



HL7 CDA® R2 Implementation Guide: Orthodontic Attachment

Release 1 (US Realm)

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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 orthodontic care.

This publication provides the data model, defined data items and their corresponding code and value sets, if available, specific to a orthodontic 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.

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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 Orthodontic 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 orthodontic 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 Orthodontic Attachments, and detailed documentation of how to use the included CDA templates and supporting terminologies to construct CDA-based Orthodontic Attachments.

- **Chapter 1**—Introduction

- **Chapter 2**—Background on Orthodontic Examinations and Attachments. This section provides background and examples for those unfamiliar with orthodontic examinations or the submission of orthodontic 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 Orthodontic 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 Orthodontic Attachment.
- **Chapter 7**—Entry-Level Templates. This section contains all entry-level templates used in a Orthodontic 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 Orthodontic Examinations and Attachments

2.1 Background: Orthodontic Attachments

The Orthodontic attachment is used to convey information about orthodontic 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 orthodontic examination information which is transferred to electronic systems in the form of unstructured data. The authors respectfully believe that by creating new document types to communicate this data in a structured format, claims processing speed will increase and the overall delivery and payment of care will be more interoperable through the use of standardized document types fit for this purpose.

The orthodontic claim attachment may originate in two ways: as solicited – where the payer requires information after a claim for payment was received and processed, and as unsolicited – where the orthodontic claim attachment is sent when the provider is sending an electronic claim for payment without a request from the payer.

From a technical perspective, it's important to provide a unique identifier (commonly called an Attachment Control Number) that can be used as part of the claim process to keep track of a specific attachment and associate it with a specific claim. In a solicited scenario, implementers should put the Attachment Control Number in the `inFulfillmentOf.order.id`, with `id@root` containing the OID maintained by the Health Plan requesting the Attachment, and `id@extension` containing the Attachment Control Number itself. In an unsolicited scenario, implementers and payer should use the `ClinicalDocument.id` as the Attachment Control Number, and propagate it to the appropriate envelope metadata location. The reason for the difference of location for Attachment Control Number, is that, the produced Attachment in response to a request from a Health Plan is logically similar to a Report being generated in response to an Order (hence `inFulfillmentOf.order.id`). The Attachment Control Number in an unsolicited submission represents a unique document identifier for the organization generating the Attachment, which is the purpose of the `ClinicalDocument.id`.

2.2 Background: Orthodontic Examinations

The Orthodontic Examination is a series of physical observations and measurements starting with an interview with the patient (and parent as appropriate) to gather information concerning history and reasons for treatment, including patient (and or parent) complaints and psychosocial needs. The clinical examination follows to evaluate overall and oral health, jaw function, facial form, dental occlusion, and growth status parameters. Other observations include the functional status (habits, functional shifts of the mandible, temporomandibular joint dysfunction), and any deviations from normal measurement standards. Third, diagnostic records are made and analyzed for dentofacial esthetics and alignment of the jaws and dentition in all three planes of space (transverse, antero-posterior, and vertical). Included in this examination is the evaluation for the presence of pathology, such as, caries, periodontal disease,¹ and hard/soft tissue abnormalities of the head/neck regions. The patient's oral hygiene status is recorded at the examination and every subsequent visit thereafter.

The examination data and information are gathered into a diagnostic database for the patient and used to formulate a problem list/diagnosis. This listing (or diagnosis) is used to formulate a treatment plan including: “the timing of treatment, complexity of the treatment required, predictability of success with given treatment approach, and the patient's (and parents when appropriate) goals and desires.”¹ Patients (and parents when appropriate) are informed of the diagnosis and treatment plan option(s). The provider reviews treatment options and therapeutic limitations (effectiveness based on evidence) with the patient and a treatment option is chosen. These options are usually to the phase of the patient's dentition, namely primary, mixed, or permanent. For example, options can include (but are not limited to): non-extraction or extraction of teeth (primary and/or permanent) and orthodontic alignment of teeth, utilization of growth modification appliances, or and/or orthognathic surgery. Timing of treatment is related to factors such as function, growth status, and psychosocial status. See Figure 1: Examples of Conditions Recorded in Orthodontic Examinations below for examples of the type of conditions recorded in the course of Orthodontic Examinations.

¹ Proffit WR, Fields HW, Sarver DM. *Contemporary Orthodontics*. 5th ed. (Proffit WR, Fields HW, Sarver DM, Ackerman JL, eds.). St Louis: Elsevier; 2013.

Figure 1: Examples of Conditions Recorded in Orthodontic Examinations



Primary Dentition



Permanent Dentition



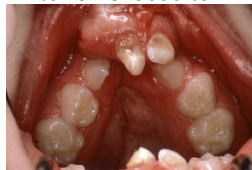
Anterior Open Bite



Crowding



Anterior Crossbite



Bilateral Cleft Lip and Plate



Excessive Overjet



Amelogenesis Imperfecta



Mixed Dentition



Deep Bite



Crowding



Traumatic Deep Bite



Posterior Crossbite



Deep Bite-Tissue Destruction



Jaw Disharmony



Orthodontic treatment contraindicated due to caries

2.3 Sample Orthodontic Examination User Story

Susan Smith is an eleven-year-old girl referred to an orthodontic provider, Dr. Smiles, by her dentist for evaluation of her large overjet and deep impinging overbite. Her mother has brought her in today for what Susan says in her own words, “my buck teeth are really bothering me.” She expresses being teased in school and her mother states Susan’s grades and self-esteem appear to be affected adversely.

Susan is in the 5th grade and lives with her mother, father and one younger brother (Johnny, age 6) at 12345 Pinetree Ln, Fairfax, VA 22022. Other demographic information is collected along with payer information from insurance and any out-of-pocket costs are discussed.

Mrs. Smith provides a medical history for Susan which includes a list of medications and allergies (environmental, medications, and food). The referring dentist provided a panoramic radiograph dated the previous month. Dr. Smiles orders a lateral-cephalometric radiograph and reviews this information and directs her staff to enter dictated information into Susan’s dental record system while she performs a comprehensive orthodontic examination.

The examination begins with an evaluation of the growth patterns of the face and jaw relations followed by a gross examination of the mouth. Notes are made about the general health of the hard and soft tissue structures (including all teeth) of the oral cavity. Radiographs are reviewed and commented on. Dr. Smiles performs a Periodontal Screening and Recording (PSR) and judges that Susan’s oral hygiene is excellent. Dr. Smiles also evaluates Susan’s speech, muscles of facial expression, temporomandibular joint function and occurrence of oral habits.

During the evaluation, Dr. Smiles compiles the problem list/diagnosis. Susan has a retrognathic (mandible) jaw causing a convex facial profile. Dr. Smiles notes that the upper and lower dental arches display 4mm and 5mm of anterior crowding respectively with a tapered maxillary arch form. There is a 10mm-overjet and the dentition is in complete molar and canine bilateral Class II relationships. The midlines are coincident but the posterior maxillary arch is constricted on both sides. Dr. Smiles notes that there will be a bilateral dental posterior cross-bite when the jaws are corrected to Class I. The overbite is 10mm (100%) and is causing tissue damage to the incisive papilla. Dr. Smiles notes that the deep Curve of Spee and mandibular supraeruption of the lower incisors is adding to the vertical problems.

Dr. Smiles observes that Susan is in the zone for optimal growth modification treatment and discusses options with Mrs. Smith for non-extraction, Class II appliance treatment with expansion of the upper arch. Susan also understands and is excited to start treatment right away if possible.

Mrs. Smith and Susan agree to further diagnostic records and Dr. Smiles’ staff proceed to make extra and intraoral photographs along with alginate impressions of the upper and lower dentition with occlusal record (centric relation). In some cases, digital scanning by use of Cone Beam Computed Tomography or digital intraoral scanning is used. This completes the initial

records. Dr. Smiles' staff re-schedules Susan for an appointment to discuss the final diagnosis and all treatment plan options after Dr. Smiles reviews all information gathered.

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 Statements²

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.

² 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)	Allergy - Intolerance Observation (V2)
Allergies and Intolerances Section (entries required) (V2) (required)	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)					
ode @classC	1..1	SHALL		1098-7469	2.16.840.1.113883.5.6 (HL7ActClass) = ACT
ode @moodC	1..1	SHALL		1098-7470	2.16.840.1.113883.5.1001 (ActMood) = EVN
Id template	1..1	SHALL		1098-7471	
@root	1..1	SHALL		1098-10489	2.16.840.1.113883.10.20.22.4.30
on @extensi	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.

Figure 2: Constraint Conformance Including "such that it" Syntax Example

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).

...

3.1.2 Open and Closed Templates³

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 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

3.1.3 Conformance Verbs (Keywords)⁴

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.⁵

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

⁴ 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

⁵ HL7, *Version 3 Publishing Facilitator's Guide*.

<http://www.hl7.org/v3ballot/html/help/pfg/pfg.htm>

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 Cardinality⁶

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
- 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 3: 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 4: 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 Cardinality⁷

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

⁶ 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

⁷ 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

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 Relationships⁸

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.

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 Conformance⁹

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

⁸ 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

⁹ 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

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 5: 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).

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 6: 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*¹⁰ 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

¹⁰ *HL7 Version 3 Interoperability Standards*,
<http://www.hl7.org/memonly/downloads/v3edition.cfm - V32010>

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 7: 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.

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://vts1.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 Types¹¹

All data types used in a CDA document are described in the CDA R2 normative edition.¹² All attributes of a data type are allowed unless explicitly prohibited by this specification.

3.1.9 Document-Level Templates "Properties" Heading¹³

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.

¹¹ 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

¹² *HL7 CDA Release 2*.

http://www.hl7.org/implement/standards/product_brief.cfm?product_id=7

¹³ 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 Notation¹⁴

Instead of the traditional dotted notation used by HL7 to represent RIM classes, this document uses XML Path Language (XPath) notation¹⁵ 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 concatenated with a '/' symbol.

Figure 8: 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 9: XPath Expression Example

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

3.2.2 XML Examples and Sample Documents¹⁶

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.

¹⁴ 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

¹⁵ W3C, XML Path Language. <http://www.w3.org/TR/xpath/>

¹⁶ 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 10: ClinicalDocument Example

```
<ClinicalDocument xmlns="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

5.1 Orthodontic Claim Attachment Document

[ClinicalDocument: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.1.1:2018-08-01 (open)]

Table 4: Orthodontic Claim Attachment Document Contexts

Contained By:	Contains:
	Problem Section (entries optional) (V3) (optional) Orthodontic Observations Section (required) Orthodontic Salzmann Malocclusion Severity Assessment Section (optional)

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

NOTE: All entries in all sections within this document should have a typeCode="DRIV", indicating that no information should be present within the narrative that is not also referenced in one of the entries.

Table 5: Orthodontic Claim Attachment Document Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
ClinicalDocument (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.1.1:2018-08-01)					
templateId	1..1	SHALL		4376-365	
@root	1..1	SHALL		4376-375	2.16.840.1.113883.10.20.39.1.1
@extension	1..1	SHALL		4376-548	2018-08-01
code	1..1	SHALL		4376-366	
@code	1..1	SHALL		4376-376	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90875-6
@codeSystem	1..1	SHALL		4376-433	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
participant	0..*	SHOULD		4376-383	
@typeCode	1..1	SHALL		4376-386	urn:oid:2.16.840.1.113883.5.9 0 (HL7ParticipationType) = CALLBCK
associatedEntity	1..1	SHALL		4376-384	
@classCode	1..1	SHALL		4376-387	urn:oid:2.16.840.1.113883.5.1 10 (HL7RoleClass) = ASSIGNED
addr	0..*	SHOULD		4376-389	
telecom	1..*	SHALL		4376-390	
associatedPerson	1..1	SHALL		4376-385	
	1..*	SHALL		4376-391	

XPath	Card.	Verb	Data Type	CONF#	Value
name					
scopingOrganization	0..1	MAY		4376-392	
documentationOf	1..1	SHALL		4376-393	
serviceEvent	1..1	SHALL		4376-394	
@classCode	1..1	SHALL		4376-397	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = ACT
id	1..*	SHALL		4376-395	
code	1..1	SHALL		4376-396	urn:oid:2.16.840.1.113883.6.1 3 (CDT)
component	1..1	SHALL		4376-371	
structuredBody	1..1	SHALL		4376-372	
component	1..1	SHALL		4376-374	
section	1..1	SHALL		4376-382	Orthodontic Observations Section (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.2.1:2018-08-01)
component	0..1	MAY		4376-903	
section	1..1	SHALL		4376-904	Problem Section (entries optional) (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.2.5:2015-08-01)
component	0..1	MAY		4376-549	
section	1..1	SHALL		4376-550	Orthodontic Salzmann Malocclusion Severity Assessment Section (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.2.2:2018-08-01)

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:4376-365) such that it
 - a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.39.1.1" (CONF:4376-375).
 - b. **SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-548).
4. **SHALL** contain exactly one [1..1] **code** (CONF:4376-366) such that it
 - a. **SHALL** contain exactly one [1..1] **@code**="90875-6" Orthodontic service attachment (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-376).

- 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:4376-433).
- 5. **SHOULD** contain zero or more [0..*] **participant** (CONF:4376-383) such that it

The CALLBCK participant is intended to contain contact information that a recipient of the Orthodontic 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:4376-386).
- b. **SHALL** contain exactly one [1..1] **associatedEntity** (CONF:4376-384).
 - i. This associatedEntity **SHALL** contain exactly one [1..1]
`@classCode="ASSIGNED"` (CodeSystem: HL7RoleClass
urn:oid:2.16.840.1.113883.5.110) (CONF:4376-387).
 - ii. This associatedEntity **SHOULD** contain zero or more [0..*] **addr** (CONF:4376-389).
 - iii. This associatedEntity **SHALL** contain at least one [1..*]
telecom (CONF:4376-390).
 - iv. This associatedEntity **SHALL** contain exactly one [1..1]
associatedPerson (CONF:4376-385) such that it
 - 1. **SHALL** contain at least one [1..*] **name** (CONF:4376-391).
 - v. This associatedEntity **MAY** contain zero or one [0..1]
scopingOrganization (CONF:4376-392).

An orthodontic 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:4376-393) such that it
 - a. **SHALL** contain exactly one [1..1] **serviceEvent** (CONF:4376-394) such that it
 - i. **SHALL** contain exactly one [1..1] `@classCode="ACT"` (CodeSystem: HL7ActClass
urn:oid:2.16.840.1.113883.5.6) (CONF:4376-397).
 - ii. **SHALL** contain at least one [1..*] **id** (CONF:4376-395).
 - 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:4376-396).
- 7. **SHALL** contain exactly one [1..1] **component** (CONF:4376-371) such that it
 - a. **SHALL** contain exactly one [1..1] **structuredBody** (CONF:4376-372).
 - i. This structuredBody **SHALL** contain exactly one [1..1]
component (CONF:4376-374) such that it
 - 1. **SHALL** contain exactly one [1..1] Orthodontic Observations Section (identifier:

- urn:hl7ii:2.16.840.1.113883.10.20.39.2.1:2018-08-01) (CONF:4376-382).
- ii. This structuredBody **MAY** contain zero or one [0..1] **component** (CONF:4376-903) such that it
1. **SHALL** contain exactly one [1..1] **Problem Section (entries optional) (V3)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.2.5:2015-08-01) (CONF:4376-904).
- iii. This structuredBody **MAY** contain zero or one [0..1] **component** (CONF:4376-549) such that it
1. **SHALL** contain exactly one [1..1] **Orthodontic Salzmann Malocclusion Severity Assessment Section** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.2.2:2018-08-01) (CONF:4376-550).

Figure 11: Orthodontic Claims Attachment Document Service Event Sample

```

<serviceEvent classCode="PRCP">
  <!-- This ID should be the "Attachment Re-association ID" used to
  correlate this Attachment to a claim -->
  <id root="9aacccl9-7083-495b-9547-ac7f00a15da1"/>
  <code code="D8090" displayName="Comprehensive orthodontic treatment of
  the adult dentition" 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="20180401"/>
    <high value="20180601"/>
    <!-- The high value represents when the summarized provision of care
    being ended. -->
  </effectiveTime>
  <performer typeCode="PRF">
    <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>Otto</given>
          <family>Orthodontist</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 Orthodontic 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)]

Table 6: US Realm Header (V3) Contexts

Contained By:	Contains:
	US Realm Patient Name (PTN.US.FIELDDED) (required) US Realm Address (AD.US.FIELDDED) (optional) US Realm Address (AD.US.FIELDDED) (required) US Realm Person Name (PN.US.FIELDDED) (optional) US Realm Date and Time (DTM.US.FIELDDED) (optional) US Realm Date and Time (DTM.US.FIELDDED) (required)

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.FIELDDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.4)

XPath	Card.	Verb	Data Type	CONF#	Value
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.FIELDDED) (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 Patient Name (PTN.US.FIELDDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1)
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 Value Set)
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)

XPath	Card.	Verb	Data Type	CONF#	Value
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.FIELDDED) (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.FIELDDED) (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)
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	

XPath	Card.	Verb	Data Type	CONF#	Value
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.FIELDDED) (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.FIELDDED) (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)
addr	1..*	SHALL		1198-5452	US Realm Address (AD.US.FIELDDED) (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.FIELDDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1)
	0..1	SHOULD		1198-	

XPath	Card.	Verb	Data Type	CONF#	Value
assignedAuthoringDevice				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)
addr	1..*	SHALL		1198-5460	US Realm Address (AD.US.FIELDDED) (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.FIELDDED) (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)
addr	1..*	SHALL		1198-8220	US Realm Address (AD.US.FIELDDED) (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.FIELDDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1)

XPath	Card.	Verb	Data Type	CONF#	Value
					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.FIELDDED) (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.FIELDDED) (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-	US Realm Date and Time (DTM.US.FIELDDED) (identifier:

XPath	Card.	Verb	Data Type	CONF#	Value
				5580	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
sdct: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)
addr	1..*	SHALL		1198-5589	US Realm Address (AD.US.FIELDDED) (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.FIELDDED) (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.FIELDDED) (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
sdct:signatureText	0..1	MAY		1198-30811	
assignedEntity	1..1	SHALL		1198-5612	

XPath	Card.	Verb	Data Type	CONF#	Value
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:2.16.840.1.114222.4.1 1.1066 (Healthcare Provider Taxonomy)
addr	1..*	SHALL		1198-5616	US Realm Address (AD.US.FIELDDED) (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.FIELDDED) (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:2.16.840.1.113883.1.1 1.19601 (x_ServiceEventPerformer)

XPath	Card.	Verb	Data Type	CONF#	Value
functionCode	0..1	MAY		1198-16818	
@code	0..1	SHOULD		1198-32889	urn:oid:2.16.840.1.113762.1.4.1099.30 (Care Team Member Function)
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:2.16.840.1.114222.4.1.1.1066 (Healthcare Provider Taxonomy)
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).
 - b. This **code** **SHALL** be drawn from the LOINC document type ontology (LOINC codes where SCALE = DOC) (CONF:1198-32948).
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.FIELDDED)** (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 **DYNAMIC** (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.FIELDDED)** (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 Patient Name \(PTN.US.FIELDDED\)](#)
(identifier:
urn:oid:2.16.840.1.113883.10.20.22.5.1)
(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..*] **sdct:raceCode**, which **SHALL** be selected from ValueSet [Race Value Set](#)
urn:oid:2.16.840.1.113883.1.11.14914 **DYNAMIC** (CONF:1198-7263).

