.</suffix>
            </name>
        </assignedPerson>
    </assignedEntity>
</legalAuthenticator>
```

Figure 21: authenticator Example

```
<authenticator>
    <time value="201209151030-0800" />
    <signatureCode code="S" />
    <assignedEntity>
        <id extension="5555555555" root="2.16.840.1.113883.4.6" />
        <code code="207QA0505X" displayName="Adult Medicine"
codeSystem="2.16.840.1.113883.5.53" codeSystemName="Health Care Provider Taxonomy" />
        <addr>
            <streetAddressLine>1004 Healthcare Drive</streetAddressLine>
            <city>Portland</city>
            <state>OR</state>
            <postalCode>99123</postalCode>
            <country>US</country>
        </addr>
        <telecom use="WP" value="tel:+1(555)555-1004" />
        <assignedPerson>
            <name>
                <given>Patricia</given>
                <given qualifier="CL">Patty</given>
                <family>Primary</family>
                <suffix qualifier="AC">M.D.</suffix>
            </name>
        </assignedPerson>
    </assignedEntity>
</authenticator>
```

Figure 22: Supporting Person participant Example

```
<participant typeCode="IND">
    <!-- typeCode "IND" represents an individual -->
    <associatedEntity classCode="NOK">
        <!-- classCode "NOK" represents the patient's next of kin-->
        <addr use="HP">
            <streetAddressLine>2222 Home Street</streetAddressLine>
            <city>Beaverton</city>
            <state>OR</state>
            <postalCode>97867</postalCode>
            <country>US</country>
        </addr>
        <telecom value="tel:+1(555)555-2008" use="MC" />
        <associatedPerson>
            <name>
                <given>Boris</given>
                <given qualifier="CL">Bo</given>
                <family>Betterhalf</family>
            </name>
        </associatedPerson>
    </associatedEntity>
</participant>
<!-- Entities playing multiple roles are recorded in multiple participants -->
<participant typeCode="IND">
    <associatedEntity classCode="ECON">
        <!-- classCode "ECON" represents an emergency contact -->
        <addr use="HP">
            <streetAddressLine>2222 Home Street</streetAddressLine>
            <city>Beaverton</city>
            <state>OR</state>
            <postalCode>97867</postalCode>
            <country>US</country>
        </addr>
        <telecom value="tel:+1(555)555-2008" use="MC" />
        <associatedPerson>
            <name>
                <given>Boris</given>
                <given qualifier="CL">Bo</given>
                <family>Betterhalf</family>
            </name>
        </associatedPerson>
    </associatedEntity>
</participant>
```

Figure 23: inFulfillmentOf Example

```
<inFulfillmentOf typeCode="FLFS">
    <order classCode="ACT" moodCode="RQO">
        <id root="2.16.840.1.113883.6.96" extension="1298989898" />
        <code code="388975008" displayName="Weight Reduction Consultation"
codeSystem="2.16.840.1.113883.6.96" codeSystemName="CPT4" />
    </order>
</inFulfillmentOf>
```

Figure 24: performer Example

```
<performer typeCode="PRF">
    <functionCode code="PCP"
              displayName="Primary Care Provider"
              codeSystem="2.16.840.1.113883.5.88"
              codeSystemName="ParticipationFunction">
        <originalText>Primary Care Provider</originalText>
    </functionCode>
    <assignedEntity>
        <id extension="5555555555" root="2.16.840.1.113883.4.6" />
        <code code="207QA0505X" displayName="Adult Medicine"
codeSystem="2.16.840.1.113883.5.53" codeSystemName="Health Care Provider Taxonomy" />
        <addr>
            <streetAddressLine>1004 Healthcare Drive </streetAddressLine>
            <city>Portland</city>
            <state>OR</state>
            <postalCode>99123</postalCode>
            <country>US</country>
        </addr>
        <telecom use="WP" value="tel:+1(555)555-1004" />
        <assignedPerson>
            <name>
                <given>Patricia</given>
                <given qualifier="CL">Patty</given>
                <family>Primary</family>
                <suffix qualifier="AC">M.D.</suffix>
            </name>
        </assignedPerson>
        <representedOrganization>
            <id extension="219BX" root="1.1.1.1.1.1.1.1.2" />
            <name>The DoctorsTogether Physician Group</name>
            <telecom use="WP" value="tel: +(555)-555-5000" />
            <addr>
                <streetAddressLine>1004 Health Drive</streetAddressLine>
                <city>Portland</city>
                <state>OR</state>
                <postalCode>99123</postalCode>
                <country>US</country>
            </addr>
        </representedOrganization>
    </assignedEntity>
</performer>
```

Figure 25: documentationOf Example

```
<documentationOf>
    <serviceEvent classCode="PCPR">
        <!-- The effectiveTime reflects the provision of care summarized in the document.
    In this scenario, the provision of care summarized is the lifetime for the patient -->
        <effectiveTime>
            <low value="19750501" />
            <!-- The low value represents when the summarized provision of care began.
     In this scenario, the patient's date of birth -->
            <high value="20120915" />
            <!-- The high value represents when the summarized provision of care being
ended.
     In this scenario, when chart summary was created -->
        </effectiveTime>
        <performer typeCode="PRF">
            <functionCode code="PCP"
                                        displayName="Primary Care Provider"
                                        codeSystem="2.16.840.1.113883.5.88"
                                        codeSystemName="ParticipationFunction">
                <originalText>Primary Care Provider</originalText>
            </functionCode>
            <assignedEntity>
                <id extension="5555555555" root="2.16.840.1.113883.4.6" />
                <code code="207QA0505X" displayName="Adult Medicine"
codeSystem="2.16.840.1.113883.5.53" codeSystemName="Health Care Provider Taxonomy" />
                <addr>
                    <streetAddressLine>1004 Healthcare Drive </streetAddressLine>
                    <city>Portland</city>
                    <state>OR</state>
                    <postalCode>99123</postalCode>
                    <country>US</country>
                </addr>
                <telecom use="WP" value="tel:+1(555)555-1004" />
                <assignedPerson>
                    <name>
                        <given>Patricia</given>
                        <given qualifier="CL">Patty</given>
                        <family>Primary</family>
                        <suffix qualifier="AC">M.D.</suffix>
                    </name>
                </assignedPerson>
                <representedOrganization>
                    <id extension="219BX" root="1.1.1.1.1.1.1.1.2" />
                    <name>The DoctorsTogether Physician Group</name>
                    <telecom use="WP" value="tel: +(555)-555-5000" />
                    <addr>
                        <streetAddressLine>1004 Health Drive</streetAddressLine>
                        <city>Portland</city>
                        <state>OR</state>
                        <postalCode>99123</postalCode>
                        <country>US</country>
                    </addr>
                </representedOrganization>
            </assignedEntity>
        </performer>
    </serviceEvent>
```



```
</documentationOf>
```

Figure 26: authorization Example

```
<authorization typeCode="AUTH">
    <consent classCode="CONS" moodCode="EVN">
        <id root="629deb70-5306-11df-9879-0800200c9a66" />
        <code codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" code="64293-4"
displayName="Procedure consent" />
        <statusCode code="completed" />
    </consent>
</authorization>
```

6 SECTION-LEVEL TEMPLATES[19]

This chapter contains the section-level templates referenced by one or more of the document types of this consolidated guide. These templates describe the purpose of each section and the section-level constraints.

Section-level templates are always included in a document. One and only one of each section type is allowed in a given document instance. Please see the document context tables to determine the sections that are contained in a given document type. Please see the conformance verb in the conformance statements to determine if it is required (SHALL), strongly recommended (SHOULD), or optional (MAY).

Each section-level template contains the following:

- Template metadata (e.g., templateId, etc.)
- Description and explanatory narrative
- LOINC section code
- Section title
- Requirements for a text element
- Entry-level template names and Ids for referenced templates (required and optional)

Narrative Text

The text element within the section stores the narrative to be rendered, as described in the CDA R2 specification, and is referred to as the CDA narrative block.

The content model of the CDA narrative block schema is handcrafted to meet requirements of human readability and rendering. The schema is registered as a MIME type (text/x-hl7-text+xml), which is the fixed media type for the text element.

As noted in the CDA R2 specification, the document originator is responsible for ensuring that the narrative block contains the complete, human readable, attested content of the section. Structured entries support computer processing and computation and are not a replacement for the attestable, human-readable content of the CDA narrative block. The special case of structured entries with an entry relationship of "DRIV" (is derived from) indicates to the receiving application that the source of the narrative block is the structured entries, and that the contents of the two are clinically equivalent.

As for all CDA documents—even when a report consisting entirely of structured entries is transformed into CDA—the encoding application must ensure that the authenticated content (narrative plus multimedia) is a faithful and complete rendering of the clinical content of the structured source data. As a general guideline, a generated narrative block should include the same human readable content that would be available to users viewing that content in the originating system. Although content formatting in the narrative block need not be identical to that in the originating system, the narrative block should use elements from the CDA narrative

[19] Section-level introductory language taken from *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1 (C-CDA R2.1).* (August 2015) http://www.hl7.org/implement/standards/product_brief.cfm?product_id=408

block schema to provide sufficient formatting to support human readability when rendered according to the rules defined in Section Narrative Block (§ 4.3.5) of the CDA R2 specification.

By definition, a receiving application cannot assume that all clinical content in a section (i.e., in the narrative block and multimedia) is contained in the structured entries unless the entries in the section have an entry relationship of "DRIV".

Additional specification information for the CDA narrative block can be found in the CDA R2 specification in sections 1.2.1, 1.2.3, 1.3, 1.3.1, 1.3.2, 4.3.4.2, and 6.

6.1 Periodontal Exam Section

`[section: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.2.2:2017-04-01 (open)]`

Table 8: Periodontal Exam Section Contexts

Contained By:	Contains:
Periodontal Claim Attachment Document (required)	Frenum Involvement Observation Poor Oral Hygiene Observation Presence of Orthodontic Treatment Observation Presence of Restorative Treatment Observation Tooth Identification Observation

The Periodontal Exam contains all discrete observations captured as part of the Periodontal Exam that are relevant to substantiating a claim to a payer.

Table 9: Periodontal Exam Section Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
section (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.2.2:2017-04-01)					
templateId	1..1	SHALL		3282-342	
@root	1..1	SHALL		3282-349	2.16.840.1.113883.10.20.38.2.2
@extension	1..1	SHALL		3282-496	2017-04-01
code	1..1	SHALL		3282-343	
@code	1..1	SHALL		3282-350	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 85910-8
@codeSystem	1..1	SHALL		3282-497	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
title	1..1	SHALL		3282-351	
text	1..1	SHALL		3282-352	
entry	1..1	SHALL		3282-344	
@typeCode	1..1	SHALL		3282-500	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		3282-353	Poor Oral Hygiene Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.1:2017-04-01
entry	1..1	SHALL		3282-498	
@typeCode	1..1	SHALL		3282-501	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
act	1..1	SHALL		3282-552	Periodontal Narrative Activity (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.18:2017-04-01
entry	1..1	SHALL		3282-345	
@typeCode	1..1	SHALL		3282-502	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		3282-354	Presence of Orthodontic Treatment Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.

					20.38.3.2:2017-04-01
entry	1..*	SHALL		3282-346	
@typeCode	1..1	SHALL		3282-503	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		3282-495	Tooth Identification Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.17:2017-04-01
entry	1..*	SHALL		3282-347	
@typeCode	1..1	SHALL		3282-504	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		3282-356	Frenum Involvement Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.4:2017-04-01
entry	1..1	SHALL		3282-348	
@typeCode	1..1	SHALL		3282-505	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		3282-357	Presence of Restorative Treatment Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.3:2017-04-01

33. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-342) such that it
    a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.2.2" (CONF:3282-349).
    b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-496).
34. **SHALL** contain exactly one [1..1] **code** (CONF:3282-343) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="85910-8" Physical findings of Teeth and gum Narrative (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-350).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-497).
35. **SHALL** contain exactly one [1..1] **title** (CONF:3282-351).
36. **SHALL** contain exactly one [1..1] **text** (CONF:3282-352).
37. **SHALL** contain exactly one [1..1] **entry** (CONF:3282-344) such that it
    a. **SHALL** contain exactly one [1..1] **@typeCode**="DRIV" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3282-500).

b. **SHALL** contain exactly one [1..1] **Poor Oral Hygiene Observation** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.1:2017-04-01) (CONF:3282-353).

38. **SHALL** contain exactly one [1..1] **entry** (CONF:3282-498) such that it
    a. **SHALL** contain exactly one [1..1] **@typeCode**="DRIV" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3282-501).
    b. **SHALL** contain exactly one [1..1] Periodontal Narrative Activity (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.18:2017-04-01) (CONF:3282-552).
39. **SHALL** contain exactly one [1..1] **entry** (CONF:3282-345) such that it
    a. **SHALL** contain exactly one [1..1] **@typeCode**="DRIV" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3282-502).
    b. **SHALL** contain exactly one [1..1] **Presence of Orthodontic Treatment Observation** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.2:2017-04-01) (CONF:3282-354).

One Tooth Identification Observation should be included for each tooth for which observations are to be included to substantiate the periodontal claim.

40. **SHALL** contain at least one [1..*] **entry** (CONF:3282-346) such that it
    a. **SHALL** contain exactly one [1..1] **@typeCode**="DRIV" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3282-503).
    b. **SHALL** contain exactly one [1..1] **Tooth Identification Observation** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.17:2017-04-01) (CONF:3282-495).

As the Frenum Involvement Observation asserts that one region of the patient's frenum is involved in the periodontal condition, multiple observations may be needed if multiple regions of the patient's frena are involved.

41. **SHALL** contain at least one [1..*] **entry** (CONF:3282-347) such that it
    a. **SHALL** contain exactly one [1..1] **@typeCode**="DRIV" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3282-504).
    b. **SHALL** contain exactly one [1..1] **Frenum Involvement Observation** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.4:2017-04-01) (CONF:3282-356).
42. **SHALL** contain exactly one [1..1] **entry** (CONF:3282-348) such that it
    a. **SHALL** contain exactly one [1..1] **@typeCode**="DRIV" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3282-505).
    b. **SHALL** contain exactly one [1..1] **Presence of Restorative Treatment Observation** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.3:2017-04-01) (CONF:3282-357).

Figure 27: Periodontal Exam Section Sample

```
<section>
    <!-- *** Periodontal Exam Section *** -->
    <templateId root="2.16.840.1.113883.10.20.38.2.2" extension="2017-04-01" />
    <code code="85910-8" displayName="Physical findings of Teeth and gum Narrative"
codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"/>
    <title>PERIODONTAL EXAM FINDINGS</title>
    <text>
        ...
    </text>
    <entry typeCode="DRIV">
        <!-- *** Poor Oral Hygiene Observation *** -->
        ...

    </entry>
    <entry typeCode="DRIV">
        <!-- *** Periodontal Narrative Activity *** -->
        ...

    </entry>
    <entry typeCode="DRIV">
        <!-- *** Presence of Orthodontic Treatment Observation *** -->
        ...

    </entry>
    <entry typeCode="DRIV">
        <!-- *** Tooth Identification Observation *** -->
        ...

    </entry>
    <entry typeCode="DRIV">
        <!-- *** Frenum Involvement Observation *** -->
        ...

    </entry>
    <entry typeCode="DRIV">
        <!-- *** Presence of Restorative Treatment Observation *** -->
        ...

    </entry>
</section>
```

7 ENTRY-LEVEL TEMPLATES[20]

This chapter describes the clinical statement entry templates used within the sections of the document types of this consolidated guide. Entry templates contain constraints that are required for conformance.

Entry-level templates are always in sections.

Each entry-level template description contains the following information:

- Key template metadata (e.g., template identifier, etc.)
- Description and explanatory narrative.
- Required CDA acts, participants and vocabularies.
- Optional CDA acts, participants and vocabularies.

Several entry-level templates require an effectiveTime:

The effectiveTime of an observation is the time interval over which the observation is known to be true. The low and high values should be as precise as possible, but no more precise than known. While CDA has multiple mechanisms to record this time interval (e.g., by low and high values, low and width, high and width, or center point and width), this guide constrains most to use only the low/high form. The low value is the earliest point for which the condition is known to have existed. The high value, when present, indicates the time at which the observation was no longer known to be true. The full description of effectiveTime and time intervals is contained in the CDA R2 normative edition.

ID in entry templates:

Entry-level templates may also describe an id element, which is an identifier for that entry. This id may be referenced within the document, or by the system receiving the document. The id assigned must be globally unique.

7.1 Frenum Involvement Observation

`[observation: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.3.4:2017-04-01 (open)]`

`Draft as part of Periodontal Attachment IG`

Table 10: Frenum Involvement Observation Contexts

Contained By:	Contains:
Periodontal Exam Section (required)	

Entry for capturing that the patient's frenum is involved in the periodontal condition.

[20] Entry-level introductory language reused where appropriate from *HL7 CDA R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes (US Realm) Draft Standard for Trial Use Release 2.1 (C-CDA R2.1).* (August 2015) http://www.hl7.org/implement/standards/product_brief.cfm?product_id=408

The frenum or frenulum is a small fold or ridge of tissue that supports or checks the motion of the part to which it is attached, in particular a fold of skin beneath the tongue, or between the lip and the gum. In this case, the lower labial frenum or frenulum is depicted.

The frenum observation is a gross examination expressed that there is clinical evidence that a specific frenum is involved and denoted by location.

SNODENT Codes are provided as values that express specific locations:

209615D Lower labial frenum

209620D Upper labial frenum

209631D Upper buccal frenum

209645D Lower buccal frenum

Table 11: Frenum Involvement Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.4:2017-04-01)					
@classCode	1..1	SHALL		3282-302	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3282-303	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
@negationInd	0..1	MAY		3282-556	
templateId	1..1	SHALL		3282-298	
@root	1..1	SHALL		3282-304	2.16.840.1.113883.10.20.38.3.4
@extension	1..1	SHALL		3282-419	2017-04-01
id	1..*	SHALL		3282-305	
code	1..1	SHALL		3282-299	
@code	1..1	SHALL		3282-306	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 85271-5
@codeSystem	1..1	SHALL		3282-420	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		3282-300	
@code	1..1	SHALL		3282-307	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	3282-301	urn:oid:2.16.840.1.113883.1.11.20558 (Dental Frenum Region)
@nullFlavor	0..1	MAY		3282-557	

43. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3282-302).
44. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3282-303).

Implementers should assert @negationInd = "true" if the patient's frenum is not involved in his periodontal condition.

45. **MAY** contain zero or one [0..1] **@negationInd** (CONF:3282-556).
46. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-298) such that it
    a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.3.4" (CONF:3282-304).
    b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-419).

47. **SHALL** contain at least one [1..*] **id** (CONF:3282-305).
48. **SHALL** contain exactly one [1..1] **code** (CONF:3282-299) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="85271-5" Frenum involvement site Oral cavity (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-306).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-420).
49. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3282-300) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-307).
50. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD", where the code **SHALL** be selected from ValueSet **Dental Frenum Region** urn:oid:2.16.840.1.113883.1.11.20558 **DYNAMIC** (CONF:3282-301).

Implementers should assert @nullFlavor = "NA" if the patient's frenum is not involved in his periodontal condition.

    a. This value **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:3282-557).

Figure 28: Frenum Involvement Observation Sample

```
<entry>
    <!-- *** Frenum Involvement Observation *** -->
    <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.38.3.4" extension="2017-04-01" />
        <id root="23eeb6f6-33df-4e7d-90f3-75ed174cbc54" />
        <code code="85271-5" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Frenum involvement site Oral cavity" />
        <statusCode code="completed" codeSystem="2.16.840.1.113883.5.14" />
        <value xsi:type="CD" code="209615D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Lower Labial Frenum" />
    </observation>
</entry>
```

7.2 Gingival Attachment Observation

[observation: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.3.15:2017-04-01 (open)]

Table 12: Gingival Attachment Observation Contexts

Contained By:	Contains:
Gingival Probing Site Identification Observation (required)	

Tooth-specific, probing site-specific observation of level of attachment of the gingiva to the tooth.

Table 13: Gingival Attachment Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.15:2017-04-01)					
@classCode	1..1	SHALL		3282-155	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3282-156	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		3282-152	
@root	1..1	SHALL		3282-157	2.16.840.1.113883.10.20.38.3.15
@extension	1..1	SHALL		3282-421	2017-04-01
id	1..*	SHALL		3282-158	
code	1..1	SHALL		3282-153	
@code	1..1	SHALL		3282-159	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 32912-8
@codeSystem	1..1	SHALL		3282-422	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		3282-154	
@code	1..1	SHALL		3282-160	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL		3282-448	
@nullFlavor	0..1	MAY		3282-560	
value	0..1	MAY	PQ	3282-445	
@value	1..1	SHALL		3282-449	
@unit	1..1	SHALL		3282-450	urn:oid:2.16.840.1.113883.6.8 (UCUM) = mm
value	0..1	MAY	IVL_PQ	3282-446	
low	1..1	SHALL		3282-447	
@value	1..1	SHALL		3282-451	10
@unit	1..1	SHALL		3282-452	urn:oid:2.16.840.1.113883.6.8 (UCUM) = mm
@inclusive	1..1	SHALL		3282-453	false

51. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3282-155).
52. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3282-156).
53. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-152) such that it
    a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.3.15" (CONF:3282-157).
    b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-421).
54. **SHALL** contain at least one [1..*] **id** (CONF:3282-158).
55. **SHALL** contain exactly one [1..1] **code** (CONF:3282-153) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="32912-8" Attachment level [length] {tooth} {probe site} Calculated (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-159).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-422).
56. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3282-154) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-160).
57. **SHALL** contain exactly one [1..1] **value** (CONF:3282-448).

Implementers should assert @nullFlavor = "NI" if no information is available on gingival attachment for the given probing site.

    a. This value **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:3282-560).

Implementations should model the value using this structure when the measurement is between 0 and 10mm

58. **MAY** contain zero or one [0..1] **value** with @xsi:type="PQ" (CONF:3282-445) such that it

This value should be an integer value between 0 and 10, representing 0-10mm.

    a. **SHALL** contain exactly one [1..1] **@value** (CONF:3282-449).
    b. **SHALL** contain exactly one [1..1] **@unit**="mm" (CodeSystem: UCUM urn:oid:2.16.840.1.113883.6.8) (CONF:3282-450).

Implementations should model the value using this structure when the measurement is over 10mm

59. **MAY** contain zero or one [0..1] **value** with @xsi:type="IVL_PQ" (CONF:3282-446) such that it
    a. **SHALL** contain exactly one [1..1] **low** (CONF:3282-447).
        i. This low **SHALL** contain exactly one [1..1] **@value**="10" (CONF:3282-451).
        ii. This low **SHALL** contain exactly one [1..1] **@unit**="mm" (CodeSystem: UCUM urn:oid:2.16.840.1.113883.6.8) (CONF:3282-452).
        iii. This low **SHALL** contain exactly one [1..1] **@inclusive**="false" (CONF:3282-453).

Figure 29: Gingival Attachment Observation Sample