Note: The sdct: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 \(AD.US.FIELDDED\)](#) (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 \(PN.US.FIELDDED\)](#) (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. If country is US, this addr **SHALL** contain exactly one [1..1] state, which **SHALL** be selected from ValueSet [StateValueSet](#)
urn:oid:2.16.840.1.113883.3.88.12.80.12.80.1 **DYNAMIC** (CONF:1198-5402).
Note: A nullFlavor of 'UNK' may be used if the state is unknown.
 3. If country is US, this addr **MAY** contain zero or one [0..1] postalCode, which **SHALL** be selected from ValueSet [PostalCode](#)
urn:oid:2.16.840.1.113883.3.88.12.80.12.80.2 **DYNAMIC** (CONF:1198-5403).
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.FIELDDED) (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.FIELDDED) (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](#)
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 \(AD.US.FIELDDED\)](#) (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 \(PN.US.FIELDDED\)](#) (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](#) 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 \(AD.US.FIELDDED\)](#) (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 \(PN.US.FIELDDED\)](#) (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](#)

- 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 \(AD.US.FIELDDED\)](#) (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 \(PN.US.FIELDDED\)](#) (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 \(AD.US.FIELDDED\)](#) (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 \(PN.US.FIELDDED\)](#) (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 \(DTM.US.FIELDDED\)](#) (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](#) 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 \(AD.US.FIELDDED\)](#) (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.FIELDDED)** (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.FIELDDED)** (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

urn:oid:2.16.840.1.114222.4.11.1066 **DYNAMIC**
(CONF:1198-16826).

- iii. This assignedEntity **SHALL** contain at least one [1..*] US Realm Address (AD.US.FIELDDED) (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) (identifier: 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.FIELDDED) (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 ServiceEventPerformer](#) 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 [Care Team Member Function](#) urn:oid:2.16.840.1.113762.1.4.1099.30 **DYNAMIC** (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

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).

Table 8: Race Value Set

Value Set: Race Value Set urn:oid:2.16.840.1.113883.1.11.14914 (Clinical Focus: All concepts that can describe a person's "race" as defined by the United States Bureau of Census),(Data Element Scope: Personal Demographic information, can be multiple.),(Inclusion Criteria: All descendant concepts from the concept "1000-9 Race", excluding that root concept, as derived from the Race and Ethnicity - CDC code system.),(Exclusion Criteria: Concepts that are not a descendant of "Race", therefore, no concepts descendant from "2133-7 Ethnicity". Also the root concept "Race".) This value set was imported on 6/29/2019 with a version of 20190522. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.14914/expansion			
Code	Code System	Code System OID	Print Name
...			

Table 9: HL7 BasicConfidentialityKind

Value Set: HL7 BasicConfidentialityKind urn:oid:2.16.840.1.113883.1.11.16926 (Clinical Focus: Commonly used confidentiality constraints placed upon clinical documents),(Data Element Scope:),(Inclusion Criteria:),(Exclusion Criteria:) This value set was imported on 6/25/2019 with a version of 20190425. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.16926/expansion			
Code	Code System	Code System OID	Print Name
...			

Table 10: Language

Value Set: Language urn:oid:2.16.840.1.113883.1.11.11526 A value set of codes defined by Internet RFC 5646. Use 2 character code if one exists. Use 3 character code if a 2 character code does not exist. Including type = region is allowed See http://www.iana.org/assignments/language-subtag-registry/language-subtag-registry Value Set Source: http://www.loc.gov/standards/iso639-2/php/code_list.php			
Code	Code System	Code System OID	Print Name
...			

Table 11: 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 12: Administrative Gender (HL7 V3)

Value Set: Administrative Gender (HL7 V3) urn:oid:2.16.840.1.113883.1.11.1 (Clinical Focus: The gender of a person used for administrative purposes (as opposed to clinical gender)),(Data Element Scope:),(Inclusion Criteria: All codes in the HL7 V3 AdministrativeGender code system),(Exclusion Criteria:) This value set was imported on 6/24/2019 with a version of 20190425. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.1/expansion			
Code	Code System	Code System OID	Print Name
...			

Table 13: Marital Status

Value Set: Marital Status urn:oid:2.16.840.1.113883.1.11.12212 (Clinical Focus: The domestic partnership status of a person.),(Data Element Scope: Marital Status),(Inclusion Criteria: All codes in the HL7 MaritalStatus code system),(Exclusion Criteria: Any non-selectable codes) This value set was imported on 6/25/2019 with a version of 20190517. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.12212/expansion			
Code	Code System	Code System OID	Print Name
...			

Table 14: Religious Affiliation

Value Set: Religious Affiliation urn:oid:2.16.840.1.113883.1.11.19185 (Clinical Focus: A person's faith affiliation),(Data Element Scope:),(Inclusion Criteria: All codes in the HL7 ReligiousAffiliation code system),(Exclusion Criteria:) This value set was imported on 6/29/2019 with a version of 20190425. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.19185/expansion			
Code	Code System	Code System OID	Print Name
...			

Table 15: Race Category Excluding Nulls

Value Set: Race Category Excluding Nulls urn:oid:2.16.840.1.113883.3.2074.1.1.3 (Clinical Focus: The top-level "Race" concepts as defined by US Office of Management and Budget (OMB), excluding "Other race". All "Race" concepts in the Race and Ethnicity - CDC code system roll-up to one of these codes.), (Data Element Scope: Demographic categorization of a person's race (can be multiple).), (Inclusion Criteria: Direct children of the "1000-9 Race" concept in the Race and Ethnicity Code system.), (Exclusion Criteria: Specifically exclude "2131-1 Other Race" and any descendant of the concepts defined in the inclusion criteria.) This value set was imported on 6/29/2019 with a version of 20180618. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.3.2074.1.1.3/expansion			
Code	Code System	Code System OID	Print Name
...			

Table 16: Ethnicity

Value Set: Ethnicity urn:oid:2.16.840.1.114222.4.11.837 (Clinical Focus:), (Data Element Scope:), (Inclusion Criteria:), (Exclusion Criteria:) This value set was imported on 6/24/2019 with a version of 20180618. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.114222.4.11.837/expansion			
Code	Code System	Code System OID	Print Name
...			

Table 17: 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 (Clinical Focus: 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.), (Data Element Scope: C-CDA v2.1 Any person role such as Guardian and associatedEntity. Many @code references.), (Inclusion Criteria: Union of: (Descendants of _PersonalRelationshipRoleType OR Descendants of RESPRSN)), (Exclusion Criteria: not in the inclusion criteria) This value set was imported on 6/26/2019 with a version of 20190425. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.11.20.12.1/expansion			
Code	Code System	Code System OID	Print Name
...			

Table 18: 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: https://www.iso.org/obp/ui/#iso:pub:PUB500001:en			
Code	Code System	Code System OID	Print Name
...			

Table 19: LanguageAbilityMode

Value Set: LanguageAbilityMode urn:oid:2.16.840.1.113883.1.11.12249 (Clinical Focus: Channels for expressing and receiving human language),(Data Element Scope:),(Inclusion Criteria:),(Exclusion Criteria:) This value set was imported on 6/25/2019 with a version of 20190425. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.12249/expansion			
Code	Code System	Code System OID	Print Name
...			

Table 20: LanguageAbilityProficiency

Value Set: LanguageAbilityProficiency urn:oid:2.16.840.1.113883.1.11.12199 (Clinical Focus: A person's level of proficiency in a language),(Data Element Scope:),(Inclusion Criteria:),(Exclusion Criteria:) This value set was imported on 6/25/2019 with a version of 20190425. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.12199/expansion			
Code	Code System	Code System OID	Print Name
...			

Table 21: Detailed Ethnicity

Value Set: Detailed Ethnicity urn:oid:2.16.840.1.114222.4.11.877 (Clinical Focus: All concepts that can describe a person's "ethnicity" as defined by the United States Bureau of Census. This includes the US Office of Management and Budget (OMB) two top-level ethnicity categories, plus all the more detailed descendant ethnicity concepts used by the US Bureau of Census.),(Data Element Scope: Personal Demographic information, can be multiple.),(Inclusion Criteria: All descendant concepts from the concept "2133-7 Ethnicity", excluding that root concept, as derived from the Race and Ethnicity - CDC code system.),(Exclusion Criteria: Concepts that are not a descendant of "2133-7 Ethnicity", therefore, no concepts descendant from "1000-9 Race". Also the root concept "Ethnicity".) This value set was imported on 6/24/2019 with a version of 20190518. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.114222.4.11.877/expansion			
Code	Code System	Code System OID	Print Name
...			

Table 22: Healthcare Provider Taxonomy

Value Set: Healthcare Provider Taxonomy urn:oid:2.16.840.1.114222.4.11.1066 (Clinical Focus: Represent the "type" of health care provider individual or organization using the National Uniform Claims Committee (NUCC) code system),(Data Element Scope: The assignedEntity attribute),(Inclusion Criteria: All codes in the NUCC Provider Taxonomy code system),(Exclusion Criteria: None) This value set was imported on 6/24/2019 with a version of 20190521. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.114222.4.11.1066/expansion			
Code	Code System	Code System OID	Print Name
...			

Table 23: 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 24: 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/in_frastructure/vocabulary/vocabulary.html			
Code	Code System	Code System OID	Print Name
...			

Table 25: Care Team Member Function

<p>Value Set: Care Team Member Function urn:oid:2.16.840.1.113762.1.4.1099.30</p> <p>(Clinical Focus: This set of concepts describes the function performed on a patient-centered care team. The functions on a Care Team are the like defined positions on a sports team, ie. the quarterback, the lineman, or in soccer, the goalie. This value set groups both the old code system and the new code system to support a transition to the new code system - SNOMED CT.),(Data Element Scope: A functional role on a patient's care team.),(Inclusion Criteria: The set of commonly played roles on a patient-centered care team.),(Exclusion Criteria: Functional roles on care teams that are not patient-centered. For example, hospital's may define teams of practitioners who fill roles that are relevant to the function of the hospital's operation. These roles would not be included when they are not roles that would be plaid on a patient-centered care team.)</p> <p>This value set was imported on 6/24/2019 with a version of 20190425.</p> <p>Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113762.1.4.1099.30/expansion</p>			
Code	Code System	Code System OID	Print Name
106289002	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Dentist (occupation)
106292003	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Professional nurse (occupation)
106328005	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Social worker (occupation)
116154003	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Patient (person)
11911009	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Nephrologist (occupation)
11935004	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Obstetrician (occupation)
133932002	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Caregiver (person)
158965000	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Medical practitioner (occupation)
158967008	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Consultant physician (occupation)
159003003	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	School nurse (occupation)
...			

Figure 12: 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 13: 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="1.1.1.1.1.1.1.2" />
        <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>

```

```

        </providerOrganization>
    </patientRole>
</recordTarget>

```

Figure 14: 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 15: 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 16: Assigned Health Care Provider informant Example

```
<informant>
  <assignedEntity>
    <id extension="8888888888" 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 17: 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 18: 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 19: 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 20: Digital signature Example

```
<sdtc:signatureText mediaType="text/xml"
representation="B64">omSJUEdmde9j44zmMiromSJUEdmde9j44zmMirdMDSsWdIJdksIJR337
3jeu83

    6edjzMMIjdMDSsWdIJdksIJR3373jeu83MNYD83jmMdomSJUEdmde9j44zmMir
    ...
MNYD83jmMdomSJUEdmde9j44zmMir6edjzMMIjdMDSsWdIJdksIJR3373jeu83

    4zmMir6edjzMMIjdMDSsWdIJdksIJR3373jeu83==</sdtc:signatureText>
```

Figure 21: 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 22: 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 23: 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 24: 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 25: 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="1.1.1.1.1.1.1.2" />
      <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 26: 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" />
      </assignedEntity>
      <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="1.1.1.1.1.1.1.2" />
        <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 27: 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

6.1 Orthodontic Observations Section

```
[section: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.2.1:2018-08-01 (open)]
```

Table 26: Orthodontic Observations Section Contexts

Contained By:	Contains:
Orthodontic Claim Attachment Document (required)	Note Activity (optional) Orthodontic Habits Observation (optional) Orthodontic Severe Traumatic Deviations Observation (optional) Orthodontic Asymmetry of Lower Face Observation (optional) Orthodontic Condylar Abnormality Observation (optional) Craniofacial Anomaly Observation (optional) Orthognathic Surgery Possibility Observation (optional) Orthodontic Precondition Observation (optional) Dental Abnormality Impacting Orthodontic Treatment Observation (optional) Orthodontic Diagnostic Feature Observation (optional) Dentition Stage Observation (optional) Airway Problems Impacting Orthodontic Treatment Observation (optional) Orthodontic Benefits Requested Observation (optional) Dental Overjet Observation (optional) Dental Overbite Observation (optional) Dental Openbite Observation (optional) Dental Spacing Observation (optional) Dental Crowding Observation (optional) Labiolingual Deviation Observation (optional)

The Orthodontic Observations Section contains narratives and discrete observations captured as part of Orthodontic care that are relevant to substantiating a claim to a payer, other than measurements specific to calculating a Salzmann Scoring Index, which are in their own section.

The Note Activity template is used to contain the free-text submission of up to 1000 characters from the provider as required by the ANSI/ADA Standard No. 1079. 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:

“The patient’s overall health is good despite obese state. She admits to drinking 12+ 20oz Cokes a day and acknowledges not following a regular oral hygiene regimen. I am referring her to the Oral-Maxillofacial surgeon for consult due to her Mandibular deficiency.”

Table 27: Orthodontic Observations Section Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
section (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.2.1:2018-08-01)					
templateId	1..1	SHALL		4376-1	
@root	1..1	SHALL		4376-3	2.16.840.1.113883.10.20.39.2.1
@extension	1..1	SHALL		4376-4	2018-08-01
code	1..1	SHALL		4376-2	
@code	1..1	SHALL		4376-5	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90874-9
@codeSystem	1..1	SHALL		4376-6	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
title	1..1	SHALL		4376-7	
text	1..1	SHALL		4376-8	
entry	0..1	MAY		4376-129	
@typeCode	1..1	SHALL		4376-131	urn:oid:2.16.840.1.113883.5.1 002 (HL7ActRelationshipType) = DRIV
act	1..1	SHALL		4376-130	Note Activity (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.202:2016-11-01)
entry	0..1	MAY		4376-134	
@typeCode	1..1	SHALL		4376-143	urn:oid:2.16.840.1.113883.5.1 002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-934	Orthodontic Condylar Abnormality Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.6:2018-08-01)
entry	0..*	MAY		4376-147	
@typeCode	1..1	SHALL		4376-151	urn:oid:2.16.840.1.113883.5.1 002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-582	Craniofacial Anomaly Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.11:2018-08-01)
entry	0..1	MAY		4376-149	
@typeCode	1..1	SHALL		4376-152	urn:oid:2.16.840.1.113883.5.1 002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-935	Orthognathic Surgery Possibility Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.12:2018-08-01)

XPath	Card.	Verb	Data Type	CONF#	Value
					0.20.39.3.8:2018-08-01
entry	0..1	MAY		4376-136	
@typeCode	1..1	SHALL		4376-144	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-936	Orthodontic Asymmetry of Lower Face Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.5:2018-08-01)
entry	0..1	MAY		4376-138	
@typeCode	1..1	SHALL		4376-145	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-937	Orthodontic Severe Traumatic Deviations Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.4:2018-08-01)
entry	0..1	MAY		4376-140	
@typeCode	1..1	SHALL		4376-146	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-938	Orthodontic Habits Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.3:2018-08-01)
entry	0..1	MAY		4376-587	
@typeCode	1..1	SHALL		4376-591	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-939	Airway Problems Impacting Orthodontic Treatment Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.32:2018-08-01)
entry	0..1	MAY		4376-583	
@typeCode	1..1	SHALL		4376-588	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-584	Dentition Stage Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.14:2018-08-01)
entry	0..*	MAY		4376-210	
@typeCode	1..1	SHALL		4376-216	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV

XPath	Card.	Verb	Data Type	CONF#	Value
observation	1..1	SHALL		4376-211	Orthodontic Precondition Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.9:2018-08-01)
entry	0..*	MAY		4376-212	
@typeCode	1..1	SHALL		4376-217	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-213	Dental Abnormality Impacting Orthodontic Treatment Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.12:2018-08-01)
entry	0..*	MAY		4376-214	
@typeCode	1..1	SHALL		4376-218	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-215	Orthodontic Diagnostic Feature Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.10:2018-08-01)
entry	0..1	MAY		4376-585	
@typeCode	1..1	SHALL		4376-589	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-586	Orthodontic Benefits Requested Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.13:2018-08-01)
entry	0..1	MAY		4376-680	
@typeCode	1..1	SHALL		4376-692	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-681	Dental Overjet Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.15:2018-08-01)
entry	0..*	MAY		4376-682	
@typeCode	1..1	SHALL		4376-693	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-683	Labiolingual Deviation Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.20:2018-08-01)
entry	0..*	MAY		4376-684	

XPath	Card.	Verb	Data Type	CONF#	Value
@typeCode	1..1	SHALL		4376-694	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-685	Dental Crowding Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.19:2018-08-01)
entry	0..*	MAY		4376-686	
@typeCode	1..1	SHALL		4376-695	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-687	Dental Spacing Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.18:2018-08-01)
entry	0..1	MAY		4376-688	
@typeCode	1..1	SHALL		4376-696	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-689	Dental Openbite Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.17:2018-08-01)
entry	0..1	MAY		4376-690	
@typeCode	1..1	SHALL		4376-697	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = DRIV
observation	1..1	SHALL		4376-691	Dental Overbite Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.16:2018-08-01)

33. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-1) such that it

- a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.39.2.1" (CONF:4376-3).
- b. **SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-4).

34. **SHALL** contain exactly one [1..1] **code** (CONF:4376-2) such that it

- a. **SHALL** contain exactly one [1..1] **@code**="90874-9" Orthodontic evaluation summary Document (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-5).
- 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:4376-6).

35. **SHALL** contain exactly one [1..1] **title** (CONF:4376-7).

36. **SHALL** contain exactly one [1..1] **text** (CONF:4376-8).

37. **MAY** contain zero or one [0..1] **entry** (CONF:4376-129) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-131).
 - b. **SHALL** contain exactly one [1..1] Note Activity (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.202:2016-11-01) (CONF:4376-130).
38. **MAY** contain zero or one [0..1] **entry** (CONF:4376-134) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-143).
 - b. **SHALL** contain exactly one [1..1] Orthodontic Condylar Abnormality Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.6:2018-08-01) (CONF:4376-934).
39. **MAY** contain zero or more [0..*] **entry** (CONF:4376-147) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-151).
 - b. **SHALL** contain exactly one [1..1] Craniofacial Anomaly Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.11:2018-08-01) (CONF:4376-582).
40. **MAY** contain zero or one [0..1] **entry** (CONF:4376-149) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-152).
 - b. **SHALL** contain exactly one [1..1] Orthognathic Surgery Possibility Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.8:2018-08-01) (CONF:4376-935).
41. **MAY** contain zero or one [0..1] **entry** (CONF:4376-136) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-144).
 - b. **SHALL** contain exactly one [1..1] Orthodontic Asymmetry of Lower Face Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.5:2018-08-01) (CONF:4376-936).
42. **MAY** contain zero or one [0..1] **entry** (CONF:4376-138) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-145).
 - b. **SHALL** contain exactly one [1..1] Orthodontic Severe Traumatic Deviations Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.4:2018-08-01) (CONF:4376-937).

43. **MAY** contain zero or one [0..1] **entry** (CONF:4376-140) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-146).
 - b. **SHALL** contain exactly one [1..1] [Orthodontic Habits Observation](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.3:2018-08-01) (CONF:4376-938).
44. **MAY** contain zero or one [0..1] **entry** (CONF:4376-587) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-591).
 - b. **SHALL** contain exactly one [1..1] [Airway Problems Impacting Orthodontic Treatment Observation](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.32:2018-08-01) (CONF:4376-939).
45. **MAY** contain zero or one [0..1] **entry** (CONF:4376-583) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-588).
 - b. **SHALL** contain exactly one [1..1] [Dentition Stage Observation](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.14:2018-08-01) (CONF:4376-584).
46. **MAY** contain zero or more [0..*] **entry** (CONF:4376-210) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-216).
 - b. **SHALL** contain exactly one [1..1] [Orthodontic Precondition Observation](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.9:2018-08-01) (CONF:4376-211).
47. **MAY** contain zero or more [0..*] **entry** (CONF:4376-212) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-217).
 - b. **SHALL** contain exactly one [1..1] [Dental Abnormality Impacting Orthodontic Treatment Observation](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.12:2018-08-01) (CONF:4376-213).
48. **MAY** contain zero or more [0..*] **entry** (CONF:4376-214) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-218).
 - b. **SHALL** contain exactly one [1..1] [Orthodontic Diagnostic Feature Observation](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.13:2018-08-01) (CONF:4376-214).

urn:hl7ii:2.16.840.1.113883.10.20.39.3.10:2018-08-01)
(CONF:4376-215).