```
<entryRelationship typeCode="REFR" inversionInd="true">
    <!-- *** Gingival Attachment Observation *** -->
    <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.38.3.15" extension="2017-04-01" />
        <id root="23eeb6f6-33df-4e7d-90f3-75ed174cbc54" />
        <code code="32912-8" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Attachment level [length] {tooth} {probe site} Calculated" />
        <statusCode code="completed" codeSystem="2.16.840.1.113883.5.14" />
        <value xsi:type="PQ" value="2" unit="mm" />
    </observation>
</entryRelationship>
```

7.3 Gingival Probing Depth Observation

[observation: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.3.12:2017-04-01 (open)]

Table 14: Gingival Probing Depth Observation Contexts

Contained By:	Contains:
Gingival Probing Site Identification Observation (required)	

Entry for capturing the probing depth recorded at a given probing site for a given tooth as part of a periodontal exam.

The Gingival Probing Depth is the expression of direct measurement of each of the six values/locations. The tooth is probed using a graduated pick and measurements are recorded in Millimeters. Values of 0-10mm, in increments of a full millimeters. If more than ten, the value is expressed as simply >10mm. The location is identified in the Gingival Probing Site Identification Observation.

Table 15: Gingival Probing Depth Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.12:2017-04-01)					
@nullFlavor	0..1	MAY		3282-457	
@classCode	1..1	SHALL		3282-188	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3282-189	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		3282-185	
@root	1..1	SHALL		3282-190	2.16.840.1.113883.10.20.38.3.12
@extension	1..1	SHALL		3282-429	2017-04-01
id	1..*	SHALL		3282-191	
code	1..1	SHALL		3282-186	
@code	1..1	SHALL		3282-192	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 32910-2
@codeSystem	1..1	SHALL		3282-430	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		3282-428	
@code	1..1	SHALL		3282-431	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL		3282-458	
@nullFlavor	0..1	MAY		3282-561	
value	0..1	MAY	PQ	3282-454	
@value	1..1	SHALL		3282-459	
@unit	1..1	SHALL		3282-460	urn:oid:2.16.840.1.113883.6.8 (UCUM) = mm
value	0..1	MAY	IVL_PQ	3282-455	
low	1..1	SHALL		3282-456	
@value	1..1	SHALL		3282-461	10
@unit	1..1	SHALL		3282-462	urn:oid:2.16.840.1.113883.6.8 (UCUM) = mm

@inclusive	1..1	SHALL		3282-475	false

60. **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:3282-457).
61. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3282-188).
62. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3282-189).
63. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-185) such that it
    a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.3.12" (CONF:3282-190).
    b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-429).
64. **SHALL** contain at least one [1..*] **id** (CONF:3282-191).
65. **SHALL** contain exactly one [1..1] **code** (CONF:3282-186) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="32910-2" Probing depth {Tooth}.{probe site} Measured (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-192).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-430).
66. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3282-428) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-431).
67. **SHALL** contain exactly one [1..1] **value** (CONF:3282-458).

Implementers should assert @nullFlavor = "NI" if no information is available on probing depth for a probing site.

    a. This value **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:3282-561).

Implementations should model the value using this structure when the measurement is between 0 and 10mm

68. **MAY** contain zero or one [0..1] **value** with @xsi:type="PQ" (CONF:3282-454) such that it

This value should be an integer value between 0 and 10, representing 0-10mm.

    a. **SHALL** contain exactly one [1..1] **@value** (CONF:3282-459).
    b. **SHALL** contain exactly one [1..1] **@unit**="mm" (CodeSystem: UCUM urn:oid:2.16.840.1.113883.6.8) (CONF:3282-460).

Implementations should model the value using this structure when the measurement is over 10mm

69. **MAY** contain zero or one [0..1] **value** with @xsi:type="IVL_PQ" (CONF:3282-455) such that it
    a. **SHALL** contain exactly one [1..1] **low** (CONF:3282-456) such that it
        i. **SHALL** contain exactly one [1..1] **@value**="10" (CONF:3282-461).
        ii. **SHALL** contain exactly one [1..1] **@unit**="mm" (CodeSystem: UCUM urn:oid:2.16.840.1.113883.6.8) (CONF:3282-462).
        iii. **SHALL** contain exactly one [1..1] **@inclusive**="false" (CONF:3282-475).

Figure 30: Gingival Probing Depth Observation Sample

```
<entryRelationship typeCode="REFR" inversionInd="true">
    <!-- *** Gingival Probing Depth Observation *** -->
    <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.38.3.12" extension="2017-04-01" />
        <id root="23eeb6f6-33df-4e7d-90f3-75ed174cbc54" />
        <code code="32910-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Probing depth {Tooth}.{probe site} Measured" />
        <statusCode code="completed" codeSystem="2.16.840.1.113883.5.14" />
        <value xsi:type="PQ" value="8" unit="mm" />
    </observation>
</entryRelationship>
```

7.4 Gingival Probing Site Bleeding Observation

[observation: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.3.14:2017-04-01 (open)]

Table 16: Gingival Probing Site Bleeding Observation Contexts

Contained By:	Contains:
Gingival Probing Site Identification Observation (required)	

The Gingival Probing Site Bleeding Observation is the elaboration of bleeding after the Gingival Probing Site is measured. This is a general observation with a single assertion if bleeding occurred.

Table 17: Gingival Probing Site Bleeding Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.14:2017-04-01)					
@classCode	1..1	SHALL		3282-167	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3282-168	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
@negationInd	0..1	MAY		3282-553	
templateId	1..1	SHALL		3282-163	
@root	1..1	SHALL		3282-169	2.16.840.1.113883.10.20.38.3.14
@extension	1..1	SHALL		3282-554	2017-04-01
id	1..*	SHALL		3282-170	
code	1..1	SHALL		3282-164	
@code	1..1	SHALL		3282-171	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = ASSERTION
@codeSystem	1..1	SHALL		3282-432	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = 2.16.840.1.113883.5.4
statusCode	1..1	SHALL		3282-165	
@code	1..1	SHALL		3282-172	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	3282-166	
@code	1..1	SHALL		3282-173	urn:oid:2.16.840.1.113883.3.3150 (SNODENT) = 130400D
@codeSystem	0..1	MAY		3282-555	urn:oid:2.16.840.1.113883.3.3150 (SNODENT) = 2.16.840.1.113883.3.3150

70. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3282-167).
71. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3282-168).

Implementers should assert @negationInd="true" if bleeding was not observed upon probing at the associated probing site.

72. **MAY** contain zero or one [0..1] **@negationInd** (CONF:3282-553).
73. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-163) such that it

a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.3.14" (CONF:3282-169).
b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-554).

74. **SHALL** contain at least one [1..*] **id** (CONF:3282-170).
75. **SHALL** contain exactly one [1..1] **code** (CONF:3282-164) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="ASSERTION" (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3282-171).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.5.4" HL7ActCode (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3282-432).
76. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3282-165) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-172).
77. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3282-166) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="130400D" Bleeding on probing of gingivae (CodeSystem: SNODENT urn:oid:2.16.840.1.113883.3.3150 **STATIC**) (CONF:3282-173).
    b. **MAY** contain zero or one [0..1] **@codeSystem**="2.16.840.1.113883.3.3150" SNODENT (CodeSystem: SNODENT urn:oid:2.16.840.1.113883.3.3150) (CONF:3282-555).

Figure 31: Gingival Probing Site Bleeding Observation Sample

```
<entryRelationship typeCode="REFR" inversionInd="true">
    <!-- *** Gingival Probing Site Bleeding Observation *** -->
    <observation classCode="OBS" moodCode="EVN">
        <templateId root="2.16.840.1.113883.10.20.38.3.14"  extension="2017-04-01" />
        <id root="e373a4fd-5250-4502-ae78-e5556e724134" />
        <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4" />
        <statusCode code="completed" codeSystem="2.16.840.1.113883.5.14" />
        <value xsi:type="CD" code="130400D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Bleeding on probing of gingivae" />
    </observation>
</entryRelationship>
```

7.5 Gingival Probing Site Identification Observation

[observation: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.3.16:2017-04-01 (open)]

Table 18: Gingival Probing Site Identification Observation Contexts

Contained By:	Contains:
Tooth Identification Observation (optional)	Gingival Attachment Observation Gingival Probing Depth Observation Gingival Probing Site Bleeding Observation Gingival Recession Observation

Observation entry for identifying the probing site for a given tooth where observations are being taken.

Table 19: Gingival Probing Site Identification Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.16:2017-04-01)					
@classCode	1..1	SHALL		3282-145	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3282-146	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		3282-141	
@root	1..1	SHALL		3282-147	2.16.840.1.113883.10.20.38.3.16
@extension	1..1	SHALL		3282-523	2017-04-01
id	1..*	SHALL		3282-148	
code	1..1	SHALL		3282-142	
@code	1..1	SHALL		3282-149	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 32888-0
@codeSystem	1..1	SHALL		3282-524	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		3282-143	
@code	1..1	SHALL		3282-150	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	3282-144	
@code	1..1	SHALL		3282-151	urn:oid:2.16.840.1.113883.1.11.20555 (Dental Periodontal Probing Position)
entryRelationship	1..1	SHALL		3282-519	
@typeCode	1..1	SHALL		3282-525	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
@inversionInd	1..1	SHALL		3282-526	true
observation	1..1	SHALL		3282-527	Gingival Probing Depth Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.12:2017-04-01
entryRelationship	1..1	SHALL		3282-520	
@typeCode	1..1	SHALL		3282-528	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR

@inversionInd	1..1	SHALL		3282-529	true
observation	1..1	SHALL		3282-530	Gingival Attachment Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.15:2017-04-01
entryRelationship	1..1	SHALL		3282-521	
@typeCode	1..1	SHALL		3282-531	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
@inversionInd	1..1	SHALL		3282-532	true
observation	1..1	SHALL		3282-533	Gingival Recession Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.13:2017-04-01
entryRelationship	1..1	SHALL		3282-522	
@typeCode	1..1	SHALL		3282-534	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
@inversionInd	1..1	SHALL		3282-535	true
observation	1..1	SHALL		3282-536	Gingival Probing Site Bleeding Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.14:2017-04-01

78. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3282-145).
79. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3282-146).
80. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-141) such that it
    a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.3.16" (CONF:3282-147).
    b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-523).
81. **SHALL** contain at least one [1..*] **id** (CONF:3282-148).
82. **SHALL** contain exactly one [1..1] **code** (CONF:3282-142) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="32888-0" Probe site {Tooth}.sulcus (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-149).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-524).
83. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3282-143) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-150).
84. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3282-144) such that it

a. **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet **Dental Periodontal Probing Position** urn:oid:2.16.840.1.113883.1.11.20555 **DYNAMIC** (CONF:3282-151).

85. **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:3282-519) such that it
    a. **SHALL** contain exactly one [1..1] **@typeCode**="REFR" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3282-525).
    b. **SHALL** contain exactly one [1..1] **@inversionInd**="true" (CONF:3282-526).
    c. **SHALL** contain exactly one [1..1] **Gingival Probing Depth Observation** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.12:2017-04-01) (CONF:3282-527).
86. **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:3282-520) such that it
    a. **SHALL** contain exactly one [1..1] **@typeCode**="REFR" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3282-528).
    b. **SHALL** contain exactly one [1..1] **@inversionInd**="true" (CONF:3282-529).
    c. **SHALL** contain exactly one [1..1] **Gingival Attachment Observation** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.15:2017-04-01) (CONF:3282-530).
87. **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:3282-521) such that it
    a. **SHALL** contain exactly one [1..1] **@typeCode**="REFR" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3282-531).
    b. **SHALL** contain exactly one [1..1] **@inversionInd**="true" (CONF:3282-532).
    c. **SHALL** contain exactly one [1..1] **Gingival Recession Observation** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.13:2017-04-01) (CONF:3282-533).
88. **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:3282-522) such that it
    a. **SHALL** contain exactly one [1..1] **@typeCode**="REFR" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3282-534).
    b. **SHALL** contain exactly one [1..1] **@inversionInd**="true" (CONF:3282-535).
    c. **SHALL** contain exactly one [1..1] **Gingival Probing Site Bleeding Observation** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.14:2017-04-01) (CONF:3282-536).

Figure 32: Gingival Probing Site Identification Observation Sample