49. **MAY** contain zero or one [0..1] **entry** (CONF:4376-585) such that it
- SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-589).
 - SHALL** contain exactly one [1..1] [Orthodontic Benefits Requested Observation](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.13:2018-08-01) (CONF:4376-586).
50. **MAY** contain zero or one [0..1] **entry** (CONF:4376-680) such that it
- SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-692).
 - SHALL** contain exactly one [1..1] [Dental Overjet Observation](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.15:2018-08-01) (CONF:4376-681).
51. **MAY** contain zero or more [0..*] **entry** (CONF:4376-682) such that it
- SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-693).
 - SHALL** contain exactly one [1..1] [Labiolingual Deviation Observation](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.20:2018-08-01) (CONF:4376-683).
52. **MAY** contain zero or more [0..*] **entry** (CONF:4376-684) such that it
- SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-694).
 - SHALL** contain exactly one [1..1] [Dental Crowding Observation](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.19:2018-08-01) (CONF:4376-685).
53. **MAY** contain zero or more [0..*] **entry** (CONF:4376-686) such that it
- SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-695).
 - SHALL** contain exactly one [1..1] [Dental Spacing Observation](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.18:2018-08-01) (CONF:4376-687).
54. **MAY** contain zero or one [0..1] **entry** (CONF:4376-688) such that it
- SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:4376-696).

- b. **SHALL** contain exactly one [1..1] Dental Openbite Observation
(identifier:
urn:hl7ii:2.16.840.1.113883.10.20.39.3.17:2018-08-01)
(CONF:4376-689).
55. **MAY** contain zero or one [0..1] **entry** (CONF:4376-690) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CodeSystem:
HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002)
(CONF:4376-697).
 - b. **SHALL** contain exactly one [1..1] Dental Overbite Observation
(identifier:
urn:hl7ii:2.16.840.1.113883.10.20.39.3.16:2018-08-01)
(CONF:4376-691).

Figure 28: Orthodontic Observations Section Sample

```
<section>
  <templateId root="2.16.840.1.113883.10.20.39.2.1" extension="2018-08-01"
/>
  <code code="90874-9" codeSystem="2.16.840.1.113883.6.1" />
  <title>Orthodontic Observations</title>
  <text>
    <table>
      <thead>
        <tr>
          <th>Observation</th>
          <th>Value</th>
        </tr>
      </thead>
      <tbody>
        <tr ID="NoteObservation">
          <td>Orthodontic Narrative</td>
          <td>11 year old female with skeletal and dental class II
malocclusion</td>
        </tr>
        <tr ID="OrthodonticHabits">
          <td>Orthodontic Habits</td>
          <td>Reported thumb sucking habit until 3 years ago</td>
        </tr>
        <tr ID="TraumaticDeviations">
          <td>Traumatic Deviations</td>
          <td>N/A</td>
        </tr>
        <tr ID="AsymmetryOfLowerFace">
          <td>Asymmetry of Lower Face</td>
          <td>Symmetric, but displays a long lower face height</td>
        </tr>
        <tr ID="CondylarAbnormality">
          <td>Condylar Abnormality</td>
          <td>N/A</td>
        </tr>
        <tr ID="CraniofacialAnomalies">
          <td>Craniofacial Anomalies</td>
          <td>N/A</td>
        </tr>
        <tr ID="OrthognathicSurgeryPossibility">
          <td>Orthognathic Surgery Possibility</td>
          <td>Possible, but after growth cessation</td>
        </tr>
        <tr ID="AirwayProblems">
          <td>Airway Problems</td>
          <td>N/A</td>
        </tr>
        <tr ID="DentitionStage">
          <td>Dentition Stage</td>
          <td>Transitional</td>
        </tr>
        <tr ID="OrthodonticPreconditions">
          <td>Treatment Preconditions</td>
          <td>None</td>
        </tr>
        <tr ID="DentalAbnormality1">
          <td>Dental Abnormality</td>
```

```

        <td>None</td>
      </tr>
      <tr ID="DiagnosticFeature1">
        <td>Diagnostic Feature</td>
        <td>Deep Impinging Overbite with destruction of soft
tissue</td>
      </tr>
      <tr ID="DiagnosticFeature2">
        <td>Diagnostic Feature</td>
        <td>Lip incompetence due to horizontal overbite</td>
      </tr>
      <tr ID="DiagnosticFeature3">
        <td>Diagnostic Feature</td>
        <td>Bimaxillary protrusion</td>
      </tr>
      <tr ID="BenefitsRequested">
        <td>Benefits Requested</td>
        <td>Comprehensive Treatment</td>
      </tr>
      <tr ID="Overjet">
        <td>Overjet</td>
        <td>10mm</td>
      </tr>
      <tr ID="Overbite">
        <td>Overbite</td>
        <td>10mm</td>
      </tr>
      <tr ID="Crowding1">
        <td>Arch Crowding</td>
        <td>Anterior Maxilla - 4mm</td>
      </tr>
      <tr ID="Crowding2">
        <td>Arch Crowding</td>
        <td>Anterior Mandible - 5mm</td>
      </tr>
      <tr ID="LabiolingualDeviation">
        <td>Labiolingual Deviation</td>
        <td>6mm</td>
      </tr>
    </tbody>
  </table>
</text>
<entry typeCode="DRIV">
  <!-- *** Note Activity *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Orthodontic Condylar Abnormality Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Craniofacial Anomaly Observation *** -->
  ...

```

```

</entry>
<entry typeCode="DRIV">
    <!-- *** Orthognathic Surgery Possibility Observation *** --->
    ...

</entry>
<entry typeCode="DRIV">
    <!-- *** Orthodontic Asymmetry of Lower Face Observation *** --->
    ...

</entry>
<entry typeCode="DRIV">
    <!-- *** Orthodontic Severe Traumatic Deviations Observation *** ---
>
    ...

</entry>
<entry typeCode="DRIV">
    <!-- *** Orthodontic Habits Observation *** --->
    ...

</entry>
<entry typeCode="DRIV">
    <!-- *** Airway Problems Impacting Orthodontic Treatment Observation
*** --->
    ...

</entry>
<entry typeCode="DRIV">
    <!-- *** Dentition Stage Observation *** --->
    ...

</entry>
<entry typeCode="DRIV">
    <!-- *** Orthodontic Preconditions Observation *** --->
    ...

</entry>
<entry typeCode="DRIV">
    <!-- *** Dental Abnormality Impacting Orthodontic Treatment
Observation *** --->
    ...

</entry>
<entry typeCode="DRIV">
    <!-- *** Orthodontic Diagnostic Feature Observation *** --->
    ...

```

```

</entry>
<entry typeCode="DRIV">
  <!-- *** Orthodontic Benefits Requested Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Dental Overjet Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Labiolingual Deviation Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Dental Crowding Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Dental Spacing Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Dental Openbite Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Dental Overbite Observation *** -->
  ...

</entry>
</section>

```

6.2 Orthodontic Salzmann Malocclusion Severity Assessment Section

[section: identifier

urn:hl7ii:2.16.840.1.113883.10.20.39.2.2:2018-08-01 (open)]

Table 28: Orthodontic Salzmann Malocclusion Severity Assessment Section Contexts

Contained By:	Contains:
Orthodontic Claim Attachment Document (optional)	Salzmann Index Observation (optional) Dental Missing Teeth Count Observation (optional) Dental Crowded Teeth Count Observation (optional) Dental Rotated Teeth Count Observation (optional) Dental Open-Spaced Teeth Count Observation (optional) Dental Closed-Spaced Teeth Count Observation (optional) Dental Overjet Teeth Count Observation (optional) Dental Overbite Teeth Count Observation (optional) Dental Crossbite Teeth Count Observation (optional) Dental Openbite Teeth Count Observation (optional) Dental Posterior Inter-Arch Deviation Observation (optional)

The Orthodontic Salzmann Malocclusion Severity Assessment Section contains discrete observations captured as part of Orthodontic care that are used specifically for calculating a Salzmann Scoring Index for a patient.

Table 29: Orthodontic Salzmann Malocclusion Severity Assessment Section Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
section (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.2.2:2018-08-01)					
templateId	1..1	SHALL		4376-153	
@root	1..1	SHALL		4376-155	2.16.840.1.113883.10.20.39.2.2
@extension	1..1	SHALL		4376-156	2018-08-01
code	1..1	SHALL		4376-154	
@code	1..1	SHALL		4376-157	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90873-1
@codeSystem	1..1	SHALL		4376-158	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
title	1..1	SHALL		4376-159	
text	1..1	SHALL		4376-160	
entry	0..1	MAY		4376-870	
@typeCode	1..1	SHALL		4376-892	DRIV
observation	1..1	SHALL		4376-871	Salzmann Index Observation

XPath	Card.	Verb	Data Type	CONF#	Value
					(identifier: urn:hl7ii:2.16.840.1.113883.1 0.20.39.3.21:2018-08-01)
entry	0..*	MAY		4376-872	
@typeCode	1..1	SHALL		4376-893	DRIV
observation	1..1	SHALL		4376-873	Dental Missing Teeth Count Observation (identifier: urn:hl7ii:2.16.840.1.113883.1 0.20.39.3.22:2018-08-01)
entry	0..*	MAY		4376-874	
@typeCode	1..1	SHALL		4376-894	DRIV
observation	1..1	SHALL		4376-875	Dental Posterior Inter-Arch Deviation Observation (identifier: urn:hl7ii:2.16.840.1.113883.1 0.20.39.3.31:2018-08-01)
entry	0..1	MAY		4376-876	
@typeCode	1..1	SHALL		4376-895	DRIV
observation	1..1	SHALL		4376-877	Dental Openbite Teeth Count Observation (identifier: urn:hl7ii:2.16.840.1.113883.1 0.20.39.3.30:2018-08-01)
entry	0..1	MAY		4376-878	
@typeCode	1..1	SHALL		4376-896	DRIV
observation	1..1	SHALL		4376-879	Dental Crossbite Teeth Count Observation (identifier: urn:hl7ii:2.16.840.1.113883.1 0.20.39.3.29:2018-08-01)
entry	0..1	MAY		4376-880	
@typeCode	1..1	SHALL		4376-897	DRIV
observation	1..1	SHALL		4376-881	Dental Overbite Teeth Count Observation (identifier: urn:hl7ii:2.16.840.1.113883.1 0.20.39.3.28:2018-08-01)
entry	0..1	MAY		4376-882	
@typeCode	1..1	SHALL		4376-898	DRIV
observation	1..1	SHALL		4376-883	Dental Overjet Teeth Count Observation (identifier: urn:hl7ii:2.16.840.1.113883.1 0.20.39.3.27:2018-08-01)
entry	0..*	MAY		4376-884	
@typeCode	1..1	SHALL		4376-899	DRIV
observation	1..1	SHALL		4376-885	Dental Closed-Spaced Teeth Count Observation (identifier: urn:hl7ii:2.16.840.1.113883.1 0.20.39.3.26:2018-08-01)
entry	0..*	MAY		4376-886	

XPath	Card.	Verb	Data Type	CONF#	Value
@typeCode	1..1	SHALL		4376-900	DRIV
observation	1..1	SHALL		4376-887	Dental Open-Spaced Teeth Count Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.25:2018-08-01)
entry	0..*	MAY		4376-888	
@typeCode	1..1	SHALL		4376-901	DRIV
observation	1..1	SHALL		4376-889	Dental Rotated Teeth Count Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.24:2018-08-01)
entry	0..*	MAY		4376-890	
@typeCode	1..1	SHALL		4376-902	DRIV
observation	1..1	SHALL		4376-891	Dental Crowded Teeth Count Observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.23:2018-08-01)

56. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-153) such that it

- a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.39.2.2" (CONF:4376-155).
- b. **SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-156).

57. **SHALL** contain exactly one [1..1] **code** (CONF:4376-154) such that it

- a. **SHALL** contain exactly one [1..1] **@code**="90873-1" Malocclusion severity assessment (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-157).
- 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:4376-158).

58. **SHALL** contain exactly one [1..1] **title** (CONF:4376-159).

59. **SHALL** contain exactly one [1..1] **text** (CONF:4376-160).

60. **MAY** contain zero or one [0..1] **entry** (CONF:4376-870) such that it

- a. **SHALL** contain exactly one [1..1] **@typeCode**="DRIV" (CONF:4376-892).
- b. **SHALL** contain exactly one [1..1] [Salzmann Index Observation](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.21:2018-08-01) (CONF:4376-871).

61. **MAY** contain zero or more [0..*] **entry** (CONF:4376-872) such that it

- a. **SHALL** contain exactly one [1..1] **@typeCode**="DRIV" (CONF:4376-893).
- b. **SHALL** contain exactly one [1..1] [Dental Missing Teeth Count Observation](#) (identifier:

urn:hl7ii:2.16.840.1.113883.10.20.39.3.22:2018-08-01)
(CONF:4376-873).

62. **MAY** contain zero or more [0..*] **entry** (CONF:4376-874) such that it
- SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CONF:4376-894).
 - SHALL** contain exactly one [1..1] Dental Posterior Inter-Arch Deviation Observation (identifier:
urn:hl7ii:2.16.840.1.113883.10.20.39.3.31:2018-08-01)
(CONF:4376-875).
63. **MAY** contain zero or one [0..1] **entry** (CONF:4376-876) such that it
- SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CONF:4376-895).
 - SHALL** contain exactly one [1..1] Dental Openbite Teeth Count Observation (identifier:
urn:hl7ii:2.16.840.1.113883.10.20.39.3.30:2018-08-01)
(CONF:4376-877).
64. **MAY** contain zero or one [0..1] **entry** (CONF:4376-878) such that it
- SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CONF:4376-896).
 - SHALL** contain exactly one [1..1] Dental Crossbite Teeth Count Observation (identifier:
urn:hl7ii:2.16.840.1.113883.10.20.39.3.29:2018-08-01)
(CONF:4376-879).
65. **MAY** contain zero or one [0..1] **entry** (CONF:4376-880) such that it
- SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CONF:4376-897).
 - SHALL** contain exactly one [1..1] Dental Overbite Teeth Count Observation (identifier:
urn:hl7ii:2.16.840.1.113883.10.20.39.3.28:2018-08-01)
(CONF:4376-881).
66. **MAY** contain zero or one [0..1] **entry** (CONF:4376-882) such that it
- SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CONF:4376-898).
 - SHALL** contain exactly one [1..1] Dental Overjet Teeth Count Observation (identifier:
urn:hl7ii:2.16.840.1.113883.10.20.39.3.27:2018-08-01)
(CONF:4376-883).
67. **MAY** contain zero or more [0..*] **entry** (CONF:4376-884) such that it
- SHALL** contain exactly one [1..1] **@typeCode="DRIV"** (CONF:4376-899).
 - SHALL** contain exactly one [1..1] Dental Closed-Spaced Teeth Count Observation (identifier:
urn:hl7ii:2.16.840.1.113883.10.20.39.3.26:2018-08-01)
(CONF:4376-885).
68. **MAY** contain zero or more [0..*] **entry** (CONF:4376-886) such that it

- a. **SHALL** contain exactly one [1..1] @**typeCode**="DRIV" (CONF:4376-900).
 - b. **SHALL** contain exactly one [1..1] [Dental Open-Spaced Teeth Count Observation](#) (identifier:
urn:hl7ii:2.16.840.1.113883.10.20.39.3.25:2018-08-01)
(CONF:4376-887).
69. **MAY** contain zero or more [0..*] **entry** (CONF:4376-888) such that it
- a. **SHALL** contain exactly one [1..1] @**typeCode**="DRIV" (CONF:4376-901).
 - b. **SHALL** contain exactly one [1..1] [Dental Rotated Teeth Count Observation](#) (identifier:
urn:hl7ii:2.16.840.1.113883.10.20.39.3.24:2018-08-01)
(CONF:4376-889).
70. **MAY** contain zero or more [0..*] **entry** (CONF:4376-890) such that it
- a. **SHALL** contain exactly one [1..1] @**typeCode**="DRIV" (CONF:4376-902).
 - b. **SHALL** contain exactly one [1..1] [Dental Crowded Teeth Count Observation](#) (identifier:
urn:hl7ii:2.16.840.1.113883.10.20.39.3.23:2018-08-01)
(CONF:4376-891).

Figure 29: Orthodontic Salzmann Malocclusion Severity Assessment Section Sample

```
<section>
  <templateId root="2.16.840.1.113883.10.20.39.2.1" extension="2018-08-01"
/>
  <code code="90873-1" codeSystem="2.16.840.1.113883.6.1" />
  <title>Salzmann Malocclusion Severity Assessment</title>
  <text>
    <content>
      <table>
        <thead>
          <tr>
            <th>Observation</th>
            <th>Value</th>
          </tr>
        </thead>
        <tbody>
          <tr ID="SalzmannIndex">
            <td>Salzmann Index</td>
            <td>32</td>
          </tr>
          <tr ID="MissingTeethCount1">
            <td>Missing Teeth Count</td>
            <td>Anterior Maxilla - 2</td>
          </tr>
          <tr ID="MissingTeethCount2">
            <td>Missing Teeth</td>
            <td>Posterior Maxilla - 1</td>
          </tr>
          <tr ID="PosteriorInterArchDeviation1">
            <td>Posterior Inter-Arch Deviation</td>
            <td>Tooth 12 - Posterior Open bite</td>
          </tr>
          <tr ID="OpenbiteTeethCount">
            <td>Open Bite Teeth Count</td>
            <td>0</td>
          </tr>
          <tr ID="CrossbiteTeethCount">
            <td>Crossbite Teeth Count</td>
            <td>1</td>
          </tr>
          <tr ID="OverbiteTeethCount">
            <td>Overbite Teeth Count</td>
            <td>2</td>
          </tr>
          <tr ID="OverjetTeethCount">
            <td>Overjet Teeth Count</td>
            <td>1</td>
          </tr>
          <tr ID="ClosedSpacedTeethCount1">
            <td>Closed-Spaced Teeth Count</td>
            <td>Anterior Maxilla - 2</td>
          </tr>
          <tr ID="OpenSpacedTeethCount1">
            <td>Open-Spaced Teeth Count</td>
            <td>Posterior Mandible - 3</td>
          </tr>
          <tr ID="RotatedTeethCount1">
            <td>Rotated Teeth Count</td>
            <td>Rotated Teeth Count</td>
          </tr>
        </tbody>
      </table>
    </content>
  </text>
</section>
```

```

        <td>Posterior Maxilla - 1</td>
      </tr>
      <tr ID="CrowdedTeethCount1">
        <td>Crowded Teeth Count</td>
        <td>Anterior Maxilla - 2</td>
      </tr>
    </tbody>
  </table>
</content>
</text>
<entry typeCode="DRIV">
  <!-- *** Salzmann Index Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Dental Missing Teeth Count Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Dental Posterior Inter-Arch Deviation Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Dental Openbite Teeth Count Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Dental Crossbite Teeth Count Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Dental Overbite Teeth Count Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Dental Overjet Teeth Count Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Dental Closed-Spaced Teeth Count Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Dental Open-Spaced Teeth Count Observation *** -->
  ...

</entry>
<entry typeCode="DRIV">
  <!-- *** Dental Rotated Teeth Count Observation *** -->
  ...

```

```

    </entry>
    <entry typeCode="DRIV">
      <!-- *** Dental Crowded Teeth Count Observation *** -->
      ...
    </entry>
  </section>

```

6.3 Problem Section (entries optional) (V3)

```

[section: identifier
urn:hl7ii:2.16.840.1.113883.10.20.22.2.5:2015-08-01 (open)]

```

Table 30: Problem Section (entries optional) (V3) Contexts

Contained By:	Contains:
Orthodontic Claim Attachment Document (optional)	Health Status Observation (V2) (optional) Problem Concern Act (V3) (optional)

This section lists and describes all relevant clinical problems at the time the document is generated. At a minimum, all pertinent current and historical problems should be listed. Overall health status may be represented in this section.