```
<!-- *** Gingival Probing Site Identification Observation *** -->
<observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.38.3.16" extension="2017-04-01" />
    <id root="23eeb6f6-33df-4e7d-90f3-75ed174cbc54" />
    <code code="32888-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Probe site {Tooth}.sulcus" />
    <statusCode code="completed" codeSystem="2.16.840.1.113883.5.14" />
    <value xsi:type="CD" code="163596D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Distal-buccal" />
</observation>
<!-- Reference Entry Relationship: Probing Depth -->
<entryRelationship typeCode="REFR" inversionInd="true">
    <!-- *** Gingival Probing Depth Observation *** -->
        ...

</entryRelationship>
<!-- Reference Entry Relationship: Gingival Attachment -->
<entryRelationship typeCode="REFR"  inversionInd="true">
    <!-- *** Gingival Attachment Observation *** -->
        ...

</entryRelationship>
<!-- Reference Entry Relationship: Bleeding at Probing Site -->
<entryRelationship typeCode="REFR"  inversionInd="true">
    <!-- *** Gingival Probing Site Bleeding Observation *** -->
        ...

</entryRelationship>
<!-- Reference Entry Relationship: Gingival Recession -->
<entryRelationship typeCode="REFR"  inversionInd="true">
    <!-- *** Gingival Recession Observation *** -->
        ...

</entryRelationship>
```

7.6 Gingival Recession Observation

[observation: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.3.13:2017-04-01 (open)]

Table 20: Gingival Recession Observation Contexts

Contained By:	Contains:
Gingival Probing Site Identification Observation (required)	

Entry to capture the distance to which the gingiva has receeded from a given tooth at a specific probing site.

Table 21: Gingival Recession Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.13:2017-04-01)					
@classCode	1..1	SHALL		3282-178	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3282-179	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		3282-174	
@root	1..1	SHALL		3282-180	2.16.840.1.113883.10.20.38.3.13
@extension	1..1	SHALL		3282-467	2017-04-01
id	1..*	SHALL		3282-181	
code	1..1	SHALL		3282-175	
@code	1..1	SHALL		3282-182	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 32911-0
@codeSystem	1..1	SHALL		3282-468	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		3282-176	
@code	1..1	SHALL		3282-183	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL		3282-469	
@nullFlavor	0..1	MAY		3282-562	
value	0..1	MAY	PQ	3282-463	
@value	1..1	SHALL		3282-470	
@unit	1..1	SHALL		3282-471	urn:oid:2.16.840.1.113883.6.8 (UCUM) = mm
value	0..1	MAY	IVL_PQ	3282-464	
low	1..1	SHALL		3282-465	
@value	1..1	SHALL		3282-472	10
@unit	1..1	SHALL		3282-473	urn:oid:2.16.840.1.113883.6.8 (UCUM) = mm
@inclusive	1..1	SHALL		3282-474	false

89. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3282-178).
90. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3282-179).
91. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-174) such that it
    a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.3.13" (CONF:3282-180).
    b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-467).
92. **SHALL** contain at least one [1..*] **id** (CONF:3282-181).
93. **SHALL** contain exactly one [1..1] **code** (CONF:3282-175) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="32911-0" Recession [length] {tooth} {probe site} Measured (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-182).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-468).
94. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3282-176) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-183).
95. **SHALL** contain exactly one [1..1] **value** (CONF:3282-469).

Implementers should assert @nullFlavor = "NI" if no information is available on gingival recession for the probing site.

    a. This value **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:3282-562).

Implementations should model the value using this structure when the measurement is between 0 and 10mm

96. **MAY** contain zero or one [0..1] **value** with @xsi:type="PQ" (CONF:3282-463) such that it

This value should be an integer value between 0 and 10, representing 0-10mm.

    a. **SHALL** contain exactly one [1..1] **@value** (CONF:3282-470).
    b. **SHALL** contain exactly one [1..1] **@unit**="mm" (CodeSystem: UCUM urn:oid:2.16.840.1.113883.6.8) (CONF:3282-471).

Implementations should model the value using this structure when the measurement is over 10mm

97. **MAY** contain zero or one [0..1] **value** with @xsi:type="IVL_PQ" (CONF:3282-464) such that it
    a. **SHALL** contain exactly one [1..1] **low** (CONF:3282-465) such that it
        i. **SHALL** contain exactly one [1..1] **@value**="10" (CONF:3282-472).
        ii. **SHALL** contain exactly one [1..1] **@unit**="mm" (CodeSystem: UCUM urn:oid:2.16.840.1.113883.6.8) (CONF:3282-473).
        iii. **SHALL** contain exactly one [1..1] **@inclusive**="false" (CONF:3282-474).

Figure 33: Gingival Recession Observation Sample

```
<!-- *** Gingival Recession Observation *** -->
<observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.38.3.13" extension="2017-04-01" />
    <id root="23eeb6f6-33df-4e7d-90f3-75ed174cbc54" />
    <code code="32911-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Recession [length] {tooth} {probe site} Measured" />
    <statusCode code="completed" codeSystem="2.16.840.1.113883.5.14" />
    <value xsi:type="CD" value="4" unit="mm" />
</observation>
```

7.7 Periodontal Narrative Activity

[act: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.3.18:2017-04-01 (open)]

Table 22: Periodontal Narrative Activity Contexts

Contained By:	Contains:
Periodontal Exam Section (required)	

This entry contains the free-text submission of up to 1000 characters from the provider as required by the ADA 1079 guidance.

As noted previously, general observations and notations allow the provider to express clinical observations and relevancy in unstructured text. Below would be a representative sample of the type of narrative used in the attachment:

“Patient’s overall health is good despite her obesity. Says that she’s drinking 12+ 20oz Cokes a day. Patient admits to not following a regular oral hygiene regimen. Referring patient to Oral-Maxillofacial surgeon for consult due to Mandibular involvement and bone loss.”

Table 23: Periodontal Narrative Activity Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
act (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.18:2017-04-01)					
@classCode	1..1	SHALL		3282-435	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = ACT
@moodCode	1..1	SHALL		3282-436	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		3282-434	
@root	1..1	SHOULD		3282-437	2.16.840.1.113883.10.20.38.3.18
@extension	1..1	SHALL		3282-438	2017-04-01
code	1..1	SHALL		3282-439	
@code	1..1	SHALL		3282-441	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 74046-4
@codeSystem	1..1	SHALL		3282-442	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
text	1..1	SHALL		3282-544	
reference	1..1	SHALL		3282-545	
@nullFlavor	0..1	MAY		3282-558	
@value	1..1	SHOULD		3282-546	
statusCode	1..1	SHALL		3282-440	
@code	1..1	SHALL		3282-443	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed

98. **SHALL** contain exactly one [1..1] **@classCode**="ACT" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3282-435).
99. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3282-436).
100. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-434) such that it
    a. **SHOULD** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.3.18" (CONF:3282-437).
    b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-438).
101. **SHALL** contain exactly one [1..1] **code** (CONF:3282-439) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="74046-4" Supplemental information about periodontal attachment (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-441).

b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-442).

102. **SHALL** contain exactly one [1..1] **text** (CONF:3282-544) such that it

The periodontal narrative activity must reference human-readable content in the narrative area of the section, so this reference must not be null. If no periodontal narrative is included in the attachment, implementers should assert the @nullFlavor = "NI".

a. **SHALL** contain exactly one [1..1] **reference** (CONF:3282-545).
    i. This reference **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:3282-558).

This @value should only not be present if there is a @nullFlavor present.

    ii. This reference **SHOULD** contain exactly one [1..1] **@value** (CONF:3282-546).
        1. This reference/@value **SHALL** begin with a '#' and **SHALL** point to its corresponding narrative (using the approach defined in CDA Release 2, section 4.3.5.1) (CONF:3282-547).

103. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3282-440) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-443).

Figure 34: Periodontal Narrative Activity Sample