Table 31: Problem Section (entries optional) (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
section (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.2.5:2015-08-01)					
templateId	1..1	SHALL		1198-7877	
@root	1..1	SHALL		1198-10440	2.16.840.1.113883.10.20.22.2.5
@extension	1..1	SHALL		1198-32511	2015-08-01
code	1..1	SHALL		1198-15407	
@code	1..1	SHALL		1198-15408	11450-4
@codeSystem	1..1	SHALL		1198-31141	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
title	1..1	SHALL		1198-7879	
text	1..1	SHALL		1198-7880	
entry	0..*	SHOULD		1198-7881	
act	1..1	SHALL		1198-15505	Problem Concern Act (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.3:2015-08-01)
entry	0..1	MAY		1198-30481	
observation	1..1	SHALL		1198-30482	Health Status Observation (V2) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.5:2014-06-09)

71. **SHALL** contain exactly one [1..1] **templateId** (CONF:1198-7877) such that it

- a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.2.5" (CONF:1198-10440).
- b. **SHALL** contain exactly one [1..1] **@extension**="2015-08-01" (CONF:1198-32511).

72. **SHALL** contain exactly one [1..1] **code** (CONF:1198-15407).

- a. This code **SHALL** contain exactly one [1..1] **@code**="11450-4" Problem List (CONF:1198-15408).
- b. This code **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:1198-31141).

73. **SHALL** contain exactly one [1..1] **title** (CONF:1198-7879).

74. **SHALL** contain exactly one [1..1] **text** (CONF:1198-7880).

75. **SHOULD** contain zero or more [0..*] **entry** (CONF:1198-7881) such that it
- a. **SHALL** contain exactly one [1..1] [Problem Concern Act \(V3\)](#)
(identifier:
urn:hl7ii:2.16.840.1.113883.10.20.22.4.3:2015-08-01)
(CONF:1198-15505).
76. **MAY** contain zero or one [0..1] **entry** (CONF:1198-30481) such that it
- a. **SHALL** contain exactly one [1..1] [Health Status Observation \(V2\)](#)
(identifier:
urn:hl7ii:2.16.840.1.113883.10.20.22.4.5:2014-06-09)
(CONF:1198-30482).

7 Entry-Level Templates

7.1 Age Observation

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

Table 32: Age Observation Contexts

Contained By:	Contains:
Problem Observation (V3) (optional)	

This Age Observation represents the subject's age at onset of an event or observation. The age of a relative in a Family History Observation at the time of that observation could also be inferred by comparing RelatedSubject/subject/birthTime with Observation/effectiveTime. However, a common scenario is that a patient will know the age of a relative when the relative had a certain condition or when the relative died, but will not know the actual year (e.g., "grandpa died of a heart attack at the age of 50"). Often times, neither precise dates nor ages are known (e.g., "cousin died of congenital heart disease as an infant").

Table 33: Age Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.31)					
@classCode	1..1	SHALL		81-7613	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		81-7614	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		81-7899	
@root	1..1	SHALL		81-10487	2.16.840.1.113883.10.20.22.4.31
code	1..1	SHALL		81-7615	
@code	1..1	SHALL		81-16776	445518008
@codeSystem	1..1	SHALL		81-26499	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
statusCode	1..1	SHALL		81-15965	
@code	1..1	SHALL		81-15966	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	PQ	81-7617	
@unit	1..1	SHALL	CS	81-7618	urn:oid:2.16.840.1.113883.11.20.9.21 (AgePQ_UCUM)

77. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation
(CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6 **STATIC**)
(CONF:81-7613).

78. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001 **STATIC**) (CONF:81-7614).
79. **SHALL** contain exactly one [1..1] **templateId** (CONF:81-7899) such that it
- SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.22.4.31" (CONF:81-10487).
80. **SHALL** contain exactly one [1..1] **code** (CONF:81-7615).
- This code **SHALL** contain exactly one [1..1] **@code**="445518008" Age At Onset (CONF:81-16776).
 - This code **SHALL** contain exactly one [1..1]
@codeSystem="2.16.840.1.113883.6.96" (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:81-26499).
81. **SHALL** contain exactly one [1..1] **statusCode** (CONF:81-15965).
- This statusCode **SHALL** contain exactly one [1..1] **@code**="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14 **STATIC**) (CONF:81-15966).
82. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="PQ" (CONF:81-7617).
- This value **SHALL** contain exactly one [1..1] **@unit**, which **SHALL** be selected from ValueSet [AgePQ UCUM](#)
urn:oid:2.16.840.1.113883.11.20.9.21 **DYNAMIC** (CONF:81-7618).

Table 34: AgePQ_UCUM

Value Set: AgePQ_UCUM urn:oid:2.16.840.1.113883.11.20.9.21 (Clinical Focus: Units of time needed for humans and animals),(Data Element Scope: time),(Inclusion Criteria: time units from year to minute),(Exclusion Criteria: only units within inclusion criteria)			
This value set was imported on 6/24/2019 with a version of 20180508.			
Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.11.20.9.21/expansion			
Code	Code System	Code System OID	Print Name
a	UCUM	urn:oid:1.3.6.1.4.1.12009.10.3.1	year
d	UCUM	urn:oid:1.3.6.1.4.1.12009.10.3.1	day
h	UCUM	urn:oid:1.3.6.1.4.1.12009.10.3.1	hour
min	UCUM	urn:oid:1.3.6.1.4.1.12009.10.3.1	minute
mo	UCUM	urn:oid:1.3.6.1.4.1.12009.10.3.1	month
wk	UCUM	urn:oid:1.3.6.1.4.1.12009.10.3.1	week

Figure 30: Age Observation Example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.31" />
  <!-- Age observation -->
  <code code="445518008"
    codeSystem="2.16.840.1.113883.6.96"
    displayName="Age At Onset" />
  <statusCode code="completed" />
  <value xsi:type="PQ" value="57" unit="a" />
</observation>
```

7.2 Airway Problems Impacting Orthodontic Treatment Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.32:2018-08-01 (open)]

Table 35: Airway Problems Impacting Orthodontic Treatment Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

This entry contains a narrative description of airway problems that complicate the orthodontic treatment plan.

**Table 36: Airway Problems Impacting Orthodontic Treatment Observation
Constraints Overview**

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.32:2018-08-01)					
@classCode	1..1	SHALL		4376-577	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-578	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-564	
@root	1..1	SHALL		4376-570	2.16.840.1.113883.10.20.39.3.32
@extension	1..1	SHALL		4376-571	2018-08-01
id	1..*	SHALL		4376-579	
code	1..1	SHALL		4376-569	
@code	1..1	SHALL		4376-575	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90867-3
@codeSystem	1..1	SHALL		4376-576	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-568	
@code	1..1	SHALL		4376-574	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	ED	4376-918	
reference	1..1	SHALL		4376-919	
@value	1..1	SHALL		4376-920	

83. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-577).
84. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-578).
85. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-564) such that it
 - a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.39.3.32" (CONF:4376-570).
 - b. **SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-571).
86. **SHALL** contain at least one [1..*] **id** (CONF:4376-579).
87. **SHALL** contain exactly one [1..1] **code** (CONF:4376-569) such that it
 - a. **SHALL** contain exactly one [1..1] **@code**="90867-3" Airway problem impacting orthodontic treatment (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-575).
 - 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:4376-576).
88. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-568) 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:4376-574).
89. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="ED"** (CONF:4376-918) such that it
- a. **SHALL** contain exactly one [1..1] **reference** (CONF:4376-919).
 - i. This reference **SHALL** contain exactly one [1..1] **@value** (CONF:4376-920).
 - 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:4376-921).

Figure 31: Airway Problems Impacting Orthodontic Treatment Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.32" extension="2018-08-01"
/>
  <id root="b18509e4-80f8-4f02-b24b-9119ba3a18ec" />
  <code code="90867-3" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="ED"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <reference value="XXX">
      <!--PRIMITIVE: 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)-->
    </reference>
  </value>
</observation>
```

7.3 Craniofacial Anomaly Observation

[observation: identifier

urn:hl7ii:2.16.840.1.113883.10.20.39.3.11:2018-08-01 (open)]

Table 37: Craniofacial Anomaly Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

This entry contains either a coded identification, or reference to narrative description of any craniofacial anomalies affecting the patient's orthodontic condition.

Table 38: Craniofacial Anomaly Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.11:2018-08-01)					
@classCode	1..1	SHALL		4376-112	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-113	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-99	
@root	1..1	SHALL		4376-105	2.16.840.1.113883.10.20.39.3.11
@extension	1..1	SHALL		4376-106	2018-08-01
id	1..*	SHALL		4376-163	
code	1..1	SHALL		4376-104	
@code	1..1	SHALL		4376-110	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90865-7
@codeSystem	1..1	SHALL		4376-111	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-103	
@code	1..1	SHALL		4376-109	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHOULD	CD	4376-580	
@code	1..1	SHALL		4376-581	urn:oid:2.16.840.1.113883.1.11.20565 (Craniofacial Anomaly)
value	1..1	MAY	ED	4376-913	
reference	1..1	SHALL		4376-914	
@value	1..1	SHALL		4376-915	
value	1..1	SHALL		4376-917	

90. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-112).
91. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-113).
92. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-99) such that it
- SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.39.3.11" (CONF:4376-105).
 - SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-106).
93. **SHALL** contain at least one [1..*] **id** (CONF:4376-163).
94. **SHALL** contain exactly one [1..1] **code** (CONF:4376-104) such that it
- SHALL** contain exactly one [1..1] **@code**="90865-7" Craniofacial anomalies impacting orthodontic care (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-110).

- 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:4376-111).
- 95. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-103) 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:4376-109).

Where possible, the Value element should be populated with a coded value representing the patient's craniofacial anomaly. In the event that the patient's craniofacial anomaly does not align to coded options provided for the Value@code element, implementers may instead include an observation with xsi:type="ED" containing a reference to the section narrative where the patient's craniofacial anomaly is described.

- 96. **SHOULD** contain exactly one [1..1] **value** with `@xsi:type="CD"` (CONF:4376-580) such that it
 - a. **SHALL** contain exactly one [1..1] `@code`, which **SHALL** be selected from ValueSet [Craniofacial Anomaly](#)
urn:oid:2.16.840.1.113883.1.11.20565 (CONF:4376-581).
- 97. **MAY** contain exactly one [1..1] **value** with `@xsi:type="ED"` (CONF:4376-913) such that it
 - a. **SHALL** contain exactly one [1..1] **reference** (CONF:4376-914).
 - i. This reference **SHALL** contain exactly one [1..1] `@value` (CONF:4376-915).
 - 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:4376-916).
- 98. **SHALL** contain exactly one [1..1] **value** (CONF:4376-917).

Table 39: Craniofacial Anomaly

Value Set: Craniofacial Anomaly urn:oid:2.16.840.1.113883.1.11.20565 The SNODENT identifiers for the most common craniofacial anomalies that may influence the course of orthodontic treatment to be performed. 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
149694D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Cleft lip
115902D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Cleft palate with cleft lip
210958D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Cleft lip and alveolus
132578D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Cleft palate
122924D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Hemifacial microsomia
210959D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Craniosynostosis syndrome
133572D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Cleidocranial dysostosis
146718D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Treacher Collins syndrome
210960D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Arthrogryposis
198545D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Complete trisomy 21 syndrome
199380D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Marfan syndrome
117349D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Juvenile rheumatoid arthritis

Figure 32: Craniofacial Anomalies Observation Sample

```

<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.11" extension="2018-08-01" />
  <id root="ec54920b-3ac8-4170-94f6-4556f6e69f91" />
  <code code="90865-7" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="CD" code="122924D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Hemifacial microsomia" />
</observation>

```

7.4 Dental Abnormality Impacting Orthodontic Treatment Observation

[observation: identifier

urn:hl7ii:2.16.840.1.113883.10.20.39.3.12:2018-08-01 (open)]

Table 40: Dental Abnormality Impacting Orthodontic Treatment Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

This entry is used to capture tooth-specific abnormalities that impact the orthodontic treatment. Examples include ectopic eruption, absent teeth, impacted teeth, ankylosed teeth, and supernumerary teeth.

Table 41: Dental Abnormality Impacting Orthodontic Treatment Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.12:2018-08-01)					
@classCode	1..1	SHALL		4376-200	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-201	urn:oid:2.16.840.1.113883.5.1 001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-195	
@root	1..1	SHALL		4376-202	2.16.840.1.113883.10.20.39.3 .12
@extension	1..1	SHALL		4376-203	2018-08-01
id	1..*	SHALL		4376-204	
code	1..1	SHALL		4376-196	
@code	1..1	SHALL		4376-205	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90864-0
@codeSystem	1..1	SHALL		4376-206	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-197	
@code	1..1	SHALL		4376-207	urn:oid:2.16.840.1.113883.5.1 4 (HL7ActStatus) = completed
value	1..1	SHALL	CD	4376-198	
@code	1..1	SHALL		4376-208	urn:oid:2.16.840.1.113883.1.1 1.20566 (Dental Abnormality Impacting Orthodontic Treatment)
targetSiteCode	1..1	SHALL		4376-199	
@code	1..1	SHALL		4376-209	urn:oid:2.16.840.1.113883.1.1 1.20556 (Dental Universal Numbering System)

99. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-200).
100. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-201).
101. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-195) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.39.3.12"** (CONF:4376-202).
 - b. **SHALL** contain exactly one [1..1] **@extension="2018-08-01"** (CONF:4376-203).
102. **SHALL** contain at least one [1..*] **id** (CONF:4376-204).
103. **SHALL** contain exactly one [1..1] **code** (CONF:4376-196) such that it
 - a. **SHALL** contain exactly one [1..1] **@code="90864-0"** Dental abnormalities impacting orthodontic care (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-205).
 - 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:4376-206).
104. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-197) such that it
 - a. **SHALL** contain exactly one [1..1] **@code="completed"** (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-207).
105. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:4376-198) such that it
 - a. **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet [Dental Abnormality Impacting Orthodontic Treatment](#) urn:oid:2.16.840.1.113883.1.11.20566 (CONF:4376-208).

The targetSiteCode indicates the tooth to which this dental abnormality impacting the orthodontic condition applies.

106. **SHALL** contain exactly one [1..1] **targetSiteCode** (CONF:4376-199) 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 (CONF:4376-209).

Table 42: Dental Abnormality Impacting Orthodontic Treatment

Value Set: Dental Abnormality Impacting Orthodontic Treatment urn:oid:2.16.840.1.113883.1.11.20566 The SNODENT identifiers for tooth-specific abnormalities that impact orthodontic treatment.			
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
139347D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Ectopic Tooth
100203D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Tooth Absent
104161D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Impacted tooth
127066D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Ankylosis of tooth
116259D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary tooth

Table 43: 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:2.16.840.1.113883.3.3150	Permanent lower left first molar tooth
161150D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent lower left second premolar tooth
160654D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent lower left first premolar tooth
160817D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent lower left canine tooth
161477D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent lower left lateral incisor tooth
161068D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent lower left central incisor tooth
161291D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent lower right central incisor tooth
161197D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent lower right lateral incisor tooth
161514D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent lower right canine tooth
161496D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent lower right first premolar tooth
161412D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent lower right second premolar tooth
160770D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent lower right first molar tooth
160704D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent lower right second molar tooth
161121D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent lower right third molar tooth
162091D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary upper right second molar tooth

162234D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary upper right first molar tooth
162268D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary upper right canine tooth
162494D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary upper right lateral incisor tooth
162619D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary upper right central incisor tooth
162418D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary upper left central incisor tooth
162350D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary upper left lateral incisor tooth
162309D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary upper left canine tooth
162004D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary upper left first molar tooth
162585D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary upper left second molar tooth
162321D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary lower left second molar tooth
162537D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary lower left first molar tooth
162441D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary lower left canine tooth
162129D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary lower left lateral incisor tooth
162345D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary lower left central incisor tooth
162062D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary lower right central incisor tooth
161956D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary lower right lateral incisor tooth
161892D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary lower right canine tooth
162206D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary lower right first molar tooth
162425D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary lower right second molar tooth
177552D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous mandibular left canine tooth
177292D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous mandibular left central incisor tooth
177421D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous mandibular left first molar tooth
177318D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous mandibular

			left lateral incisor tooth
177704D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous mandibular left second molar tooth
177387D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous mandibular right canine tooth
177450D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous mandibular right central incisor tooth
177758D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous mandibular right first molar tooth
177466D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous mandibular right lateral incisor tooth
177302D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous mandibular right second molar tooth
177497D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous maxillary left canine tooth
177736D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous maxillary left central incisor tooth
177715D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous maxillary left first molar tooth
177263D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous maxillary left lateral incisor tooth
177581D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous maxillary left second molar tooth
177575D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous maxillary right canine tooth
177696D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous maxillary right central incisor tooth
177360D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous maxillary right first molar tooth
177620D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous maxillary right lateral incisor tooth
177665D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary deciduous maxillary right second molar tooth

177523D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular left canine tooth
177510D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular left central incisor tooth
177478D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular left first molar tooth
177631D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular left first premolar tooth
177271D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular left lateral incisor tooth
177677D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular left second molar tooth
177727D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular left second premolar tooth
177743D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular left third molar tooth
177341D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular right canine tooth
177285D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular right central incisor tooth
177413D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular right first molar tooth
177599D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular right first premolar tooth
177506D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular right lateral incisor tooth
177432D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular right second molar tooth
177409D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular right second premolar tooth
177608D	SNODENT	urn:oid:2.16.840.1.113883.3.31 50	Supernumerary permanent mandibular right third molar tooth

177356D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary left canine tooth
177762D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary left central incisor tooth
177654D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary left first molar tooth
177445D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary left first premolar tooth
177683D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary left lateral incisor tooth
177373D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary left second molar tooth
177325D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary left second premolar tooth
177568D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary left third molar tooth
177339D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary right canine tooth
177259D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary right central incisor tooth
177534D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary right first molar tooth
177612D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary right first premolar tooth
177484D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary right lateral incisor tooth
177649D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary right second molar tooth
177547D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary right second premolar tooth
177394D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Supernumerary permanent maxillary right third molar tooth

Figure 33: Dental Abnormalities Impacting Orthodontic Treatment Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.12" extension="2018-08-01"
  />
  <id root="1556771b-26c6-4ad7-ace1-0efa1d163371" />
  <code code="90864-0" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="CD" code="127066D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Ankylosis of tooth" />
  <targetSiteCode code="162004D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Primary upper left first molar tooth"
  />
</observation>
```

7.5 Dental Closed-Spaced Teeth Count Observation

[observation: identifier

urn:hl7ii:2.16.840.1.113883.10.20.39.3.26:2018-08-01 (open)]

Table 44: Dental Closed-Spaced Teeth Count Observation Contexts

Contained By:	Contains:
Orthodontic Salzmann Malocclusion Severity Assessment Section (optional)	

Entry for capturing the number of closed-spaced teeth in a given area of the oral cavity (Anterior/Posterior Maxilla, Anterior/Posterior Mandible) as part of the Salzmann Malocclusion Index.

Table 45: Dental Closed-Spaced Teeth Count Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.26:2018-08-01)					
@nullFlavor	0..1	MAY		4376-794	
@classCode	1..1	SHALL		4376-791	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-792	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-779	
@root	1..1	SHALL		4376-784	2.16.840.1.113883.10.20.39.3.26
@extension	1..1	SHALL		4376-785	2018-08-01
id	1..*	SHALL		4376-793	
code	1..1	SHALL		4376-780	
@code	1..1	SHALL		4376-786	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90857-4
@codeSystem	1..1	SHALL		4376-787	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-781	
@code	1..1	SHALL		4376-788	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	INT	4376-782	
@value	1..1	SHALL		4376-789	
targetSiteCode	1..1	SHALL		4376-783	
@code	1..1	SHALL		4376-790	urn:oid:2.16.840.1.113883.1.11.20569 (Oral Cavity Area)

107. **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:4376-794).
108. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-791).
109. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-792).
110. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-779) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.39.3.26"** (CONF:4376-784).
 - b. **SHALL** contain exactly one [1..1] **@extension="2018-08-01"** (CONF:4376-785).
111. **SHALL** contain at least one [1..*] **id** (CONF:4376-793).
112. **SHALL** contain exactly one [1..1] **code** (CONF:4376-780) such that it
 - a. **SHALL** contain exactly one [1..1] **@code="90857-4"** Closed-spaced teeth (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-786).

- 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:4376-787).
- 113. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-781) such that it
 - a. **SHALL** contain exactly one [1..1] `@code="completed"` (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-788).
- 114. **SHALL** contain exactly one [1..1] **value** with `@xsi:type="INT"` (CONF:4376-782) such that it
 - a. **SHALL** contain exactly one [1..1] `@value` (CONF:4376-789).
- 115. **SHALL** contain exactly one [1..1] **targetSiteCode** (CONF:4376-783) such that it
 - a. **SHALL** contain exactly one [1..1] `@code`, which **SHALL** be selected from ValueSet Oral Cavity Area
urn:oid:2.16.840.1.113883.1.11.20569 (CONF:4376-790).

Table 46: Oral Cavity Area

Value Set: Oral Cavity Area urn:oid:2.16.840.1.113883.1.11.20569 The SNODENT identifiers for the two jaws (mandible and maxilla).			
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
210963D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Anterior segment of maxilla
210964D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Posterior segment of maxilla
210965D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Anterior part of lower alveolar ridge
210966D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Posterior part of lower alveolar ridge

Figure 34: Dental Closed-Spaced Teeth Count Observation Sample