```
<act classCode="ACT" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.38.3.18" extension="2017-04-01" />
    <id root="23eeb6f6-33df-4e7d-90f3-75ed174cbc54" />
    <code code="74046-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Supplemental information about periodontal attachment" />
    <text>
        <reference value="#PeriodontalNarrative1" />
    </text>
    <statusCode code="completed" codeSystem="2.16.840.1.113883.5.14" />
</act>
```

7.8 Poor Oral Hygiene Observation

[observation: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.3.1:2017-04-01 (open)]

Table 24: Poor Oral Hygiene Observation Contexts

Contained By:	Contains:
Periodontal Exam Section (required)	

Entry to assert that the patient's Oral Hygiene was found to be unacceptable.

Table 25: Poor Oral Hygiene Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.1:2017-04-01)					
@classCode	1..1	SHALL		3282-335	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3282-336	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
@negationInd	0..1	MAY		3282-510	
templateId	1..1	SHALL		3282-331	
@root	1..1	SHALL		3282-337	2.16.840.1.113883.10.20.38.3.1
@extension	1..1	SHALL		3282-511	2017-04-01
id	1..*	SHALL		3282-338	
code	1..1	SHALL		3282-332	
@code	1..1	SHALL		3282-339	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = ASSERTION
@codeSystem	1..1	SHALL		3282-512	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = 2.16.840.1.113883.5.4
statusCode	1..1	SHALL		3282-333	
@code	1..1	SHALL		3282-340	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	3282-334	
@code	1..1	SHALL		3282-341	urn:oid:2.16.840.1.113883.3.3150 (SNODENT) = 140234D
@codeSystem	1..1	SHALL		3282-400	urn:oid:2.16.840.1.113883.3.3150 (SNODENT) = 2.16.840.1.113883.3.3150

104. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3282-335).
105. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3282-336).

Implementers should assert @negatgionInd="true" if the patient's oral hygiene is not poor

106. **MAY** contain zero or one [0..1] **@negationInd** (CONF:3282-510).
107. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-331) such that it

a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.3.1" (CONF:3282-337).
b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-511).

108. **SHALL** contain at least one [1..*] **id** (CONF:3282-338).
109. **SHALL** contain exactly one [1..1] **code** (CONF:3282-332) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="ASSERTION" (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3282-339).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.5.4" (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3282-512).
110. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3282-333) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-340).
111. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3282-334) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="140234D" Poor oral hygiene (CodeSystem: SNODENT urn:oid:2.16.840.1.113883.3.3150) (CONF:3282-341).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.3.3150" SNODENT (CodeSystem: SNODENT urn:oid:2.16.840.1.113883.3.3150) (CONF:3282-400).

Figure 35: Poor Oral Hygiene Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.38.3.1" extension="2017-04-01" />
    <id root="9b1d8af0-b55e-4af1-a6b2-ec159d4f3004" />
    <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4" />
    <statusCode code="completed" codeSystem="2.16.840.1.113883.5.14" />
    <value xsi:type="CD" code="140234D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Poor oral hygiene" />
</observation>
```

7.9 Presence of Orthodontic Treatment Observation

[observation: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.3.2:2017-04-01 (open)]

Table 26: Presence of Orthodontic Treatment Observation Contexts

Contained By:	Contains:
Periodontal Exam Section (required)	

Entry to communicate that orthodontic hardware is present in the patient's mouth.

Table 27: Presence of Orthodontic Treatment Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.2:2017-04-01)					
@classCode	1..1	SHALL		3282-324	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3282-325	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
@negationInd	0..1	MAY		3282-513	
templateId	1..1	SHALL		3282-320	
@root	1..1	SHALL		3282-326	2.16.840.1.113883.10.20.38.3.2
@extension	1..1	SHALL		3282-514	2017-04-01
id	1..*	SHALL		3282-327	
code	1..1	SHALL		3282-321	
@code	1..1	SHALL		3282-328	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = ASSERTION
@codeSystem	1..1	SHALL		3282-515	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = 2.16.840.1.113883.5.4
statusCode	1..1	SHALL		3282-322	
@code	1..1	SHALL		3282-329	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	3282-323	
@code	1..1	SHALL		3282-330	urn:oid:2.16.840.1.113883.3.3150 (SNODENT) = 209725D
@codeSystem	1..1	SHALL		3282-401	urn:oid:2.16.840.1.113883.3.3150 (SNODENT) = 2.16.840.1.113883.3.3150

112. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3282-324).
113. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3282-325).

Implementers should assert @negationInd="true" if the presence of orthodontic treatment was not observed.

114. **MAY** contain zero or one [0..1] **@negationInd** (CONF:3282-513).
115. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-320) such that it

a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.3.2" (CONF:3282-326).
b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-514).

116. **SHALL** contain at least one [1..*] **id** (CONF:3282-327).
117. **SHALL** contain exactly one [1..1] **code** (CONF:3282-321) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="ASSERTION" (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3282-328).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.5.4" (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3282-515).
118. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3282-322) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-329).
119. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3282-323) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="209725D" Seen by orthodontics service (CodeSystem: SNODENT urn:oid:2.16.840.1.113883.3.3150) (CONF:3282-330).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.3.3150" SNODENT (CodeSystem: SNODENT urn:oid:2.16.840.1.113883.3.3150) (CONF:3282-401).

Figure 36: Presence of Orthodontic Treatment Observation Sample

```
<!-- *** Presence of Orthodontic Treatment Observation *** -->
<observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.38.3.2" extension="2017-04-01" />
    <id root="0d87b895-b9d8-4726-ad3f-4d07177f62d5" />
    <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4" />
    <statusCode code="completed" codeSystem="2.16.840.1.113883.5.14" />
    <value xsi:type="CD" code="209725D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Seen by orthodontics service" />
</observation>
```

7.10 Presence of Restorative Treatment Observation

[observation: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.3.3:2017-04-01 (open)]

Table 28: Presence of Restorative Treatment Observation Contexts

Contained By:	Contains:
Periodontal Exam Section (required)	

Entry to capture that Dental Restorative Treatment has occurred for the patient.

Table 29: Presence of Restorative Treatment Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.3:2017-04-01)					
@classCode	1..1	SHALL		3282-313	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3282-314	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
@negationInd	1..1	SHALL		3282-516	
templateId	1..1	SHALL		3282-309	
@root	1..1	SHALL		3282-315	2.16.840.1.113883.10.20.38.3.3
@extension	1..1	SHALL		3282-517	2017-04-01
id	1..*	SHALL		3282-316	
code	1..1	SHALL		3282-310	
@code	1..1	SHALL		3282-317	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = ASSERTION
@codeSystem	1..1	SHALL		3282-518	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = 2.16.840.1.113883.5.4
statusCode	1..1	SHALL		3282-311	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus)
@code	1..1	SHALL		3282-318	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	3282-312	
@code	1..1	SHALL		3282-319	urn:oid:2.16.840.1.113883.3.3150 (SNODENT) = 120871D
@codeSystem	1..1	SHALL		3282-402	urn:oid:2.16.840.1.113883.3.3150 (SNODENT) = 2.16.840.1.113883.3.3150

120. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3282-313).
121. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3282-314).

Implementers should assert @negationInd="true" if the presence of restorative treatment was not observed.

122. **SHALL** contain exactly one [1..1] **@negationInd** (CONF:3282-516).
123. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-309) such that it

a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.3.3" (CONF:3282-315).
b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-517).

124. **SHALL** contain at least one [1..*] **id** (CONF:3282-316).
125. **SHALL** contain exactly one [1..1] **code** (CONF:3282-310) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="ASSERTION" (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3282-317).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.5.4" (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3282-518).
126. **SHALL** contain exactly one [1..1] **statusCode** (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-311) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-318).
127. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3282-312) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="120871D" Dental restoration present (CodeSystem: SNODENT urn:oid:2.16.840.1.113883.3.3150) (CONF:3282-319).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.3.3150" SNODENT (CodeSystem: SNODENT urn:oid:2.16.840.1.113883.3.3150) (CONF:3282-402).

Figure 37: Presence of Restorative Treatment Observation Sample

```
<!-- *** Presence of Restorative Treatment Observation *** -->
<observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.38.3.3" extension="2017-04-01" />
    <id root="bf89bf3a-da28-4373-8d42-834d2e3d4beb" />
    <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4" />
    <statusCode code="completed" codeSystem="2.16.840.1.113883.5.14" />
    <value xsi:type="CD" code="120871D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Dental restoration present" />
</observation>
```

7.11 Tooth Absent Observation

[observation: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.3.7:2017-04-01 (open)]

Table 30: Tooth Absent Observation Contexts

Contained By:	Contains:
Tooth Identification Observation (optional)	

Entry for asserting that a tooth is absent

Table 31: Tooth Absent Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.7:2017-04-01)					
@classCode	1..1	SHALL		3282-256	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3282-257	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
@negationInd	0..1	MAY		3282-506	
templateId	1..1	SHALL		3282-253	
@root	1..1	SHALL		3282-258	2.16.840.1.113883.10.20.38.3.7
@extension	1..1	SHALL		3282-507	2017-04-01
id	1..*	SHALL		3282-259	
code	1..1	SHALL		3282-254	
@code	1..1	SHALL		3282-260	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = ASSERTION
@codeSystem	1..1	SHALL		3282-508	urn:oid:2.16.840.1.113883.5.4 (HL7ActCode) = 2.16.840.1.113883.5.4
statusCode	1..1	SHALL		3282-261	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus)
@code	1..1	SHALL		3282-509	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	3282-255	
@code	1..1	SHALL		3282-262	urn:oid:2.16.840.1.113883.3.3150 (SNODENT) = 100203D
@codeSystem	1..1	SHALL		3282-406	urn:oid:2.16.840.1.113883.3.3150 (SNODENT) = 2.16.840.1.113883.3.3150

128. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3282-256).
129. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3282-257).

Implementers should assert that @negationInd="true" in the situation where the tooth is currently present.

130. **MAY** contain zero or one [0..1] **@negationInd** (CONF:3282-506).
131. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-253) such that it

a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.3.7" (CONF:3282-258).
b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-507).

132. **SHALL** contain at least one [1..*] **id** (CONF:3282-259).
133. **SHALL** contain exactly one [1..1] **code** (CONF:3282-254) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="ASSERTION" (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3282-260).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.5.4" (CodeSystem: HL7ActCode urn:oid:2.16.840.1.113883.5.4) (CONF:3282-508).
134. **SHALL** contain exactly one [1..1] **statusCode** (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-261) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-509).
135. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3282-255) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="100203D" Tooth absent (CodeSystem: SNODENT urn:oid:2.16.840.1.113883.3.3150) (CONF:3282-262).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.3.3150" SNODENT (CodeSystem: SNODENT urn:oid:2.16.840.1.113883.3.3150) (CONF:3282-406).

Figure 38: Tooth Absent Observation Sample

```
<!-- *** Tooth Previously Extracted Observation *** -->
<observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.38.3.7" extension="2017-04-01" />
    <id root="e373a4fd-5250-4502-ae78-e5556e724134" />
    <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4" />
    <statusCode code="completed" codeSystem="2.16.840.1.113883.5.14" />
    <value xsi:type="CD" code="100203D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Tooth absent" />
</observation>
```

7.12 Tooth Furcation Grade Observation

[observation: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.3.10:2017-04-01 (open)]

Table 32: Tooth Furcation Grade Observation Contexts

Contained By:	Contains:
Tooth Identification Observation (optional)	

Entry to capture the grade of furcation observed on a given side of a given tooth.

Table 33: Tooth Furcation Grade Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.10:2017-04-01)					
@classCode	1..1	SHALL		3282-232	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3282-233	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		3282-229	
@root	1..1	SHALL		3282-234	2.16.840.1.113883.10.20.38.3.10
@extension	1..1	SHALL		3282-537	2017-04-01
id	1..*	SHALL		3282-235	
code	1..1	SHALL		3282-230	
@code	1..1	SHALL		3282-236	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 34015-8
@codeSystem	1..1	SHALL		3282-538	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		3282-231	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus)
@code	1..1	SHALL		3282-237	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	3282-238	
@code	1..1	SHOULD		3282-407	
targetSiteCode	1..1	SHALL		3282-540	
@code	1..1	SHALL		3282-542	urn:oid:2.16.840.1.113883.1.11.20557 (Dental Tooth Furcation Site)

136. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3282-232).
137. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3282-233).
138. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-229) such that it
    a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.3.10" (CONF:3282-234).
    b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-537).
139. **SHALL** contain at least one [1..*] **id** (CONF:3282-235).