```

<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.26" extension="2018-08-01"
  />
  <id root="1e3e38eb-01f9-4037-826c-71a91bc9be54" />
  <code code="90857-4" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="INT" value="2" />
  <targetSiteCode code="210965D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Anterior part of lower alveolar ridge"
  />
</observation>

```

7.6 Dental Crossbite Teeth Count Observation

[observation: identifier

urn:hl7ii:2.16.840.1.113883.10.20.39.3.29:2018-08-01 (open)]

Table 47: Dental Crossbite Teeth Count Observation Contexts

Contained By:	Contains:
Orthodontic Salzmann Malocclusion Severity Assessment Section (optional)	

Entry for capturing the number of incisor teeth with a crossbite in the Maxilla as part of the Salzmann Malocclusion Index.

Table 48: Dental Crossbite Teeth Count Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.29:2018-08-01)					
@nullFlavor	0..1	MAY		4376-838	
@classCode	1..1	SHALL		4376-835	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-836	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-825	
@root	1..1	SHALL		4376-829	2.16.840.1.113883.10.20.39.3.29
@extension	1..1	SHALL		4376-830	2018-08-01
id	1..*	SHALL		4376-837	
code	1..1	SHALL		4376-826	
@code	1..1	SHALL		4376-831	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90856-6
@codeSystem	1..1	SHALL		4376-832	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-827	
@code	1..1	SHALL		4376-833	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	INT	4376-828	
@value	1..1	SHALL		4376-834	

116. **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:4376-838).
117. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-835).
118. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-836).
119. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-825) such that it

- a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.39.3.29" (CONF:4376-829).
- b. **SHALL** contain exactly one [1..1] @extension="2018-08-01"
(CONF:4376-830).
- 120. **SHALL** contain at least one [1..*] id (CONF:4376-837).
- 121. **SHALL** contain exactly one [1..1] code (CONF:4376-826) such that it
 - a. **SHALL** contain exactly one [1..1] @code="90856-6" Crossbite teeth
(CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1)
(CONF:4376-831).
 - 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:4376-832).
- 122. **SHALL** contain exactly one [1..1] statusCode (CONF:4376-827) such that
it
 - a. **SHALL** contain exactly one [1..1] @code="completed" (CodeSystem:
HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-
833).
- 123. **SHALL** contain exactly one [1..1] value with @xsi:type="INT" (CONF:4376-
828) such that it
 - a. **SHALL** contain exactly one [1..1] @value (CONF:4376-834).

Figure 35: Dental Crossbite Teeth Count Observation

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.29" extension="2018-08-01"
/>
  <id root="71c5461b-eb2-49a3-93a3-d4d5fa087e04" />
  <code code="90856-6" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="INT" value="1" />
</observation>
```

7.7 Dental Crowded Teeth Count Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.23:2018-08-01 (open)]

Table 49: Dental Crowded Teeth Count Observation Contexts

Contained By:	Contains:
Orthodontic Salzmann Malocclusion Severity Assessment Section (optional)	

Entry for capturing the number of crowded teeth in a given area of the oral cavity (Anterior/Posterior Maxilla, Anterior/Posterior Mandible) as part of the Salzmann Malocclusion Index.

Table 50: Dental Crowded Teeth Count Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.23:2018-08-01)					
@nullFlavor	0..1	MAY		4376-745	
@classCode	1..1	SHALL		4376-742	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-743	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-731	
@root	1..1	SHALL		4376-736	2.16.840.1.113883.10.20.39.3.23
@extension	1..1	SHALL		4376-737	2018-08-01
id	1..*	SHALL		4376-744	
code	1..1	SHALL		4376-732	
@code	1..1	SHALL		4376-738	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90860-8
@codeSystem	1..1	SHALL		4376-739	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-733	
@code	1..1	SHALL		4376-740	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	INT	4376-734	
@value	1..1	SHALL		4376-741	
targetSiteCode	1..1	SHALL		4376-735	
@code	1..1	SHALL		4376-746	urn:oid:2.16.840.1.113883.1.11.20569 (Oral Cavity Area)

124. **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:4376-745).
125. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-742).
126. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-743).
127. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-731) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.39.3.23"** (CONF:4376-736).
 - b. **SHALL** contain exactly one [1..1] **@extension="2018-08-01"** (CONF:4376-737).
128. **SHALL** contain at least one [1..*] **id** (CONF:4376-744).
129. **SHALL** contain exactly one [1..1] **code** (CONF:4376-732) such that it
 - a. **SHALL** contain exactly one [1..1] **@code="90860-8"** Crowded teeth (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-738).

- 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:4376-739).
- 130. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-733) such that
it
 - a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem:
HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-
740).
- 131. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="INT" (CONF:4376-
734) such that it
 - a. **SHALL** contain exactly one [1..1] **@value** (CONF:4376-741).
- 132. **SHALL** contain exactly one [1..1] **targetSiteCode** (CONF:4376-735) such
that it
 - a. **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from
ValueSet [Oral Cavity Area](#)
urn:oid:2.16.840.1.113883.1.11.20569 (CONF:4376-746).

Figure 36: Dental Crowded Teeth Count Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.23" extension="2018-08-01"
/>
  <id root="87b3eaa0-aa9f-4f11-9f74-0cb4190a213b" />
  <code code="90860-8" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="INT" value="3" />
  <targetSiteCode code="210964D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Posterior segment of maxilla" />
</observation>
```

7.8 Dental Crowding Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.19:2018-08-01 (open)]

Table 51: Dental Crowding Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

Entry for capturing the additional space needed in a given area of an arch for proper tooth spacing. This distance is recorded in millimeters (mm). The region of the arch being measured (Anterior/Posterior Maxilla or Anterior/Posterior Mandible) is indicated in the targetSiteCode.

Table 52: Dental Crowding Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.19:2018-08-01)					
@nullFlavor	0..1	MAY		4376-661	
@classCode	1..1	SHALL		4376-658	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-659	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-646	
@root	1..1	SHALL		4376-651	2.16.840.1.113883.10.20.39.3.19
@extension	1..1	SHALL		4376-652	2018-08-01
id	1..*	SHALL		4376-660	
code	1..1	SHALL		4376-647	
@code	1..1	SHALL		4376-653	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 32898-9
@codeSystem	1..1	SHALL		4376-654	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-648	
@code	1..1	SHALL		4376-655	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	PQ	4376-649	
@value	1..1	SHALL		4376-656	
@unit	1..1	SHALL		4376-657	urn:oid:2.16.840.1.113883.6.8 (UCUM) = mm
targetSiteCode	1..1	SHALL		4376-650	
@code	1..1	SHALL		4376-662	urn:oid:2.16.840.1.113883.1.11.20569 (Oral Cavity Area)

133. **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:4376-661).
134. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-658).
135. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-659).
136. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-646) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.39.3.19"** (CONF:4376-651).
 - b. **SHALL** contain exactly one [1..1] **@extension="2018-08-01"** (CONF:4376-652).
137. **SHALL** contain at least one [1..*] **id** (CONF:4376-660).
138. **SHALL** contain exactly one [1..1] **code** (CONF:4376-647) such that it

- a. **SHALL** contain exactly one [1..1] **@code**="32898-9" Tooth space required {Dental arch} Calculated (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-653).
 - 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:4376-654).
139. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-648) such that it
- a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-655).
140. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="PQ" (CONF:4376-649) such that it
- a. **SHALL** contain exactly one [1..1] **@value** (CONF:4376-656).
 - b. **SHALL** contain exactly one [1..1] **@unit**="mm" (CodeSystem: UCUM urn:oid:2.16.840.1.113883.6.8) (CONF:4376-657).
141. **SHALL** contain exactly one [1..1] **targetSiteCode** (CONF:4376-650) such that it
- a. **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet [Oral Cavity Area](#) urn:oid:2.16.840.1.113883.1.11.20569 (CONF:4376-662).

Figure 37: Dental Crowding Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.19" extension="2018-08-01"
/>
  <id root="270e3d9e-4284-4992-82eb-68cf2ff5abcf" />
  <code code="32898-9" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="PQ" value="12" unit="mm" />
  <targetSiteCode code="210963D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Anterior segment of maxilla" />
</observation>
```

7.9 Dental Missing Teeth Count Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.22:2018-08-01 (open)]

Table 53: Dental Missing Teeth Count Observation Contexts

Contained By:	Contains:
Orthodontic Salzmann Malocclusion Severity Assessment Section (optional)	

Entry for capturing the number of missing teeth in a given area of the oral cavity (Anterior/Posterior Maxilla, Anterior/Posterior Mandible) as part of the Salzmann Malocclusion Index.

Table 54: Dental Missing Teeth Count Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.22:2018-08-01)					
@nullFlavor	0..1	MAY		4376-728	
@classCode	1..1	SHALL		4376-725	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-726	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-715	
@root	1..1	SHALL		4376-719	2.16.840.1.113883.10.20.39.3.22
@extension	1..1	SHALL		4376-720	2018-08-01
id	1..*	SHALL		4376-727	
code	1..1	SHALL		4376-716	
@code	1..1	SHALL		4376-721	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90861-6
@codeSystem	1..1	SHALL		4376-722	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-717	
@code	1..1	SHALL		4376-723	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	INT	4376-718	
@value	1..1	SHALL		4376-724	
targetSiteCode	1..1	SHALL		4376-729	
@code	1..1	SHALL		4376-730	urn:oid:2.16.840.1.113883.1.11.20569 (Oral Cavity Area)

142. **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:4376-728).
143. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-725).
144. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-726).
145. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-715) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.39.3.22"** (CONF:4376-719).
 - b. **SHALL** contain exactly one [1..1] **@extension="2018-08-01"** (CONF:4376-720).
146. **SHALL** contain at least one [1..*] **id** (CONF:4376-727).
147. **SHALL** contain exactly one [1..1] **code** (CONF:4376-716) such that it
 - a. **SHALL** contain exactly one [1..1] **@code="90861-6"** Missing teeth (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-721).

- 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:4376-722).
- 148. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-717) such that
it
 - a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem:
HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-
723).
- 149. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="INT" (CONF:4376-
718) such that it
 - a. **SHALL** contain exactly one [1..1] **@value** (CONF:4376-724).
- 150. **SHALL** contain exactly one [1..1] **targetSiteCode** (CONF:4376-729) such
that it
 - a. **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from
ValueSet [Oral Cavity Area](#)
urn:oid:2.16.840.1.113883.1.11.20569 (CONF:4376-730).

Figure 38: Dental Missing Teeth Count Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.22" extension="2018-08-01"
/>
  <id root="7ab5cf49-3dc2-4887-aa4d-eeee45066fae" />
  <code code="90861-6" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="INT" value="1" />
  <targetSiteCode code="210966D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Posterior part of lower alveolar ridge"
/>
</observation>
```

7.10 Dental Openbite Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.17:2018-08-01 (open)]

Table 55: Dental Openbite Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

Entry for capturing the patient's openbite distance, measured as the gap between the Maxillary and the Mandibular dentition when the jaw is closed. This distance is recorded in millimeters (mm).

Table 56: Dental Openbite Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.17:2018-08-01)					
@nullFlavor	0..1	MAY		4376-628	
@classCode	1..1	SHALL		4376-625	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-626	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-614	
@root	1..1	SHALL		4376-618	2.16.840.1.113883.10.20.39.3.17
@extension	1..1	SHALL		4376-619	2018-08-01
id	1..*	SHALL		4376-627	
code	1..1	SHALL		4376-615	
@code	1..1	SHALL		4376-620	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 32918-5
@codeSystem	1..1	SHALL		4376-621	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-616	
@code	1..1	SHALL		4376-622	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	PQ	4376-617	
@value	1..1	SHALL		4376-623	
@unit	1..1	SHALL		4376-624	urn:oid:2.16.840.1.113883.6.8 (UCUM) = mm

151. **MAY** contain zero or one [0..1] @nullFlavor (CONF:4376-628).
152. **SHALL** contain exactly one [1..1] @classCode="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-625).
153. **SHALL** contain exactly one [1..1] @moodCode="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-626).
154. **SHALL** contain exactly one [1..1] templateId (CONF:4376-614) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.39.3.17" (CONF:4376-618).
 - b. **SHALL** contain exactly one [1..1] @extension="2018-08-01" (CONF:4376-619).
155. **SHALL** contain at least one [1..*] id (CONF:4376-627).
156. **SHALL** contain exactly one [1..1] code (CONF:4376-615) such that it
 - a. **SHALL** contain exactly one [1..1] @code="32918-5" Openbite [Length] Maxilla and Mandible Measured (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-620).

- 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:4376-621).
- 157. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-616) such that it
 - a. **SHALL** contain exactly one [1..1] @code="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-622).
- 158. **SHALL** contain exactly one [1..1] **value** with @xsi:type="PQ" (CONF:4376-617) such that it
 - a. **SHALL** contain exactly one [1..1] @value (CONF:4376-623).
 - b. **SHALL** contain exactly one [1..1] @unit="mm" (CodeSystem: UCUM urn:oid:2.16.840.1.113883.6.8) (CONF:4376-624).

Figure 39: Dental Openbite Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.17" extension="2018-08-01"
/>
  <id root="25ee17cd-b903-42f9-a60e-23a83c3ce585" />
  <code code="32918-5" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="PQ" value="8" unit="mm" />
</observation>
```

7.11 Dental Openbite Teeth Count Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.30:2018-08-01 (open)]

Table 57: Dental Openbite Teeth Count Observation Contexts

Contained By:	Contains:
Orthodontic Salzmann Malocclusion Severity Assessment Section (optional)	

Entry for capturing the number of incisor teeth with an openbite in the Maxilla as part of the Salzmann Malocclusion Index.

Table 58: Dental Openbite Teeth Count Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.30:2018-08-01)					
@nullFlavor	0..1	MAY		4376-852	
@classCode	1..1	SHALL		4376-849	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-850	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-839	
@root	1..1	SHALL		4376-843	2.16.840.1.113883.10.20.39.3.30
@extension	1..1	SHALL		4376-844	2018-08-01
id	1..*	SHALL		4376-851	
code	1..1	SHALL		4376-840	
@code	1..1	SHALL		4376-845	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90931-7
@codeSystem	1..1	SHALL		4376-846	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-841	
@code	1..1	SHALL		4376-847	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	INT	4376-842	
@value	1..1	SHALL		4376-848	

159. **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:4376-852).
160. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-849).
161. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-850).
162. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-839) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.39.3.30"** (CONF:4376-843).
 - b. **SHALL** contain exactly one [1..1] **@extension="2018-08-01"** (CONF:4376-844).
163. **SHALL** contain at least one [1..*] **id** (CONF:4376-851).
164. **SHALL** contain exactly one [1..1] **code** (CONF:4376-840) such that it
 - a. **SHALL** contain exactly one [1..1] **@code="90931-7"** Openbite teeth (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-845).
 - 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:4376-846).

165. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-841) such that it
 - a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-847).
166. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="INT" (CONF:4376-842) such that it
 - a. **SHALL** contain exactly one [1..1] **@value** (CONF:4376-848).

Figure 40: Dental Openbite Teeth Count Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.30" extension="2018-08-01"
/>
  <id root="0cb5ef68-cfc3-4310-b32a-cdbfc5f59c8d" />
  <code code="90931-7" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="INT" value="1" />
</observation>
```

7.12 Dental Open-Spaced Teeth Count Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.25:2018-08-01 (open)]

Table 59: Dental Open-Spaced Teeth Count Observation Contexts

Contained By:	Contains:
Orthodontic Salzmann Malocclusion Severity Assessment Section (optional)	

Entry for capturing the number of open-spaced teeth in a given area of the oral cavity (Anterior/Posterior Maxilla, Anterior/Posterior Mandible) as part of the Salzmann Malocclusion Index.

Table 60: Dental Open-Spaced Teeth Count Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.25:2018-08-01)					
@nullFlavor	0..1	MAY		4376-778	
@classCode	1..1	SHALL		4376-775	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-776	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-763	
@root	1..1	SHALL		4376-768	2.16.840.1.113883.10.20.39.3.25
@extension	1..1	SHALL		4376-769	2018-08-01
id	1..*	SHALL		4376-777	
code	1..1	SHALL		4376-764	
@code	1..1	SHALL		4376-770	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90858-2
@codeSystem	1..1	SHALL		4376-771	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-765	
@code	1..1	SHALL		4376-772	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	INT	4376-766	
@value	1..1	SHALL		4376-773	
targetSiteCode	1..1	SHALL		4376-767	
@code	1..1	SHALL		4376-774	urn:oid:2.16.840.1.113883.1.11.20569 (Oral Cavity Area)

167. **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:4376-778).
168. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-775).
169. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-776).
170. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-763) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.39.3.25"** (CONF:4376-768).
 - b. **SHALL** contain exactly one [1..1] **@extension="2018-08-01"** (CONF:4376-769).
171. **SHALL** contain at least one [1..*] **id** (CONF:4376-777).
172. **SHALL** contain exactly one [1..1] **code** (CONF:4376-764) such that it
 - a. **SHALL** contain exactly one [1..1] **@code="90858-2"** Open-spaced teeth (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-770).

- 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:4376-771).
- 173. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-765) such that
it
 - a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem:
HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-
772).
- 174. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="INT" (CONF:4376-
766) such that it
 - a. **SHALL** contain exactly one [1..1] **@value** (CONF:4376-773).
- 175. **SHALL** contain exactly one [1..1] **targetSiteCode** (CONF:4376-767) such
that it
 - a. **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from
ValueSet [Oral Cavity Area](#)
urn:oid:2.16.840.1.113883.1.11.20569 (CONF:4376-774).

Figure 41: Dental Open-Spaced Teeth Count Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.25" extension="2018-08-01"
/>
  <id root="8d53ae74-00d0-476b-928b-2dfe6b40164c" />
  <code code="90858-2" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="INT" value="2" />
  <targetSiteCode code="210963D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Anterior segment of maxilla" />
</observation>
```

7.13 Dental Overbite Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.16:2018-08-01 (open)]

Table 61: Dental Overbite Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

Entry for capturing the patient's overbite distance, measured as the vertical overlap between the Maxillary and the Mandibular dentition. This distance is recorded in millimeters (mm).

Table 62: Dental Overbite Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.16:2018-08-01)					
@nullFlavor	0..1	MAY		4376-613	
@classCode	1..1	SHALL		4376-610	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-611	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-599	
@root	1..1	SHALL		4376-603	2.16.840.1.113883.10.20.39.3.16
@extension	1..1	SHALL		4376-604	2018-08-01
id	1..*	SHALL		4376-612	
code	1..1	SHALL		4376-600	
@code	1..1	SHALL		4376-605	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 32917-7
@codeSystem	1..1	SHALL		4376-606	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-601	
@code	1..1	SHALL		4376-607	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	PQ	4376-602	
@value	1..1	SHALL		4376-608	
@unit	1..1	SHALL		4376-609	urn:oid:2.16.840.1.113883.6.8 (UCUM) = mm

176. **MAY** contain zero or one [0..1] @nullFlavor (CONF:4376-613).
177. **SHALL** contain exactly one [1..1] @classCode="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-610).
178. **SHALL** contain exactly one [1..1] @moodCode="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-611).
179. **SHALL** contain exactly one [1..1] templateId (CONF:4376-599) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.39.3.16" (CONF:4376-603).
 - b. **SHALL** contain exactly one [1..1] @extension="2018-08-01" (CONF:4376-604).
180. **SHALL** contain at least one [1..*] id (CONF:4376-612).
181. **SHALL** contain exactly one [1..1] code (CONF:4376-600) such that it
 - a. **SHALL** contain exactly one [1..1] @code="32917-7" Vertical overlap [Length] Maxilla and Mandible Measured (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-605).

- 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:4376-606).
- 182. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-601) such that it
 - a. **SHALL** contain exactly one [1..1] @code="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-607).
- 183. **SHALL** contain exactly one [1..1] **value** with @xsi:type="PQ" (CONF:4376-602) such that it
 - a. **SHALL** contain exactly one [1..1] @value (CONF:4376-608).
 - b. **SHALL** contain exactly one [1..1] @unit="mm" (CodeSystem: UCUM urn:oid:2.16.840.1.113883.6.8) (CONF:4376-609).

Figure 42: Dental Overbite Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.16" extension="2018-08-01"
/>
  <id root="1c93207d-b65b-4d2a-9d09-aedad6a3f9d5" />
  <code code="32917-7" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="PQ" value="5" unit="mm" />
</observation>
```

7.14 Dental Overbite Teeth Count Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.28:2018-08-01 (open)]

Table 63: Dental Overbite Teeth Count Observation Contexts

Contained By:	Contains:
Orthodontic Salzmann Malocclusion Severity Assessment Section (optional)	

Entry for capturing the number of Maxillary incisor teeth with vertical overlap compared to the Mandibular incisors as part of the Salzmann Malocclusion Index.

Table 64: Dental Overbite Teeth Count Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.28:2018-08-01)					
@nullFlavor	0..1	MAY		4376-824	
@classCode	1..1	SHALL		4376-821	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-822	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-811	
@root	1..1	SHALL		4376-815	2.16.840.1.113883.10.20.39.3.28
@extension	1..1	SHALL		4376-816	2018-08-01
id	1..*	SHALL		4376-823	
code	1..1	SHALL		4376-812	
@code	1..1	SHALL		4376-817	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90930-9
@codeSystem	1..1	SHALL		4376-818	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-813	
@code	1..1	SHALL		4376-819	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	INT	4376-814	
@value	1..1	SHALL		4376-820	

184. **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:4376-824).
185. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-821).
186. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-822).
187. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-811) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.39.3.28"** (CONF:4376-815).
 - b. **SHALL** contain exactly one [1..1] **@extension="2018-08-01"** (CONF:4376-816).
188. **SHALL** contain at least one [1..*] **id** (CONF:4376-823).
189. **SHALL** contain exactly one [1..1] **code** (CONF:4376-812) such that it
 - a. **SHALL** contain exactly one [1..1] **@code="90930-9"** Overbite teeth (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-817).
 - 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:4376-818).

190. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-813) such that it
 - a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-819).
191. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="INT" (CONF:4376-814) such that it
 - a. **SHALL** contain exactly one [1..1] **@value** (CONF:4376-820).

Figure 43: Dental Overbite Teeth Count Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.28" extension="2018-08-01"
/>
  <id root="550dcda5-ed26-4589-8079-6dca45b2793a" />
  <code code="90930-9" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="INT" value="2" />
</observation>
```

7.15 Dental Overjet Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.15:2018-08-01 (open)]

Table 65: Dental Overjet Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

Entry for capturing the patient's overjet distance, measured as the horizontal overlap between the Maxillary and Mandible anterior teeth. This distance is recorded in millimeters (mm). A negative distance is recorded to signify a reverse overjet (the Mandibular anterior teeth are in front of the Maxillary teeth).

Table 66: Dental Overjet Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.15:2018-08-01)					
@nullFlavor	0..1	MAY		4376-457	
@classCode	1..1	SHALL		4376-596	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-597	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-592	
@root	1..1	SHALL		4376-594	2.16.840.1.113883.10.20.39.3.15
@extension	1..1	SHALL		4376-429	2018-08-01
id	1..*	SHALL		4376-598	
code	1..1	SHALL		4376-593	
@code	1..1	SHALL		4376-595	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 32916-9
@codeSystem	1..1	SHALL		4376-430	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-428	
@code	1..1	SHALL		4376-431	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	PQ	4376-454	
@value	1..1	SHALL		4376-459	
@unit	1..1	SHALL		4376-460	urn:oid:2.16.840.1.113883.6.8 (UCUM) = mm

192. **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:4376-457).
193. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-596).
194. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-597).
195. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-592) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.39.3.15"** (CONF:4376-594).
 - b. **SHALL** contain exactly one [1..1] **@extension="2018-08-01"** (CONF:4376-429).
196. **SHALL** contain at least one [1..*] **id** (CONF:4376-598).
197. **SHALL** contain exactly one [1..1] **code** (CONF:4376-593) such that it
 - a. **SHALL** contain exactly one [1..1] **@code="32916-9"** Horizontal overlap [Length] Maxilla and Mandible Measured (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-595).

- 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:4376-430).
- 198. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-428) such that
it
 - a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem:
HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-
431).
- 199. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="PQ" (CONF:4376-
454) such that it
 - a. **SHALL** contain exactly one [1..1] **@value** (CONF:4376-459).
 - b. **SHALL** contain exactly one [1..1] **@unit**="mm" (CodeSystem: UCUM
urn:oid:2.16.840.1.113883.6.8) (CONF:4376-460).

Figure 44: Dental Overjet Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.15" extension="2018-08-01"
/>
  <id root="ab04a2b1-a87b-4225-877d-9da991669b5c" />
  <code code="32916-9" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="PQ" value="4" unit="mm" />
</observation>
```

7.16 Dental Overjet Teeth Count Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.27:2018-08-01 (open)]

Table 67: Dental Overjet Teeth Count Observation Contexts

Contained By:	Contains:
Orthodontic Salzmann Malocclusion Severity Assessment Section (optional)	

Entry for capturing the number of incisor teeth with an overjet in the Maxilla or the Mandible as part of the Salzmann Malocclusion Index.

Table 68: Dental Overjet Teeth Count Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.27:2018-08-01)					
@nullFlavor	0..1	MAY		4376-810	
@classCode	1..1	SHALL		4376-807	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-808	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-795	
@root	1..1	SHALL		4376-800	2.16.840.1.113883.10.20.39.3.27
@extension	1..1	SHALL		4376-801	2018-08-01
id	1..*	SHALL		4376-809	
code	1..1	SHALL		4376-796	
@code	1..1	SHALL		4376-802	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90929-1
@codeSystem	1..1	SHALL		4376-803	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-797	
@code	1..1	SHALL		4376-804	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	INT	4376-798	
@value	1..1	SHALL		4376-805	

200. **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:4376-810).
201. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-807).
202. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-808).
203. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-795) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.39.3.27"** (CONF:4376-800).
 - b. **SHALL** contain exactly one [1..1] **@extension="2018-08-01"** (CONF:4376-801).
204. **SHALL** contain at least one [1..*] **id** (CONF:4376-809).
205. **SHALL** contain exactly one [1..1] **code** (CONF:4376-796) such that it
 - a. **SHALL** contain exactly one [1..1] **@code="90929-1"** Overjet teeth (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-802).
 - 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:4376-803).

206. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-797) such that it
- SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-804).
207. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="INT" (CONF:4376-798) such that it
- SHALL** contain exactly one [1..1] **@value** (CONF:4376-805).

Figure 45: Dental Overjet Teeth Count Observation

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.27" extension="2018-08-01"
/>
  <id root="10e01e7f-1f0a-4908-ab20-0692542f9b86" />
  <code code="90929-1" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="INT" value="1" />
</observation>
```

7.17 Dental Posterior Inter-Arch Deviation Observation

[observation: identifier

urn:hl7ii:2.16.840.1.113883.10.20.39.3.31:2018-08-01 (open)]

Table 69: Dental Posterior Inter-Arch Deviation Observation Contexts

Contained By:	Contains:
Orthodontic Salzmann Malocclusion Severity Assessment Section (optional)	

Entry for capturing tooth-specific posterior inter-arch deviations in the canine, 1st premolar, 2nd premolar, and 1st molar teeth in the Maxilla, as part of the Salzmann Malocclusion Index.

Table 70: Dental Posterior Inter-Arch Deviation Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.31:2018-08-01)					
@nullFlavor	0..1	MAY		4376-866	
@classCode	1..1	SHALL		4376-863	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-864	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-853	
@root	1..1	SHALL		4376-857	2.16.840.1.113883.10.20.39.3.31
@extension	1..1	SHALL		4376-858	2018-08-01
id	1..*	SHALL		4376-865	
code	1..1	SHALL		4376-854	
@code	1..1	SHALL		4376-859	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90855-8
@codeSystem	1..1	SHALL		4376-860	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-855	
@code	1..1	SHALL		4376-861	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	4376-856	
@code	1..1	SHALL		4376-868	urn:oid:2.16.840.1.113883.1.11.20571 (Dental Posterior Inter-Arch Deviation Type)
targetSiteCode	1..1	SHALL		4376-867	
@code	1..1	SHALL		4376-869	urn:oid:2.16.840.1.113883.1.11.20572 (Salzmann Index Inter-Arch Deviation Maxillary Tooth)

208. **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:4376-866).
209. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-863).
210. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-864).
211. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-853) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.39.3.31"** (CONF:4376-857).
 - b. **SHALL** contain exactly one [1..1] **@extension="2018-08-01"** (CONF:4376-858).
212. **SHALL** contain at least one [1..*] **id** (CONF:4376-865).
213. **SHALL** contain exactly one [1..1] **code** (CONF:4376-854) such that it

- a. **SHALL** contain exactly one [1..1] **@code**="90855-8" Posterior inter-arch deviation Teeth and gum (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-859).
 - 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:4376-860).
214. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-855) such that it
- a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-861).
215. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="CD" (CONF:4376-856) such that it
- a. **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet [Dental Posterior Inter-Arch Deviation Type](#) urn:oid:2.16.840.1.113883.1.11.20571 (CONF:4376-868).
216. **SHALL** contain exactly one [1..1] **targetSiteCode** (CONF:4376-867) such that it
- a. **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet [Salzmann Index Inter-Arch Deviation Maxillary Tooth](#) urn:oid:2.16.840.1.113883.1.11.20572 (CONF:4376-869).

Table 71: Dental Posterior Inter-Arch Deviation Type

Value Set: Dental Posterior Inter-Arch Deviation Type urn:oid:2.16.840.1.113883.1.11.20571 The SNODENT identifiers for dental posterior inter-arch deviations utilized to calculate the Salzmann Malocclusion Severity Index. 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
210972D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Anterior deviation of posterior interarch
210974D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Posterior deviation of posterior interarch
127434D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Posterior crossbite
141881D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Posterior open bite

Table 72: Salzmann Index Inter-Arch Deviation Maxillary Tooth

Value Set: Salzmann Index Inter-Arch Deviation Maxillary Tooth urn:oid:2.16.840.1.113883.1.11.20572 The SNODENT identifiers for the teeth in the maxilla assessed for tooth-specific inter-arch deviations as part of calculating the Salzmann Malocclusion Severity Index. 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
160840D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper right canine tooth
161607D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper right first premolar tooth
161546D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper right second premolar tooth
161010D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent upper right first molar 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

Figure 46: Dental Posterior Inter-Arch Deviation Observation

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.31" extension="2018-08-01"
/>
  <id root="39fc5e15-f5d1-42e8-bf0d-f7663d8f405b" />
  <code code="90855-8" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="CD" code="127434D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Posterior crossbite" />
  <targetSiteCode code="160957D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Permanent upper left canine tooth" />
</observation>
```

7.18 Dental Rotated Teeth Count Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.24:2018-08-01 (open)]

Table 73: Dental Rotated Teeth Count Observation Contexts

Contained By:	Contains:
Orthodontic Salzmann Malocclusion Severity Assessment Section (optional)	

Entry for capturing the number of rotated teeth in a given area of the oral cavity (Anterior/Posterior Maxilla, Anterior/Posterior Mandible) as part of the Salzmann Malocclusion Index.

Table 74: Dental Rotated Teeth Count Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.24:2018-08-01)					
@nullFlavor	0..1	MAY		4376-762	
@classCode	1..1	SHALL		4376-759	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-760	urn:oid:2.16.840.1.113883.5.1 001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-747	
@root	1..1	SHALL		4376-752	2.16.840.1.113883.10.20.39.3 .24
@extension	1..1	SHALL		4376-753	2018-08-01
id	1..*	SHALL		4376-761	
code	1..1	SHALL		4376-748	
@code	1..1	SHALL		4376-754	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90859-0
@codeSystem	1..1	SHALL		4376-755	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-749	
@code	1..1	SHALL		4376-756	urn:oid:2.16.840.1.113883.5.1 4 (HL7ActStatus) = completed
value	1..1	SHALL	INT	4376-750	
@value	1..1	SHALL		4376-757	
targetSiteCode	1..1	SHALL		4376-751	
@code	1..1	SHALL		4376-758	urn:oid:2.16.840.1.113883.1.1 1.20569 (Oral Cavity Area)

217. **MAY** contain zero or one [0..1] @nullFlavor (CONF:4376-762).

218. **SHALL** contain exactly one [1..1] @classCode="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-759).

219. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-760).
220. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-747) such that it
 - a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.39.3.24" (CONF:4376-752).
 - b. **SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-753).
221. **SHALL** contain at least one [1..*] **id** (CONF:4376-761).
222. **SHALL** contain exactly one [1..1] **code** (CONF:4376-748) such that it
 - a. **SHALL** contain exactly one [1..1] **@code**="90859-0" Rotated teeth (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-754).
 - 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:4376-755).
223. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-749) such that it
 - a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-756).
224. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="INT" (CONF:4376-750) such that it
 - a. **SHALL** contain exactly one [1..1] **@value** (CONF:4376-757).
225. **SHALL** contain exactly one [1..1] **targetSiteCode** (CONF:4376-751) such that it
 - a. **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet [Oral Cavity Area](#) urn:oid:2.16.840.1.113883.1.11.20569 (CONF:4376-758).

Figure 47: Dental Rotated Teeth Count Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.24" extension="2018-08-01"
/>
  <id root="6e90bcec-3c31-4337-88ae-c976c2dce7cc" />
  <code code="90859-0" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="INT" value="1" />
  <targetSiteCode code="210963D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Anterior segment of maxilla"/>
</observation>
```

7.19 Dental Spacing Observation

[observation: identifier

urn:hl7ii:2.16.840.1.113883.10.20.39.3.18:2018-08-01 (open)]

Table 75: Dental Spacing Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

Entry for capturing the tooth space available in a given arch / also noted as the space between teeth of the same arch. This distance is recorded in millimeters (mm). The arch being measured (Maxilla or Mandible) is indicated in the targetSiteCode.

Table 76: Dental Spacing Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.18:2018-08-01)					
@nullFlavor	0..1	MAY		4376-643	
@classCode	1..1	SHALL		4376-640	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-641	urn:oid:2.16.840.1.113883.5.1 001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-629	
@root	1..1	SHALL		4376-633	2.16.840.1.113883.10.20.39.3 .18
@extension	1..1	SHALL		4376-634	2018-08-01
id	1..*	SHALL		4376-642	
code	1..1	SHALL		4376-630	
@code	1..1	SHALL		4376-635	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 32895-5
@codeSystem	1..1	SHALL		4376-636	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-631	
@code	1..1	SHALL		4376-637	urn:oid:2.16.840.1.113883.5.1 4 (HL7ActStatus) = completed
value	1..1	SHALL	PQ	4376-632	
@value	1..1	SHALL		4376-638	
@unit	1..1	SHALL		4376-639	urn:oid:2.16.840.1.113883.6.8 (UCUM) = mm
targetSiteCode	1..1	SHALL		4376-644	
@code	1..1	SHALL		4376-645	urn:oid:2.16.840.1.113883.1.1 1.20568 (Jaw Type)

226. **MAY** contain zero or one [0..1] @nullFlavor (CONF:4376-643).

227. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-640).
228. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-641).
229. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-629) such that it
- SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.39.3.18" (CONF:4376-633).
 - SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-634).
230. **SHALL** contain at least one [1..*] **id** (CONF:4376-642).
231. **SHALL** contain exactly one [1..1] **code** (CONF:4376-630) such that it
- SHALL** contain exactly one [1..1] **@code**="32895-5" Tooth space available {Dental arch} Measured (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-635).
 - 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:4376-636).
232. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-631) such that it
- SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-637).
233. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="PQ" (CONF:4376-632) such that it
- SHALL** contain exactly one [1..1] **@value** (CONF:4376-638).
 - SHALL** contain exactly one [1..1] **@unit**="mm" (CodeSystem: UCUM urn:oid:2.16.840.1.113883.6.8) (CONF:4376-639).
234. **SHALL** contain exactly one [1..1] **targetSiteCode** (CONF:4376-644) such that it
- SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet [Jaw Type](#) urn:oid:2.16.840.1.113883.1.11.20568 (CONF:4376-645).