140. **SHALL** contain exactly one [1..1] **code** (CONF:3282-230) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="34015-8" Furcation Classification {tooth} Glickman classification (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-236).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-538).
141. **SHALL** contain exactly one [1..1] **statusCode** (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-231) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-237).
142. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3282-238) such that it

The only condition under which @code should not be present is if @nullFlavor is present.

    a. **SHOULD** contain exactly one [1..1] **@code** (CONF:3282-407).

In using the LOINC Answer List, implementers should populate @code with the "Answer ID" indicated in the LOINC Answer List, and populate the @displayName with a concatenation of the "Code" and "Answer" in the LOINC Answer List. For example, in representing a Furcation Grade of II, @code = "LA8910-7" @displayName = "II Partial horizontal component to the bone loss but no "through and "through"

        i. This @code **SHALL** be selected from LOINC Answer List LL428-4 Furcation Classification DYNAMIC (CONF:3282-539).

The targetSiteCode indicates the root of the tooth to which this Furcation Grade Observation applies.

143. **SHALL** contain exactly one [1..1] **targetSiteCode** (CONF:3282-540) such that it
    a. **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet **Dental Tooth Furcation Site** urn:oid:2.16.840.1.113883.1.11.20557 **DYNAMIC** (CONF:3282-542).

Figure 39: Tooth Furcation Grade Observation Sample

```
<!-- *** Tooth Furcation Grade Observation *** -->
<observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.38.3.10" extension="2017-04-01" />
    <id root="23eeb6f6-33df-4e7d-90f3-75ed174cbc54" />
    <code code="34015-8" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Furcation Classification {tooth} Glickman classification" />
    <statusCode code="completed" codeSystem="2.16.840.1.113883.5.14" />
    <value xsi:type="CD" code="LA8911-5" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="III Complete horizontal component to the bone loss
(through and through)"/>
    <targetSiteCode code="146014D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Distal Surface" />
</observation>
```

7.13 Tooth Identification Observation

[observation: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.3.17:2017-04-01 (open)]

Table 34: Tooth Identification Observation Contexts

Contained By:	Contains:
Periodontal Exam Section (required)	Gingival Probing Site Identification Observation Tooth Absent Observation Tooth Furcation Grade Observation Tooth Mobility Observation

Entry for identifying the number of the tooth being examined.

Table 35: Tooth Identification Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.17:2017-04-01)					
@classCode	1..1	SHALL		3282-266	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3282-267	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		3282-263	
@root	1..1	SHALL		3282-268	2.16.840.1.113883.10.20.38.3.17
@extension	1..1	SHALL		3282-476	2017-04-01
id	1..*	SHALL		3282-269	
code	1..1	SHALL		3282-264	
@code	1..1	SHALL		3282-270	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 32885-6
@codeSystem	1..1	SHALL		3282-477	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		3282-271	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus)
@code	1..1	SHALL		3282-273	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	3282-265	
@code	1..1	SHALL		3282-272	urn:oid:2.16.840.1.113883.1.11.20556 (Dental Universal Numbering System)
entryRelationship	1..1	MAY		3282-478	
@typeCode	1..1	SHALL		3282-482	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
@inversionInd	1..1	SHALL		3282-483	true
observation	1..1	SHALL		3282-484	Tooth Absent Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.7:2017-04-01
entryRelationship	1..6	SHOULD		3282-479	
@typeCode	1..1	SHALL		3282-485	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR

@inversionInd	1..1	SHALL		3282-486	true
observation	1..1	SHALL		3282-487	Gingival Probing Site Identification Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.16:2017-04-01
entryRelationship	1..1	SHOULD		3282-480	
@typeCode	1..1	SHALL		3282-488	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
@inversionInd	1..1	SHALL		3282-489	true
observation	1..1	SHALL		3282-490	Tooth Mobility Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.8:2017-04-01
entryRelationship	1..3	SHOULD		3282-481	
@typeCode	1..1	SHALL		3282-491	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
@inversionInd	1..1	SHALL		3282-492	true
observation	1..1	SHALL		3282-493	Tooth Furcation Grade Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.10:2017-04-01

144. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3282-266).
145. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3282-267).
146. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-263) such that it
    a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.3.17" (CONF:3282-268).
    b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-476).
147. **SHALL** contain at least one [1..*] **id** (CONF:3282-269).
148. **SHALL** contain exactly one [1..1] **code** (CONF:3282-264) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="32885-6" Identification {Tooth} Observed (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-270).
    b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-477).
149. **SHALL** contain exactly one [1..1] **statusCode** (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-271) such that it

a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-273).

150. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3282-265) such that it
    a. **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet **Dental Universal Numbering System** urn:oid:2.16.840.1.113883.1.11.20556 **DYNAMIC** (CONF:3282-272).
151. **MAY** contain exactly one [1..1] **entryRelationship** (CONF:3282-478) such that it
    a. **SHALL** contain exactly one [1..1] **@typeCode**="REFR" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3282-482).
    b. **SHALL** contain exactly one [1..1] **@inversionInd**="true" (CONF:3282-483).
    c. **SHALL** contain exactly one [1..1] **Tooth Absent Observation** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.7:2017-04-01) (CONF:3282-484).

It is anticipated that there would be a maximum of 6 of these related Gingival Probing Site Identification Observations, corresponding to the 6 probing sites per tooth as part of a Periodontal Exam. These related observations should only be absent if the corresponding tooth is absent, as indicated in the Tooth Absent Observation.

152. **SHOULD** contain at least one and not more than six [1..6] **entryRelationship** (CONF:3282-479) such that it
    a. **SHALL** contain exactly one [1..1] **@typeCode**="REFR" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3282-485).
    b. **SHALL** contain exactly one [1..1] **@inversionInd**="true" (CONF:3282-486).
    c. **SHALL** contain exactly one [1..1] **Gingival Probing Site Identification Observation** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.16:2017-04-01) (CONF:3282-487).

This related Tooth Mobility Observation should only be absent if the corresponding tooth is absent, as indicated in the Tooth Absent Observation.

153. **SHOULD** contain exactly one [1..1] **entryRelationship** (CONF:3282-480) such that it
    a. **SHALL** contain exactly one [1..1] **@typeCode**="REFR" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3282-488).
    b. **SHALL** contain exactly one [1..1] **@inversionInd**="true" (CONF:3282-489).
    c. **SHALL** contain exactly one [1..1] **Tooth Mobility Observation** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.8:2017-04-01) (CONF:3282-490).

entryRelationships to Furcation Grade Observations SHOULD be present for all teeth for which furcation could be observed. It is anticipated that there would be a maximum of 3 of these related Tooth Furcation Observations, corresponding to the maximum of 3 tooth roots for which furcation could be observed per tooth as part of a Periodontal Exam.

154. **SHOULD** contain at least one and not more than three [1..3] **entryRelationship** (CONF:3282-481) such that it

a. **SHALL** contain exactly one [1..1] **@typeCode**="REFR" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:3282-491).
b. **SHALL** contain exactly one [1..1] **@inversionInd**="true" (CONF:3282-492).
c. **SHALL** contain exactly one [1..1] **Tooth Furcation Grade Observation** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.10:2017-04-01) (CONF:3282-493).

Figure 40: Tooth Identification Observation Sample

```
<!-- *** Tooth Identification Observation *** -->
<observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.38.3.17" extension="2017-04-01" />
    <id root="23eeb6f6-33df-4e7d-90f3-75ed174cbc54" />
    <code code="32885-6" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Identification {Tooth} Observed" />
    <statusCode code="completed" codeSystem="2.16.840.1.113883.5.14" />
    <value xsi:type="CD" code="161607D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Permanent upper right first premolar tooth"/>
    <!-- Reference Entry Relationship: Gingival Probing Site Identification -->
    <entryRelationship typeCode="REFR"  inversionInd="true">
        <!-- *** Gingival Probing Site Identification Observation *** -->
        ...

      </entryRelationship>
    <!-- Reference Entry Relationship: Tooth Mobility -->
    <entryRelationship typeCode="REFR"  inversionInd="true">
        <!-- *** Tooth Mobility Observation *** -->
        ...

    </entryRelationship>
    <!-- Reference Entry Relationship: Tooth Furcation Grade -->
    <entryRelationship typeCode="REFR"  inversionInd="true">
        <!-- *** Tooth Furcation Grade Observation *** -->
        ...

    </entryRelationship>
</observation>
```

7.14 Tooth Mobility Observation

[observation: identifier urn:hl7ii:2.16.840.1.113883.10.20.38.3.8:2017-04-01 (open)]

Table 36: Tooth Mobility Observation Contexts

Contained By:	Contains:
Tooth Identification Observation (optional)	

Entry for capturing the mobility of a given tooth as part of a periodontal exam

Table 37: Tooth Mobility Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.38.3.8:2017-04-01)					
@classCode	1..1	SHALL		3282-246	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		3282-247	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		3282-242	
@root	1..1	SHALL		3282-248	2.16.840.1.113883.10.20.38.3.8
@extension	1..1	SHALL		3282-550	2017-04-01
id	1..*	SHALL		3282-249	
code	1..1	SHALL		3282-243	
@code	1..1	SHALL		3282-250	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 34005-9
@codeSystem	1..1	SHALL		3282-551	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		3282-244	
@code	1..1	SHALL		3282-251	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	3282-245	
@nullFlavor	0..1	MAY		3282-559	
@code	1..1	SHOULD		3282-252	urn:oid:2.16.840.1.113883.1.11.20554 (Dental Tooth Mobility Miller Classification)

155. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:3282-246).
156. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:3282-247).
157. **SHALL** contain exactly one [1..1] **templateId** (CONF:3282-242) such that it
    a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.38.3.8" (CONF:3282-248).
    b. **SHALL** contain exactly one [1..1] **@extension**="2017-04-01" (CONF:3282-550).
158. **SHALL** contain at least one [1..*] **id** (CONF:3282-249).
159. **SHALL** contain exactly one [1..1] **code** (CONF:3282-243) such that it

a. **SHALL** contain exactly one [1..1] **@code**="34005-9" Tooth mobility Miller classification (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-250).
b. **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.1" (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3282-551).

160. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3282-244) such that it
    a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:3282-251).
161. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:3282-245) such that it

Implementers should assert @nullFlavor="NI" if no information is available for the mobility of the related tooth.

a. **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:3282-559).

The only condition when @code may not be present is when @nullFlavor is present.

b. **SHOULD** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet **Dental Tooth Mobility Miller Classification** urn:oid:2.16.840.1.113883.1.11.20554 **DYNAMIC** (CONF:3282-252).

Figure 41: Tooth Mobility Observation Sample

```
<!-- *** Tooth Mobility Observation *** -->
<observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.38.3.8" extension="2017-04-01" />
    <id root="23eeb6f6-33df-4e7d-90f3-75ed174cbc54" />
    <code code="34005-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Tooth mobility miller classification" />
    <statusCode code="completed" codeSystem="2.16.840.1.113883.5.14" />
    <value xsi:type="CD" code="136123D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Tooth mobility - grade 2"/>
</observation>
```

8 US REALM HEADER SUPPORTING TEMPLATES

8.1 US Realm Address (AD.US.FIELDED)

[addr: identifier urn:oid:2.16.840.1.113883.10.20.22.5.2 (open)]

Published as part of Consolidated CDA Templates for Clinical Notes (US Realm) DSTU R1.1

Table 38: US Realm Address (AD.US.FIELDED) Contexts

Contained By:	Contains:
US Realm Header (V3) (required)	

Reusable address template, for use in US Realm CDA Header.