Table 77: Jaw Type

Value Set: Jaw Type urn:oid:2.16.840.1.113883.1.11.20568 The SNODENT identifiers for the two jaws (mandible and maxilla).			
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
108042D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Bone structure of maxilla
144511D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Bone structure of mandible

Figure 48: Dental Spacing Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.18" extension="2018-08-01"
/>
  <id root="48173696-bebe-4201-a9d9-02b68147ab27" />
  <code code="32895-5" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="PQ" value="5" unit="mm" />
  <targetSiteCode code="108042D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Bone structure of maxilla" />
</observation>
```

7.20 Dentition Stage Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.14:2018-08-01 (open)]

Table 78: Dentition Stage Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

This observation captures the stage of dentition for the patient. The options include primary (baby teeth), permanent (adult teeth), and mixed dentition.

Table 79: Dentition Stage Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.14:2018-08-01)					
@classCode	1..1	SHALL		4376-552	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-553	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-551	
@root	1..1	SHALL		4376-554	2.16.840.1.113883.10.20.39.3.14
@extension	1..1	SHALL		4376-555	2018-08-01
id	1..*	SHALL		4376-556	
code	1..1	SHALL		4376-557	
@code	1..1	SHALL		4376-559	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 34007-5
@codeSystem	1..1	SHALL		4376-560	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-558	
@code	1..1	SHALL		4376-561	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	4376-562	
@code	1..1	SHALL		4376-563	urn:oid:2.16.840.1.113883.1.11.20567 (Dentition State)

235. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-552).
236. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-553).
237. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-551) such that it
- SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.39.3.14" (CONF:4376-554).
 - SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-555).
238. **SHALL** contain at least one [1..*] **id** (CONF:4376-556).
239. **SHALL** contain exactly one [1..1] **code** (CONF:4376-557) such that it
- SHALL** contain exactly one [1..1] **@code**="34007-5" Type of Dentition (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-559).
 - 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:4376-560).

240. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-558) such that it
- a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-561).
241. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="CD" (CONF:4376-562) such that it
- a. **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet Dentition State urn:oid:2.16.840.1.113883.1.11.20567 **DYNAMIC** (CONF:4376-563).

Table 80: Dentition State

Value Set: Dentition State urn:oid:2.16.840.1.113883.1.11.20567			
The SNODENT identifiers for the stages of dentition an individual progresses through during a lifetime.			
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
121288D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Primary Dentition
210962D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Mixed Dentition
139017D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Permanent Dentition

Figure 49: Dentition Stage Observation Sample

```

<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.14" extension="2018-08-01"
/>
  <id root="25e915da-1551-4827-adfa-796359990edb" />
  <code code="34007-5" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="CD" code="139017D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Permanent Dentition"/>
</observation>

```

7.21 Health Status Observation (V2)

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.22.4.5:2014-06-09 (open)]

Table 81: Health Status Observation (V2) Contexts

Contained By:	Contains:
Problem Section (entries optional) (V3) (optional)	

This template represents information about the overall health status of the patient. To represent the impact of a specific problem or concern related to the patient's expected health outcome use the Prognosis Observation template
2.16.840.1.113883.10.20.22.4.113.

Table 82: Health Status Observation (V2) Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.5:2014-06-09)					
@classCode	1..1	SHALL		1098-9057	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		1098-9072	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		1098-16756	
@root	1..1	SHALL		1098-16757	2.16.840.1.113883.10.20.22.4.5
@extension	1..1	SHALL		1098-32558	2014-06-09
id	1..*	SHALL		1098-32486	
code	1..1	SHALL		1098-19143	
@code	1..1	SHALL		1098-19144	11323-3
@codeSystem	1..1	SHALL		1098-32161	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		1098-9074	
@code	1..1	SHALL		1098-19103	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	1098-9075	urn:oid:2.16.840.1.113883.1.11.20.12 (HealthStatus)

242. **SHALL** contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6 **STATIC**) (CONF:1098-9057).
243. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001 **STATIC**) (CONF:1098-9072).
244. **SHALL** contain exactly one [1..1] templateId (CONF:1098-16756) such that it
 - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.5" (CONF:1098-16757).
 - b. **SHALL** contain exactly one [1..1] @extension="2014-06-09" (CONF:1098-32558).
245. **SHALL** contain at least one [1..*] id (CONF:1098-32486).

246. **SHALL** contain exactly one [1..1] **code** (CONF:1098-19143).
- This code **SHALL** contain exactly one [1..1] **@code**="11323-3" Health status (CONF:1098-19144).
 - This code **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:1098-32161).
247. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-9074).
- This statusCode **SHALL** contain exactly one [1..1] **@code**="completed" Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14 **STATIC**) (CONF:1098-19103).
248. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="CD", where the code **SHALL** be selected from ValueSet [HealthStatus](#) urn:oid:2.16.840.1.113883.1.11.20.12 **DYNAMIC** (CONF:1098-9075).

Table 83: HealthStatus

Value Set: HealthStatus urn:oid:2.16.840.1.113883.1.11.20.12 (Clinical Focus: The general health status of the patient),(Data Element Scope:),(Inclusion Criteria:),(Exclusion Criteria:) This value set was imported on 6/25/2019 with a version of 20190517. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.20.12/expansion			
Code	Code System	Code System OID	Print Name
135815002	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	General health good (finding)
135818000	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	General health poor (finding)
161045001	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Disability - severe (finding)
161901003	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Chronic sick (finding)
162467007	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Free of symptoms (situation)
21134002	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Disability (finding)
271593001	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Moribund (finding)
419099009	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Dead (finding)
765205004	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Disorder in remission (disorder)
81323004	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Normal general body function (finding)

Figure 50: Health Status Observation (V2) Example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.5" extension="2014-06-09"/>
  <code code="11323-3" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Health status" />
  <text>
    <reference value="#healthstatus" />
  </text>
  <statusCode code="completed" />
  <value xsi:type="CD" code="81323004" codeSystem="2.16.840.1.113883.6.96"
codeSystemName="SNOMED CT" displayName="Alive and well" />
</observation>
```

7.22 Labiolingual Deviation Observation

[observation: identifier

urn:hl7ii:2.16.840.1.113883.10.20.39.3.20:2018-08-01 (open)]

Table 84: Labiolingual Deviation Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

Entry for capturing the deviation from ideal arch, in mm, for a given arch. Labiolingual deviation may also be referred to as anterior interarch deviation.

Table 85: Labiolingual Deviation Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.20:2018-08-01)					
@nullFlavor	0..1	MAY		4376-679	
@classCode	1..1	SHALL		4376-676	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-677	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-663	
@root	1..1	SHALL		4376-668	2.16.840.1.113883.10.20.39.3.20
@extension	1..1	SHALL		4376-669	2018-08-01
id	1..*	SHALL		4376-678	
code	1..1	SHALL		4376-664	
@code	1..1	SHALL		4376-670	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90863-2
@codeSystem	1..1	SHALL		4376-671	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-665	
@code	1..1	SHALL		4376-672	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	PQ	4376-666	
@value	1..1	SHALL		4376-673	
@unit	1..1	SHALL		4376-674	urn:oid:2.16.840.1.113883.6.8 (UCUM) = mm
targetSiteCode	1..1	SHALL		4376-667	
@code	1..1	SHALL		4376-675	urn:oid:2.16.840.1.113883.1.11.20568 (Jaw Type)

249. **MAY** contain zero or one [0..1] **@nullFlavor** (CONF:4376-679).
250. **SHALL** contain exactly one [1..1] **@classCode="OBS"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-676).
251. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-677).
252. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-663) such that it
 - a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.39.3.20"** (CONF:4376-668).
 - b. **SHALL** contain exactly one [1..1] **@extension="2018-08-01"** (CONF:4376-669).
253. **SHALL** contain at least one [1..*] **id** (CONF:4376-678).
254. **SHALL** contain exactly one [1..1] **code** (CONF:4376-664) such that it

- a. **SHALL** contain exactly one [1..1] **@code**="90863-2" Labio-lingual spread Mouth Measured (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-670).
 - 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:4376-671).
255. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-665) such that it
- a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-672).
256. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="PQ" (CONF:4376-666) such that it
- a. **SHALL** contain exactly one [1..1] **@value** (CONF:4376-673).
 - b. **SHALL** contain exactly one [1..1] **@unit**="mm" (CodeSystem: UCUM urn:oid:2.16.840.1.113883.6.8) (CONF:4376-674).
257. **SHALL** contain exactly one [1..1] **targetSiteCode** (CONF:4376-667) such that it
- a. **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet [Jaw Type](#) urn:oid:2.16.840.1.113883.1.11.20568 (CONF:4376-675).

Figure 51: Labiolingual Deviation Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.20" extension="2018-08-01"
/>
  <id root="747bb7fb-f42d-4a0c-b953-89967a4c882a" />
  <code code="90863-2" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="PQ" value="9" unit="mm" />
  <targetSiteCode code="108042D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Bone structure of maxilla" />
</observation>
```

7.23 Note Activity

[act: identifier urn:hl7ii:2.16.840.1.113883.10.20.22.4.202:2016-11-01 (open)]

Table 86: Note Activity Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	US Realm Person Name (PN.US.FIELDDED) (optional) Author Participation (required) US Realm Date and Time (DT.US.FIELDDED) (optional)

The Note Activity represents a clinical note. Notes require authorship, authentication, timing information, and references to other discrete data such as encounters. Similar to

the Comment Activity, the Note Activity permits a more specific code to characterize the type of information available in the note. The Note Activity template SHOULD NOT be used in place of a more specific C-CDA entry. Note information included needs to be relevant and pertinent to the information being communicated in the document. When the note information augments data represented in a more specific entry template, the Note Activity can be used in an entryRelationship to the associated standard C-CDA entry. For example, a Procedure Note added as an entryRelationship to a Procedure Activity Procedure entry).

The Note Activity template can be used as a standalone entry within a standard C-CDA section (e.g., a note about various procedures which have occurred during a visit as an entry in the Procedures Section) when it does not augment another standard entry. It may also be used to provide additional data about the source of a currently narrative-only section, such as Hospital Course.

Finally, if the type of data in the note is not known or no single C-CDA section is appropriate enough, the Note Activity should be placed in a Notes Section. (e.g., a free-text consultation note or a note which includes subjective, objective, assessment, and plan information combined).

An alternative is to place the Note Activity as an entryRelationship to an Encounter Activity entry in the Encounters Section, but implementers may wish to group notes categorically into a separate location in CDA documents rather than overloading the Encounters Section.

Table 87: Note Activity Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
act (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.202:2016-11-01)					
@classCode	1..1	SHALL		3250-16899	ACT
@moodCode	1..1	SHALL		3250-16900	EVN
templateId	1..1	SHALL		3250-16933	
@root	1..1	SHALL		3250-16934	2.16.840.1.113883.10.20.22.4.202
@extension	1..1	SHALL		3250-16937	2016-11-01
code	1..1	SHALL		3250-16895	
@code	1..1	SHALL		3250-16940	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 34109-9
@codeSystem	1..1	SHALL		3250-16941	2.16.840.1.113883.6.1
translation	0..*	SHOULD		3250-16939	urn:oid:2.16.840.1.113883.11.20.9.68 (Note Types)
text	1..1	SHALL		3250-16896	
@mediaType	0..1	MAY		3250-16906	urn:oid:2.16.840.1.113883.11.20.7.1 (SupportedFileFormats)
reference	1..1	SHALL		3250-16897	

XPath	Card.	Verb	Data Type	CONF#	Value
@nullFlavor	0..0	SHALL NOT		3250-16920	
@value	1..1	SHALL		3250-16898	
statusCode	1..1	SHALL		3250-16916	
effectiveTime	1..1	SHALL		3250-16903	
@value	0..1	SHOULD		3250-16917	
author	1..*	SHALL		3250-16913	Author Participation (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119)
participant	0..*	MAY		3250-16923	
@typeCode	1..1	SHALL		3250-16925	LA
time	1..1	SHALL		3250-16926	US Realm Date and Time (DT.US.FIELDDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.3)
participantRole	1..1	SHALL		3250-16924	
id	1..*	SHALL		3250-16927	
playingEntity	0..1	MAY		3250-16928	
name	1..*	SHALL		3250-16929	US Realm Person Name (PN.US.FIELDDED) (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1.1)
entryRelationship	0..*	SHOULD		3250-16907	
@typeCode	1..1	SHALL		3250-16921	COMP
@inversionInd	1..1	SHALL		3250-16922	true
@negationInd	0..1	MAY		3250-16931	
encounter	1..1	SHALL		3250-16908	
id	1..*	SHALL		3250-16909	
reference	0..*	MAY		3250-16910	
externalDocument	1..1	SHALL		3250-	

XPath	Card.	Verb	Data Type	CONF#	Value
				16911	
id	1..1	SHALL		3250-16915	
code	0..1	SHOULD		3250-16918	

258. **SHALL** contain exactly one [1..1] **@classCode**="ACT" Act (CONF:3250-16899).
259. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CONF:3250-16900).
260. **SHALL** contain exactly one [1..1] **templateId** (CONF:3250-16933) such that it
- a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.202" (CONF:3250-16934).
 - b. **SHALL** contain exactly one [1..1] **@extension**="2016-11-01" (CONF:3250-16937).
261. **SHALL** contain exactly one [1..1] **code** (CONF:3250-16895).
- a. This code **SHALL** contain exactly one [1..1] **@code**="34109-9" Note (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:3250-16940).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.1" LOINC (CONF:3250-16941).
 - c. This code **SHOULD** contain zero or more [0..*] **translation**, which **SHALL** be selected from ValueSet [Note Types](#) urn:oid:2.16.840.1.113883.11.20.9.68 **DYNAMIC** (CONF:3250-16939) such that it

For example - a Cardiologist consult note may specialize a Consult note but not a Progress note

- i. When the Note Activity is within a Note Section, the code **SHOULD** match or specialize the section code (CONF:3250-16942).
 - ii. If the Note Activity is within a typically narrative-only section, the code **MAY** match the section code (CONF:3250-16943).
262. **SHALL** contain exactly one [1..1] **text** (CONF:3250-16896).

If the note was originally in another format, such as RTF, this element may also contain the base-64-encoded raw data of the note in addition to a reference to the narrative.

- a. This text **MAY** contain zero or one [0..1] **@mediaType**, which **SHOULD** be selected from ValueSet [SupportedFileFormats](#) urn:oid:2.16.840.1.113883.11.20.7.1 **DYNAMIC** (CONF:3250-16906).
 - i. If **@mediaType** is present, the text **SHALL** contain exactly one [1..1] **@representation**="B64" and mixed content corresponding to the contents of the note (CONF:3250-16912).

- b. This text **SHALL** contain exactly one [1..1] **reference** (CONF:3250-16897).

The note activity must reference human-readable content in the narrative, so this reference must not be null.

- i. This reference **SHALL NOT** contain [0..0] **@nullFlavor** (CONF:3250-16920).
- ii. This reference **SHALL** contain exactly one [1..1] **@value** (CONF:3250-16898).
 - 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:3250-16902).

Indicates the status of the note. The most common statusCode is completed indicating the note is signed and finalized.

- 263. **SHALL** contain exactly one [1..1] **statusCode** (CONF:3250-16916).

The effectiveTime represents the clinically relevant time of the note. The precise timestamp of creation / updating should be conveyed in author/time.

- 264. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:3250-16903).
 - a. This effectiveTime **SHOULD** contain zero or one [0..1] **@value** (CONF:3250-16917).

Represents the person(s) who wrote the note.

- 265. **SHALL** contain at least one [1..*] **Author Participation** (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119) (CONF:3250-16913).

Represents the person(s) legally responsible for the contents of the note.

- 266. **MAY** contain zero or more [0..*] **participant** (CONF:3250-16923) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="LA"** Legal Authenticator (CONF:3250-16925).

Indicates the time of signing the note.

- b. **SHALL** contain exactly one [1..1] **US Realm Date and Time (DT.US.FIELDDED)** (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.3) (CONF:3250-16926).
- c. **SHALL** contain exactly one [1..1] **participantRole** (CONF:3250-16924).

This may be the ID of the note author. If so, no additional information in this participant is required.

- i. This participantRole **SHALL** contain at least one [1..*] **id** (CONF:3250-16927).
- ii. This participantRole **MAY** contain zero or one [0..1] **playingEntity** (CONF:3250-16928).
 - 1. The playingEntity, if present, **SHALL** contain at least one [1..*] **US Realm Person Name (PN.US.FIELDDED)** (identifier:

urn:oid:2.16.840.1.113883.10.20.22.5.1.1)
(CONF:3250-16929).

- iii. If no id matches an author or participant elsewhere in the document, then playingEntity **SHALL** be present (CONF:3250-16930).

Links the note to an encounter. If the Note Activity is present within a document containing an encompassingEncounter, then this entryRelationship is optional and the note is associated with the encounter represented by the encompassingEncounter.

- 267. **SHOULD** contain zero or more [0..*] **entryRelationship** (CONF:3250-16907) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="COMP"** (CONF:3250-16921).
 - b. **SHALL** contain exactly one [1..1] **@inversionInd="true"** (CONF:3250-16922).

To communicate that the note is not associated with any encounter, this entryRelationship MAY be included with **@negationInd=true** and **encounter/id/@nullFlavor=NA**. The **negationInd + encounter** indicate this note is not associated with any encounter.

- c. **MAY** contain zero or one [0..1] **@negationInd** (CONF:3250-16931).
- d. **SHALL** contain exactly one [1..1] **encounter** (CONF:3250-16908).
 - i. This encounter **SHALL** contain at least one [1..*] **id** (CONF:3250-16909).
 - 1. If the id does not match an encounter/id from the Encounters Section within the same document and the id does not contain **@nullFlavor=NA**, then this entry **SHALL** conform to the Encounter Activity (V3) (identifier:
urn:hl7ii:2.16.840.1.113883.10.20.22.4.49:2015-08-01) (CONF:3250-16914).

Represents an unstructured C-CDA document containing the original contents of the note in the original format.

- 268. **MAY** contain zero or more [0..*] **reference** (CONF:3250-16910) such that it
 - a. **SHALL** contain exactly one [1..1] **externalDocument** (CONF:3250-16911).
 - i. This externalDocument **SHALL** contain exactly one [1..1] **id** (CONF:3250-16915).
 - ii. This externalDocument **SHOULD** contain zero or one [0..1] **code** (CONF:3250-16918).

Table 88: SupportedFileFormats

Value Set: SupportedFileFormats urn:oid:2.16.840.1.113883.11.20.7.1 (Clinical Focus: Indicates the file format of an unstructured document contained in a CDA Unstructured Document.),(Data Element Scope: File format concepts selected from the medType code system.),(Inclusion Criteria: Include concepts where the file format is supported by an Unstructured Document.),(Exclusion Criteria: Exclude concepts where the file format is not supported by an Unstructured Document.) This value set was imported on 7/23/2019 with a version of 20190425. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.11.20.7.1/expansion			
Code	Code System	Code System OID	Print Name
application/msword	Media Type	urn:oid:2.16.840.1.113883.5.79	MSWORD
application/pdf	Media Type	urn:oid:2.16.840.1.113883.5.79	PDF
image/gif	Media Type	urn:oid:2.16.840.1.113883.5.79	GIF Image
image/jpeg	Media Type	urn:oid:2.16.840.1.113883.5.79	JPEG Image
image/png	Media Type	urn:oid:2.16.840.1.113883.5.79	PNG Image
image/tiff	Media Type	urn:oid:2.16.840.1.113883.5.79	TIFF Image
text/html	Media Type	urn:oid:2.16.840.1.113883.5.79	HTML Text
text/plain	Media Type	urn:oid:2.16.840.1.113883.5.79	Plain Text
text/rtf	Media Type	urn:oid:2.16.840.1.113883.5.79	RTF Text

Table 89: Note Types

Value Set: Note Types urn:oid:2.16.840.1.113883.11.20.9.68 (Clinical Focus:),(Data Element Scope:),(Inclusion Criteria: All LOINC codes where scale=document.),(Exclusion Criteria:) This value set was imported on 7/23/2019 with a version of 20190722. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.11.20.9.68/expansion			
Code	Code System	Code System OID	Print Name
11488-4	LOINC	urn:oid:2.16.840.1.113883.6.1	Consult note
11504-8	LOINC	urn:oid:2.16.840.1.113883.6.1	Surgical operation note
11506-3	LOINC	urn:oid:2.16.840.1.113883.6.1	Progress note
18761-7	LOINC	urn:oid:2.16.840.1.113883.6.1	Transfer summary note
18842-5	LOINC	urn:oid:2.16.840.1.113883.6.1	Discharge summary
28570-0	LOINC	urn:oid:2.16.840.1.113883.6.1	Procedure note
34109-9	LOINC	urn:oid:2.16.840.1.113883.6.1	Note
34117-2	LOINC	urn:oid:2.16.840.1.113883.6.1	History and physical note
34746-8	LOINC	urn:oid:2.16.840.1.113883.6.1	Nurse Note
51855-5	LOINC	urn:oid:2.16.840.1.113883.6.1	Patient Note
...			

Figure 52: Note Activity as entryRelationship to C-CDA Entry

```
<?xml version="1.0" encoding="UTF-8"?>
<section>
  <!-- C-CDA 2.1 Procedures Section -->
  <templateId root="2.16.840.1.113883.10.20.22.2.7.1"/>
  <templateId root="2.16.840.1.113883.10.20.22.2.7.1" extension="2014-06-09"/>
  <code code="47519-4" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="HISTORY OF PROCEDURES"/>
  <title>Procedures</title>
  <text>
    <table>
      <thead>
        <tr>
          <th>Description</th>
          <th>Date and Time (Range)</th>
          <th>Status</th>
          <th>Notes</th>
        </tr>
      </thead>
      <tbody>
        <tr ID="Procedure1">
          <td ID="ProcedureDesc1">Laparoscopic appendectomy</td>
          <td>(03 Feb 2014 09:22am- 03 Feb 2014 11:15am)</td>
          <td>Completed</td>
          <td ID="ProcedureNote1">
            <paragraph>Dr. Physician - 03 Feb 2014</paragraph>
            <paragraph>Free-text note about the
procedure.</paragraph>
          </td>
        </tr>
      </tbody>
    </table>
  </text>
  <entry typeCode="DRIV">
    <!-- Procedures should be used for care that directly changes the
patient's physical state.-->
    <procedure moodCode="EVN" classCode="PROC">
      <templateId root="2.16.840.1.113883.10.20.22.4.14" />
      <id root="64af26d5-88ef-4169-ba16-c6ef16a1824f"/>
      <code code="6025007" displayName="Laparoscopic appendectomy"
codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED-CT">
        <originalText>
          <reference value="#ProcedureDesc1" />
        </originalText>
      </code>
      <text>
        <reference value="#Procedure1" />
      </text>
      <statusCode code="completed" />
      <effectiveTime>
        <low value="20140203092205-0700" />
        <high value="20140203111514-0700" />
      </effectiveTime>
      <!-- Note Activity entry -->
      <entryRelationship typeCode="COMP">
        <act classCode="ACT" moodCode="EVN">
```