Table 39: US Realm Address (AD.US.FIELDED) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
addr (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.2)					
@use	0..1	SHOULD		81-7290	urn:oid:2.16.840.1.113883.1.11.10637 (PostalAddressUse)
country	0..1	SHOULD		81-7295	urn:oid:2.16.840.1.113883.3.88.12.80.63 (Country)
state	0..1	SHOULD		81-7293	urn:oid:2.16.840.1.113883.3.88.12.80.1 (StateValueSet)
city	1..1	SHALL		81-7292	
postalCode	0..1	SHOULD		81-7294	urn:oid:2.16.840.1.113883.3.88.12.80.2 (PostalCode)
streetAddressLine	1..1	SHALL		81-7291	

162. **SHOULD** contain zero or one [0..1] **@use**, which **SHALL** be selected from ValueSet **PostalAddressUse** urn:oid:2.16.840.1.113883.1.11.10637 **STATIC** 2005-05-01 (CONF:81-7290).
163. **SHOULD** contain zero or one [0..1] **country**, which **SHALL** be selected from ValueSet **Country** urn:oid:2.16.840.1.113883.3.88.12.80.63 **DYNAMIC** (CONF:81-7295).
164. **SHOULD** contain zero or one [0..1] **state** (ValueSet: **StateValueSet** urn:oid:2.16.840.1.113883.3.88.12.80.1 **DYNAMIC**) (CONF:81-7293).
    a. State is required if the country is US. If country is not specified, it's assumed to be US. If country is something other than US, the state **MAY** be present but **MAY** be bound to different vocabularies (CONF:81-10024).
165. **SHALL** contain exactly one [1..1] **city** (CONF:81-7292).

166. **SHOULD** contain zero or one [0..1] **postalCode**, which **SHOULD** be selected from ValueSet **PostalCode** urn:oid:2.16.840.1.113883.3.88.12.80.2 **DYNAMIC** (CONF:81-7294).
    a. PostalCode is required if the country is US. If country is not specified, it's assumed to be US. If country is something other than US, the postalCode **MAY** be present but **MAY** be bound to different vocabularies (CONF:81-10025).
167. **SHALL** contain exactly one [1..1] **streetAddressLine** (CONF:81-7291).
168. **SHALL NOT** have mixed content except for white space (CONF:81-7296).

Figure 42: US Realm Address Example

```
<addr use="HP">
    <streetAddressLine>22 Sample Street</streetAddressLine>
    <city>Beaverton</city>
    <state>OR</state>
    <postalCode>97867</postalCode>
    <country>US</country>
</addr>
```

8.2 US Realm Date and Time (DTM.US.FIELDED)

[effectiveTime: identifier urn:oid:2.16.840.1.113883.10.20.22.5.4 (open)]

Published as part of Consolidated CDA Templates for Clinical Notes (US Realm) DSTU R1.1

Table 40: US Realm Date and Time (DTM.US.FIELDED) Contexts

Contained By:	Contains:
US Realm Header (V3) (required)	

The US Realm Clinical Document Date and Time datatype flavor records date and time information. If no time zone offset is provided, you can make no assumption about time, unless you have made a local exchange agreement.

This data type uses the same rules as US Realm Date and Time (DT.US.FIELDED), but is used with elements having a datatype of TS.

Table 41: US Realm Date and Time (DTM.US.FIELDED) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
effectiveTime (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.4)					

169. **SHALL** be precise to the day (CONF:81-10127).
170. **SHOULD** be precise to the minute (CONF:81-10128).

171. **MAY** be precise to the second (CONF:81-10129).

172. If more precise than day, **SHOULD** include time-zone offset (CONF:81-10130).

Figure 43: US Realm Date and Time Example

```
<!-- Common values for date/time elements would range in precision to the day YYYYMMDD to
precision to the second with a time zone offset YYYYMMDDHHMMSS - ZZzz -->
<!-- time element with TS data type precise to the day for a birthdate -->
<time value=”19800531”/>
<!-- effectiveTime element with IVL<TS> data type precise to the second for an observation
-->
<effectiveTime>
    <low value='20110706122735-0800'/>
    <high value='20110706122815-0800'/>
</effectiveTime>
```

8.3 US Realm Person Name (PN.US.FIELDED)

[name: identifier urn:oid:2.16.840.1.113883.10.20.22.5.1.1 (open)]

Published as part of Consolidated CDA Templates for Clinical Notes (US Realm) DSTU R1.1

Table 42: US Realm Person Name (PN.US.FIELDED) Contexts

Contained By:	Contains:
US Realm Header (V3) (required)	

The US Realm Clinical Document Person Name datatype flavor is a set of reusable constraints that can be used for Persons.

Table 43: US Realm Person Name (PN.US.FIELDED) Constraints Overview

XPath	Card.	Verb	Data Type	CONF #	Value
name (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1)					
name	1..1	SHALL		81-9368	

173. **SHALL** contain exactly one [1..1] **name** (CONF:81-9368).
    a. The content of name **SHALL** be either a conformant Patient Name (PTN.US.FIELDED), or a string (CONF:81-9371).
    b. The string **SHALL NOT** contain name parts (CONF:81-9372).

9 TEMPLATE IDS IN THIS GUIDE

Table 44: Template List

Template Title	Template Type	templateId
Periodontal Claim Attachment Document	document	urn:hl7ii:2.16.840.1.113883.10.20.38.1.2:2017-04-01
US Realm Header (V3)	document	urn:hl7ii:2.16.840.1.113883.10.20.22.1.1:2015-08-01
Periodontal Exam Section	section	urn:hl7ii:2.16.840.1.113883.10.20.38.2.2:2017-04-01
Frenum Involvement Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.4:2017-04-01
Gingival Attachment Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.15:2017-04-01
Gingival Probing Depth Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.12:2017-04-01
Gingival Probing Site Bleeding Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.14:2017-04-01
Gingival Probing Site Identification Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.16:2017-04-01
Gingival Recession Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.13:2017-04-01
Poor Oral Hygiene Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.1:2017-04-01
Presence of Orthodontic Treatment Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.2:2017-04-01
Presence of Restorative Treatment Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.3:2017-04-01
Tooth Absent Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.7:2017-04-01
Tooth Furcation Grade Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.10:2017-04-01
Tooth Identification Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.17:2017-04-01
Tooth Mobility Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.8:2017-04-01
US Realm Address (AD.US.FIELDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.22.5.2
US Realm Date and Time (DTM.US.FIELDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.22.5.4
US Realm Person Name (PN.US.FIELDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.22.5.1.1

Table 45: Template Containments

Template Title	Template Type	templateId
Periodontal Claim Attachment Document	document	urn:hl7ii:2.16.840.1.113883.10.20.38.1.2:2017-04-01
Periodontal Exam Section	section	urn:hl7ii:2.16.840.1.113883.10.20.38.2.2:2017-04-01
Frenum Involvement Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.4:2017-04-01
Poor Oral Hygiene Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.1:2017-04-01
Presence of Orthodontic Treatment Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.2:2017-04-01
Presence of Restorative Treatment Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.3:2017-04-01
Tooth Identification Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.17:2017-04-01
Gingival Probing Site Identification Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.16:2017-04-01
Gingival Attachment Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.15:2017-04-01
Gingival Probing Depth Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.12:2017-04-01
Gingival Probing Site Bleeding Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.14:2017-04-01
Gingival Recession Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.13:2017-04-01
Tooth Absent Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.7:2017-04-01
Tooth Furcation Grade Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.10:2017-04-01
Tooth Mobility Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.38.3.8:2017-04-01
US Realm Header (V3)	document	urn:hl7ii:2.16.840.1.113883.10.20.22.1.1:2015-08-01
US Realm Address (AD.US.FIELDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.22.5.2
US Realm Date and Time (DTM.US.FIELDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.22.5.4
US Realm Person Name (PN.US.FIELDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.22.5.1.1

10 VALUE SETS IN THIS GUIDE

Where explicit codes are referenced in this section, they have been published as they existed at the time of the publication of this guide. Please reference the Value Set Source URLs indicated for the most current set of codes associated with each value set.

Table 46: Race

Value Set: Race urn:oid:2.16.840.1.113883.1.11.14914 Concepts in the race value set include the 5 minimum categories for race specified by OMB along with a more detailed set of race categories used by the Bureau of Census. Value Set Source: https://vsac.nlm.nih.gov/			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 47: HL7 BasicConfidentialityKind

Value Set: HL7 BasicConfidentialityKind urn:oid:2.16.840.1.113883.1.11.16926 A value set of HL7 Code indication the level of confidentiality an act. Value Set Source: https://vsac.nlm.nih.gov/			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 48: Language

Value Set: Language urn:oid:2.16.840.1.113883.1.11.11526 A value set of codes defined by Internet RFC 4646 (replacing RFC 3066). Please see ISO 639 language code set maintained by Library of Congress for enumeration of language codes. Value Set Source: http://www.loc.gov/standards/iso639-2/php/code_list.php			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 49: Telecom Use (US Realm Header)

Value Set: Telecom Use (US Realm Header) urn:oid:2.16.840.1.113883.11.20.9.20 Value Set Source: https://vsac.nlm.nih.gov/			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 50: Administrative Gender (HL7 V3)

Value Set: Administrative Gender (HL7 V3) urn:oid:2.16.840.1.113883.1.11.1 Administrative Gender based upon HL7 V3 vocabulary. This value set contains only male, female and undifferentiated concepts. Value Set Source: https://vsac.nlm.nih.gov/			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 51: Marital Status

Value Set: Marital Status urn:oid:2.16.840.1.113883.1.11.12212 Marital Status is the domestic partnership status of a person. Value Set Source: https://vsac.nlm.nih.gov/			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 52: Religious Affiliation

Value Set: Religious Affiliation urn:oid:2.16.840.1.113883.1.11.19185 A value set of codes that reflect spiritual faith affiliation. Value Set Source: https://vsac.nlm.nih.gov/			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 53: Race Category Excluding Nulls

Value Set: Race Category Excluding Nulls urn:oid:2.16.840.1.113883.3.2074.1.1.3 Value Set Source: https://vsac.nlm.nih.gov/			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 54: Ethnicity

Value Set: Ethnicity urn:oid:2.16.840.1.114222.4.11.837 Code System: Race & Ethnicity - CDC 2.16.840.1.113883.6.238 Value Set Source: https://vsac.nlm.nih.gov/			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 55: Personal And Legal Relationship Role Type

Value Set: Personal And Legal Relationship Role Type urn:oid:2.16.840.1.113883.11.20.12.1 A personal or legal relationship records the role of a person in relation to another person, or a person to himself or herself. This value set is to be used when recording relationships based on personal or family ties or through legal assignment of responsibility. Value Set Source: https://phinvads.cdc.gov/vads/ViewValueSet.action?oid=2.16.840.1.113883.11.20.12.1			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 56: Country

Value Set: Country urn:oid:2.16.840.1.113883.3.88.12.80.63 This identifies the codes for the representation of names of countries, territories and areas of geographical interest. Value Set Source: http://www.iso.org/iso/country_codes/iso_3166_code_lists.htm			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 57: PostalCode

Value Set: PostalCode urn:oid:2.16.840.1.113883.3.88.12.80.2 A value set of postal (ZIP) Code of an address in the United States Value Set Source: http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=86671000			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 58: LanguageAbilityMode

Value Set: LanguageAbilityMode urn:oid:2.16.840.1.113883.1.11.12249 This identifies the language ability of the individual. A value representing the method of expression of the language. Value Set Source: https://vsac.nlm.nih.gov/			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 59: LanguageAbilityProficiency

Value Set: LanguageAbilityProficiency urn:oid:2.16.840.1.113883.1.11.12199 Value Set Source: https://vsac.nlm.nih.gov/			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 60: Detailed Ethnicity

Value Set: Detailed Ethnicity urn:oid:2.16.840.1.114222.4.11.877 List of detailed ethnicity codes reported on a limited basis Value Set Source: https://phinvads.cdc.gov/vads/ViewValueSet.action?oid=2.16.840.1.114222.4.11.877			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 61: Healthcare Provider Taxonomy (HIPAA)

Value Set: Healthcare Provider Taxonomy (HIPAA) urn:oid:2.16.840.1.114222.4.11.1066 The Health Care Provider Taxonomy value set is a collection of unique alphanumeric codes, ten characters in length. The code set is structured into three distinct Levels including Provider Type, Classification, and Area of Specialization. The Health Care Provider Taxonomy code set allows a single provider (individual, group, or institution) to identify their specialty category. Providers may have one or more than one value associated to them. When determining what value or values to associate with a provider, the user needs to review the requirements of the trading partner with which the value(s) are being used. Value Set Source: https://phinvads.cdc.gov/vads/ViewValueSet.action?oid=2.16.840.1.114222.4.11.1066			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 62: INDRoleclassCodes

Value Set: INDRoleclassCodes urn:oid:2.16.840.1.113883.11.20.9.33 Value Set Source: https://vsac.nlm.nih.gov/			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 63: x_ServiceEventPerformer

Value Set: x_ServiceEventPerformer urn:oid:2.16.840.1.113883.1.11.19601 Value Set Source: http://www.hl7.org/documentcenter/public/standards/vocabulary/vocabulary_tables/infrastructure/vocabulary/vocabulary.html			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 64: ParticipationFunction

Value Set: ParticipationFunction urn:oid:2.16.840.1.113883.1.11.10267 This HL7-defined value set can be used to specify the exact function an actor had in a service in all necessary detail. Value Set Source: https://vsac.nlm.nih.gov/			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 65: Dental Frenum Region

Value Set: Dental Frenum Region urn:oid:2.16.840.1.113883.1.11.20558 The SNODENT identifiers for the regions of the human frenum within the mouth. This value set contains content from SNODENT Copyright American Dental Association (ADA). All rights reserved. SNODENT is a registered trademark of the ADA. http://www.ada.org/en/member-center/member-benefits/practice-resources/dental-informatics/snodent/licensing-snodent			
Code	**Code System**	**Code System OID**	**Print Name**
209615D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Lower Labial Frenum
209620D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Upper Labial Frenum
209631D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Upper Buccal Frenum
209645D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Lower Buccal Frenum

Table 66: Dental Periodontal Probing Position

Value Set: Dental Periodontal Probing Position urn:oid:2.16.840.1.113883.1.11.20555

The SNODENT identifiers for the relative positions around the tooth that are probed and measured in assessing a patient's periodontal health.

This value set contains content from SNODENT Copyright American Dental Association (ADA). All rights reserved. SNODENT is a registered trademark of the ADA.

http://www.ada.org/en/member-center/member-benefits/practice-resources/dental-informatics/snodent/licensing-snodent

Code	Code System	Code System OID	Print Name
163596D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Distal-buccal
139277D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Facial surface of tooth
163680D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Mesial-buccal
163013D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Mesial-lingual
103356D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Lingual surface
163468D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Distal-lingual

Table 67: Dental Tooth Furcation Site

Value Set: Dental Tooth Furcation Site urn:oid:2.16.840.1.113883.1.11.20557

The SNODENT identifiers for the relative location of a human tooth root that is being observed for furcation.
This value set contains content from SNODENT Copyright American Dental Association (ADA). All rights reserved. SNODENT is a registered trademark of the ADA.
http://www.ada.org/en/member-center/member-benefits/practice-resources/dental-informatics/snodent/licensing-snodent

Code	Code System	Code System OID	Print Name
103387D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Buccal Surface
103356D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Lingual Surface
132513D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Mesial Surface
146014D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Distal Surface
163013D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Mesial-lingual
163468D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Distal-lingual

Table 68: Dental Universal Numbering System

Value Set: Dental Universal Numbering System urn:oid:2.16.840.1.113883.1.11.20556
The SNODENT identifiers for all of the possible human teeth, both adult and adolescent.

This value set contains content from SNODENT Copyright American Dental Association (ADA). All rights reserved. SNODENT is a registered trademark of the ADA.

http://www.ada.org/en/member-center/member-benefits/practice-resources/dental-informatics/snodent/licensing-snodent

Code	Code System	Code System OID	Print Name
161227D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper right third molar tooth
161262D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper right second molar tooth
161010D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper right first molar tooth
161546D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper right second premolar tooth
161607D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper right first premolar tooth
160840D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper right canine tooth
161941D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper right lateral incisor tooth
160903D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper right central incisor tooth
161006D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper left central incisor tooth
161109D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper left lateral incisor tooth
160957D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper left canine tooth
161329D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper left first premolar tooth
161178D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper left second premolar tooth
161132D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper left first molar tooth
161317D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper left second molar tooth
161454D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper left third molar tooth
161258D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent lower left third molar tooth
161372D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent lower left second molar tooth
161533D	SNODENT	urn:oid:2.16.840.1.11388	Permanent lower left first

		3.3.3150	molar tooth
161150D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Permanent lower left second premolar tooth
160654D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Permanent lower left first premolar tooth
160817D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Permanent lower left canine tooth
161477D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Permanent lower left lateral incisor tooth
161068D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Permanent lower left central incisor tooth
161291D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Permanent lower right central incisor tooth
161197D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Permanent lower right lateral incisor tooth
161514D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Permanent lower right canine tooth
161496D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Permanent lower right first premolar tooth
161412D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Permanent lower right second premolar tooth
160770D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Permanent lower right first molar tooth
160704D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Permanent lower right second molar tooth
161121D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Permanent lower right third molar tooth
162091D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary upper right second molar tooth
162234D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary upper right first molar tooth
162268D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary upper right canine tooth
162494D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary upper right lateral incisor tooth
162619D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary upper right central incisor tooth
162418D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary upper left central incisor tooth
162350D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary upper left lateral incisor tooth
162309D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary upper left canine tooth
162004D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary upper left first molar tooth
162585D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary upper left second molar tooth

162321D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary lower left second molar tooth
162537D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary lower left first molar tooth
162441D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary lower left canine tooth
162129D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary lower left lateral incisor tooth
162345D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary lower left central incisor tooth
162062D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary lower right central incisor tooth
161956D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary lower right lateral incisor tooth
161892D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary lower right canine tooth
162206D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary lower right first molar tooth
162425D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Primary lower right second molar tooth

Table 69: Dental Tooth Mobility Miller Classification

Value Set: Dental Tooth Mobility Miller Classification urn:oid:2.16.840.1.113883.1.11.20554

The SNODENT identifiers for the recognized grades of tooth mobility according to the Miller Classification system.

http://www.ada.org/en/member-center/member-benefits/practice-resources/dental-informatics/snodent/licensing-snodent

Code	Code System	Code System OID	Print Name
116762D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Tooth mobility - grade 1
136123D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Tooth mobility - grade 2
149641D	SNODENT	urn:oid:2.16.840.1.11388 3.3.3150	Tooth mobility - grade 3

Table 70: PostalAddressUse

Value Set: PostalAddressUse urn:oid:2.16.840.1.113883.1.11.10637 A value set of HL7 Codes for address use. Value Set Source: https://vsac.nlm.nih.gov/			
Code	**Code System**	**Code System OID**	**Print Name**
…			

Table 71: StateValueSet

Value Set: StateValueSet urn:oid:2.16.840.1.113883.3.88.12.80.1 Identifies addresses within the United States are recorded using the FIPS 5-2 two-letter alphabetic codes for the State, District of Columbia, or an outlying area of the United States or associated area Value Set Source: http://www.census.gov/geo/reference/ansi_statetables.html			
Code	**Code System**	**Code System OID**	**Print Name**
…			

11 CODE SYSTEMS IN THIS GUIDE

Table 72: Code Systems

Name	OID
CDT	urn:oid:2.16.840.1.113883.6.13
Country	urn:oid:2.16.840.1.113883.3.88.12.80.63
FIPS 5-2 (State)	urn:oid:2.16.840.1.113883.6.92
Healthcare Provider Taxonomy (HIPAA)	urn:oid:2.16.840.1.113883.6.101
HL7ActClass	urn:oid:2.16.840.1.113883.5.6
HL7ActCode	urn:oid:2.16.840.1.113883.5.4
HL7ActMood	urn:oid:2.16.840.1.113883.5.1001
HL7ActRelationshipType	urn:oid:2.16.840.1.113883.5.1002
HL7ActStatus	urn:oid:2.16.840.1.113883.5.14
HL7AddressUse	urn:oid:2.16.840.1.113883.5.1119
HL7AdministrativeGender	urn:oid:2.16.840.1.113883.5.1
HL7Confidentiality	urn:oid:2.16.840.1.113883.5.25
HL7LanguageAbilityMode	urn:oid:2.16.840.1.113883.5.60
HL7LanguageAbilityProficiency	urn:oid:2.16.840.1.113883.5.61
HL7MaritalStatus	urn:oid:2.16.840.1.113883.5.2
HL7NullFlavor	urn:oid:2.16.840.1.113883.5.1008
HL7ParticipationFunction	urn:oid:2.16.840.1.113883.5.88
HL7ParticipationSignature	urn:oid:2.16.840.1.113883.5.89
HL7ParticipationType	urn:oid:2.16.840.1.113883.5.90
HL7Race	urn:oid:2.16.840.1.113883.5.104
HL7ReligiousAffiliation	urn:oid:2.16.840.1.113883.5.1076
HL7RoleClass	urn:oid:2.16.840.1.113883.5.110
HL7RoleCode	urn:oid:2.16.840.1.113883.5.111
Language	urn:oid:2.16.840.1.113883.6.121
LOINC	urn:oid:2.16.840.1.113883.6.1
Race & Ethnicity - CDC	urn:oid:2.16.840.1.113883.6.238
SNODENT	urn:oid:2.16.840.1.113883.3.3150
UCUM	urn:oid:2.16.840.1.113883.6.8
USPostalCodes	urn:oid:2.16.840.1.113883.6.231