```

        <templateId root="2.16.840.1.113883.10.20.22.4.202"
extension="2016-11-01"/>
        <code code="34109-9" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Note">
            <translation code="28570-0"
codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Procedure note" />
            </code>
            <text>
                <reference value="#ProcedureNote1" />
            </text>
            <statusCode code="completed"/>
            <!-- Clinically-relevant time of the note -->
            <effectiveTime value="20140203" />
            <!-- Author Participation -->
            <author>
                <templateId root="2.16.840.1.113883.10.20.22.4.119"
/>

                <!-- Time note was actually written -->
                <time value="20140204083215-0500" />
                <assignedAuthor>
                    <id root="20cf14fb-b65c-4c8c-a54d-b0cca834c18c"
/>

                    <name>Dr. Physician</name>
                </assignedAuthor>
            </author>
            <!-- Reference to encounter -->
            <entryRelationship typeCode="COMP" inversionInd="true">
                <encounter>
                    <!-- Encounter ID matches an encounter in the
Encounters Section -->
                    <id root="1.2.3.4" />
                </encounter>
            </entryRelationship>
        </act>
    </entryRelationship>
</procedure>
</entry>
</section>

```

Figure 53: Note Activity as Standalone Entry

```
<section>
  <!-- C-CDA 2.1 Procedures Section, entries optional -->
  <templateId root="2.16.840.1.113883.10.20.22.2.7"/>
  <templateId root="2.16.840.1.113883.10.20.22.2.7" extension="2014-06-
09"/>
  <code code="47519-4" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="HISTORY OF PROCEDURES"/>
  <title>Procedures</title>
  <text>
    <list>
      <item ID="ProcedureNote1">
        <paragraph>Dr. Physician - 03 Feb 2014</paragraph>
        <paragraph>Free-text note about procedures which have
occurred during this visit.</paragraph>
      </item>
    </list>
  </text>
  <!-- If section were entries required, an additional <entry
nullFlavor="NI"> would be required for a Procedure Activity -->
  <!-- Note Activity entry -->
  <entry>
    <act classCode="ACT" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.22.4.202"
extension="2016-11-01"/>
      <code code="34109-9" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Note">
        <translation code="28570-0"
codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Procedure note" />
      </code>
      <text>
        <reference value="#ProcedureNote1" />
      </text>
      <statusCode code="completed"/>
      <!-- Clinically-relevant time of the note -->
      <effectiveTime value="20140203" />
      <!-- Author Participation -->
      <author>
        <templateId root="2.16.840.1.113883.10.20.22.4.119" />
        <!-- Time note was actually written -->
        <time value="20140204083215-0500" />
        <assignedAuthor>
          <id root="20cf14fb-b65c-4c8c-a54d-b0cca834c18c" />
          <name>Dr. Physician</name>
        </assignedAuthor>
      </author>
      <!-- Reference to encounter -->
      <entryRelationship typeCode="COMP" inversionInd="true">
        <encounter>
          <!-- Encounter ID matches an encounter in the Encounters
Section -->
          <id root="1.2.3.4" />
        </encounter>
      </entryRelationship>
    </act>
  </entry>
```

</section>

Figure 54: RTF Example

```
<section>
  <!--...  -->
  <text>
    <list>
      <item ID="note1">
        <caption>Nursing Note written by Nick Nurse</caption>
        <paragraph>Completed rounds; no incident</paragraph>
      </item>
    </list>
  </text>
  <!-- Note Activity (extra markup removed to focus on <text>) -->
  <entry>
    <act>
      <code>...</code>
      <text mediaType="text/rtf"
representation="B64">e1xydGYxXGFuc2lcyW5zaWNwZzEyNTJcZGVmZjBcbm9laWNvbXBhdFxx
ZWZsYW5nMTAzM3tcZm9udHRibHtcZjBcZm5pbFxmY2hhcnNldDAgQ2FsaWJyaTt9fQ0KelwqXGdlb
mVyYXRvciBSaWNoZWQyMCA2LjMuOTYwMH1cdm1ld2tpbmQ0XHVjMSANC1xwYXJkXHNhMjAwXHNsMj
c2XHNsbXVsdDFcZjBcZnMyMlxsYW5nOSBDb2lwbGV0ZWQgcm91bmRzOyBubyBpbmNpZGVudFxxYXI
NCn0NCiA=
      <reference value="#note1"/>
    </text>
    <!--...-->
  </act>
</entry>
```

7.24 Orthodontic Asymmetry of Lower Face Observation

[observation: identifier

urn:hl7ii:2.16.840.1.113883.10.20.39.3.5:2018-08-01 (open)]

Table 90: Orthodontic Asymmetry of Lower Face Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

This entry contains a narrative description of marked asymmetry of the lower face of the patient affecting the patient's orthodontic condition not captured elsewhere in the Orthodontic Attachment.

Table 91: Orthodontic Asymmetry of Lower Face Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.5:2018-08-01)					
@classCode	1..1	SHALL		4376-67	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-68	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-57	
@root	1..1	SHALL		4376-62	2.16.840.1.113883.10.20.39.3.5
@extension	1..1	SHALL		4376-63	2018-08-01
id	1..*	SHALL		4376-161	
code	1..1	SHALL		4376-72	
@code	1..1	SHALL		4376-73	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90869-9
@codeSystem	1..1	SHALL		4376-74	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-61	
@code	1..1	SHALL		4376-66	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	ED	4376-905	
reference	1..1	SHALL		4376-906	
@value	1..1	SHALL		4376-907	

269. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-67).
270. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-68).
271. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-57) such that it
 - a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.39.3.5" (CONF:4376-62).
 - b. **SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-63).
272. **SHALL** contain at least one [1..*] **id** (CONF:4376-161).
273. **SHALL** contain exactly one [1..1] **code** (CONF:4376-72) such that it
 - a. **SHALL** contain exactly one [1..1] **@code**="90869-9" Asymmetry of lower face (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-73).
 - 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:4376-74).
274. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-61) 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:4376-66).
275. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="ED"** (CONF:4376-905) such that it
 - a. **SHALL** contain exactly one [1..1] **reference** (CONF:4376-906).
 - i. This reference **SHALL** contain exactly one [1..1] **@value** (CONF:4376-907).
 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:4376-908).

Figure 55: Orthodontic Asymmetry of Lower Face Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.5" extension="2018-08-01" />
  <id root="8a47da03-40f8-477a-bf47-2dfdd10be1a" />
  <code code="90869-9" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="ED" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <reference value="XXX">
      <!--PRIMITIVE: 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) -->
    </reference>
  </value>
</observation>
```

7.25 Orthodontic Benefits Requested Observation

[observation: identifier

urn:hl7ii:2.16.840.1.113883.10.20.39.3.13:2018-08-01 (open)]

Table 92: Orthodontic Benefits Requested Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

Entry to capture the type of orthodontic benefit requested by the orthodontic provider to which the orthodontic attachment applies.

Ballot Note: A LOINC Answer List has been requested to be used for the value@code of this observation including the following values that correspond to the ADA 1079 guidance:

Case study only
 Interceptive treatment
 Limited treatment
 Comprehensive treatment
 Transfer Case

Table 93: Orthodontic Benefits Requested Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.13:2018-08-01)					
@classCode	1..1	SHALL		4376-232	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-233	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-229	
@root	1..1	SHALL		4376-234	2.16.840.1.113883.10.20.39.3.13
@extension	1..1	SHALL		4376-537	2018-08-01
id	1..*	SHALL		4376-235	
code	1..1	SHALL		4376-230	
@code	1..1	SHALL		4376-236	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 34006-7
@codeSystem	1..1	SHALL		4376-538	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-231	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus)
@code	1..1	SHALL		4376-237	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	4376-238	
@code	1..1	SHALL		4376-407	urn:oid:1.3.6.1.4.1.12009.10.1.2916 (Orthodontic Treatment)

276. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-232).
277. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-233).
278. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-229) such that it
- SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.39.3.13" (CONF:4376-234).
 - SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-537).
279. **SHALL** contain at least one [1..*] **id** (CONF:4376-235).
280. **SHALL** contain exactly one [1..1] **code** (CONF:4376-230) such that it
- SHALL** contain exactly one [1..1] **@code**="34006-7" Orthodontic treatment [Class] (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-236).
 - 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:4376-538).

281. **SHALL** contain exactly one [1..1] **statusCode** (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-231) such that it
- SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-237).
282. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="CD" (CONF:4376-238) such that it
- SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet [Orthodontic Treatment](#) urn:oid:1.3.6.1.4.1.12009.10.1.2916 **DYNAMIC** (CONF:4376-407).

Table 94: Orthodontic Treatment

Value Set: Orthodontic Treatment urn:oid:1.3.6.1.4.1.12009.10.1.2916 The types of Orthodontic Treatment indicated in an Orthodontic Attachment related to reimbursement for care provided. Value Set Source: https://r.details.loinc.org/AnswerList/LL439-1.html			
Code	Code System	Code System OID	Print Name
LA8973-5	LOINC	urn:oid:2.16.840.1.113883.6.1	Interceptive
LA6484-5	LOINC	urn:oid:2.16.840.1.113883.6.1	Limited
LA8975-0	LOINC	urn:oid:2.16.840.1.113883.6.1	Comprehensive
LA8976-8	LOINC	urn:oid:2.16.840.1.113883.6.1	Minor Treatment to Control Harmful Habits

Figure 56: Orthodontic Benefits Requested Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.13" extension="2018-08-01"
/>
  <id root="0bc5348e-1cc5-4df4-bdeb-8fc47cb1b039" />
  <code code="34006-7" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="CD" code="LA8973-5" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Interceptive" />
</observation>
```

7.26 Orthodontic Condylar Abnormality Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.6:2018-08-01 (open)]

Table 95: Orthodontic Condylar Abnormality Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

This entry contains a narrative description of any condylar abnormality affecting the patient's orthodontic condition not captured elsewhere in the Orthodontic Attachment.

Table 96: Orthodontic Condylar Abnormality Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.6:2018-08-01)					
@classCode	1..1	SHALL		4376-95	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-96	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-84	
@root	1..1	SHALL		4376-90	2.16.840.1.113883.10.20.39.3.6
@extension	1..1	SHALL		4376-91	2018-08-01
id	1..*	SHALL		4376-162	
code	1..1	SHALL		4376-89	
@code	1..1	SHALL		4376-97	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90928-3
@codeSystem	1..1	SHALL		4376-98	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-88	
@code	1..1	SHALL		4376-94	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	ED	4376-909	
reference	1..1	SHALL		4376-910	
@value	1..1	SHALL		4376-911	

283. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-95).
284. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-96).
285. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-84) such that it
 - a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.39.3.6" (CONF:4376-90).
 - b. **SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-91).
286. **SHALL** contain at least one [1..*] **id** (CONF:4376-162).
287. **SHALL** contain exactly one [1..1] **code** (CONF:4376-89) such that it
 - a. **SHALL** contain exactly one [1..1] **@code**="90928-3" Physical findings of Mandible condyle (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-97).
 - 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:4376-98).

288. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-88) 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:4376-94).
289. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="ED" (CONF:4376-909).
- a. This value **SHALL** contain exactly one [1..1] **reference** (CONF:4376-910).
 - i. This reference **SHALL** contain exactly one [1..1] **@value** (CONF:4376-911).
 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:4376-912).

Figure 57: Orthodontic Condylar Abnormality Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.6" extension="2018-08-01"
/>
  <id root="e9fe1821-bdca-4c96-9303-57d95542dc6c" />
  <code code="90928-3" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="ED"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <reference value="XXX">
      <!--PRIMITIVE: 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) -->
    </reference>
  </value>
</observation>
```

7.27 Orthodontic Diagnostic Feature Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.10:2018-08-01 (open)]

Table 97: Orthodontic Diagnostic Feature Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

This entry contains the initial high level observations (other than the orthodontic preconditions) called for in the ANSI/ADA Standard No. 1079 that indicate the broad scope of treatment needed by an orthodontic patient.

Table 98: Orthodontic Diagnostic Feature Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.10:2018-08-01)					
@classCode	1..1	SHALL		4376-192	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-193	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-182	
@root	1..1	SHALL		4376-186	2.16.840.1.113883.10.20.39.3.10
@extension	1..1	SHALL		4376-187	2018-08-01
id	1..*	SHALL		4376-194	
code	1..1	SHALL		4376-183	
@code	1..1	SHALL		4376-188	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 29544-4
@codeSystem	1..1	SHALL		4376-189	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-184	
@code	1..1	SHALL		4376-190	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	4376-185	
@code	1..1	SHOULD		4376-191	urn:oid:2.16.840.1.113883.1.11.20564 (Orthodontic Diagnostic Feature)

290. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-192).
291. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-193).
292. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-182) such that it
- SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.39.3.10" (CONF:4376-186).
 - SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-187).
293. **SHALL** contain at least one [1..*] **id** (CONF:4376-194).
294. **SHALL** contain exactly one [1..1] **code** (CONF:4376-183) such that it
- SHALL** contain exactly one [1..1] **@code**="29544-4" Physical findings (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-188).
 - 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:4376-189).

295. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-184) such that it
- a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-190).
296. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="CD" (CONF:4376-185) such that it
- a. **SHOULD** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet [Orthodontic Diagnostic Feature](#) urn:oid:2.16.840.1.113883.1.11.20564 (CONF:4376-191).

Table 99: Orthodontic Diagnostic Feature

Value Set: Orthodontic Diagnostic Feature urn:oid:2.16.840.1.113883.1.11.20564 The SNODENT identifiers for gross patient findings that inform the course of orthodontic treatment to be performed. 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
210952D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Deep impinging overbite with soft tissue destruction
210956D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Posterior crossbite limited to right side
210954D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Lip incompetence due to horizontal overbite
157044D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Bimaxillary protrusion
133426D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Gingival Recession
210957D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Articulatory defect secondary to dental defect
210955D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Posterior crossbite limited to left side
210953D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Anterior crossbite with destruction of oral mucosa

Figure 58: Orthodontic Diagnostic Features Observation

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.10" extension="2018-08-01"
  />
  <id root="782cf570-ed3c-456d-bb1e-e137dcad42cf" />
  <code code="29544-4" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="CD" code="210952D" codeSystem="2.16.840.1.113883.3.3150"
  codeSystemName="SNODENT" displayName="Deep impinging overbite with soft
  tissue destruction"/>
</observation>
```

7.28 Orthodontic Habits Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.3:2018-08-01 (open)]

Table 100: Orthodontic Habits Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

This entry contains a narrative description of personal habits (e.g., thumb sucking, tongue thrusting) affecting the patient's orthodontic condition not captured elsewhere in the Orthodontic Attachment.

Table 101: Orthodontic Habits Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.3:2018-08-01)					
@classCode	1..1	SHALL		4376-43	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-44	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-33	
@root	1..1	SHALL		4376-38	2.16.840.1.113883.10.20.39.3.3
@extension	1..1	SHALL		4376-39	2018-08-01
id	1..*	SHALL		4376-164	
code	1..1	SHALL		4376-75	
@code	1..1	SHALL		4376-76	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90870-7
@codeSystem	1..1	SHALL		4376-77	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-37	
@code	1..1	SHALL		4376-42	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	ED	4376-922	
reference	1..1	SHALL		4376-923	
@value	1..1	SHALL		4376-924	

297. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-43).
298. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-44).
299. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-33) such that it
 - a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.39.3.3" (CONF:4376-38).
 - b. **SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-39).
300. **SHALL** contain at least one [1..*] **id** (CONF:4376-164).
301. **SHALL** contain exactly one [1..1] **code** (CONF:4376-75) such that it
 - a. **SHALL** contain exactly one [1..1] **@code**="90870-7" Habits impacting orthodontic condition (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-76).
 - 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:4376-77).
302. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-37) 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:4376-42).
303. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="ED" (CONF:4376-922) such that it
 - a. **SHALL** contain exactly one [1..1] **reference** (CONF:4376-923).
 - i. This reference **SHALL** contain exactly one [1..1] **@value** (CONF:4376-924).
 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:4376-925).

Figure 59: Orthodontic Habits Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.3" extension="2018-08-01" />
  <id root="81e29dab-ddfc-4691-8a64-52caf66f8419" />
  <code code="90870-7" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="ED" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <reference value="XXX">
      <!--PRIMITIVE: 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)-->
    </reference>
  </value>
</observation>
```

7.29 Orthodontic Precondition Observation

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.39.3.9:2018-08-01 (open)]

Table 102: Orthodontic Precondition Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

This entry captures observations related to the initial set of criteria indicated in the ANSI/ADA Standard No. 1079 for determining whether the patient is ready to begin orthodontic treatment.

Table 103: Orthodontic Precondition Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.9:2018-08-01)					
@classCode	1..1	SHALL		4376-173	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-174	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-169	
@root	1..1	SHALL		4376-175	2.16.840.1.113883.10.20.39.3.9
@extension	1..1	SHALL		4376-176	2018-08-01
id	1..*	SHALL		4376-177	
code	1..1	SHALL		4376-170	
@code	1..1	SHALL		4376-178	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90866-5
@codeSystem	1..1	SHALL		4376-179	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-171	
@code	1..1	SHALL		4376-180	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	4376-172	
@code	1..1	SHOULD		4376-181	urn:oid:2.16.840.1.113883.1.11.20563 (Orthodontic Treatment Precondition)

304. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-173).
305. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-174).
306. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-169) such that it
 - a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.39.3.9" (CONF:4376-175).
 - b. **SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-176).
307. **SHALL** contain at least one [1..*] **id** (CONF:4376-177).
308. **SHALL** contain exactly one [1..1] **code** (CONF:4376-170) such that it
 - a. **SHALL** contain exactly one [1..1] **@code**="90866-5" Orthodontic preconditions (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-178).
 - 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:4376-179).

309. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-171) such that it
- SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-180).
310. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="CD" (CONF:4376-172) such that it
- SHOULD** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet Orthodontic Treatment Precondition urn:oid:2.16.840.1.113883.1.11.20563 (CONF:4376-181).

Table 104: Orthodontic Treatment Precondition

Value Set: Orthodontic Treatment Precondition urn:oid:2.16.840.1.113883.1.11.20563			
The SNODENT identifiers for findings that significant affects the broad course of Orthodontic Treatment for a patient, and therefore must be presented up front when submitting attachments substantiating orthodontic claims.			
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
140234D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Poor oral hygiene
143353D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Temporomandibular joint disorder
210116D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Active dental caries
138900D	SNODENT	urn:oid:2.16.840.1.113883.3.3150	Defective dental restoration

Figure 60: Orthodontic Precondition Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.9" extension="2018-08-01"
/>
  <id root="18a2e719-0c4d-4072-9154-f597c70f14e4" />
  <code code="90866-5" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="CD" code="138900D" codeSystem="2.16.840.1.113883.3.3150"
codeSystemName="SNODENT" displayName="Defective dental restoration"/>
</observation>
```

7.30 Orthodontic Severe Traumatic Deviations Observation

[observation: identifier

urn:hl7ii:2.16.840.1.113883.10.20.39.3.4:2018-08-01 (open)]

Table 105: Orthodontic Severe Traumatic Deviations Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

This entry contains a narrative description of any severe traumatic deviations in the patient's oral cavity (due to burns, car accident, etc.) affecting the patient's orthodontic condition not captured elsewhere in the Orthodontic Attachment.

Table 106: Orthodontic Severe Traumatic Deviations Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.4:2018-08-01)					
@classCode	1..1	SHALL		4376-55	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-56	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-45	
@root	1..1	SHALL		4376-50	2.16.840.1.113883.10.20.39.3.4
@extension	1..1	SHALL		4376-51	2018-08-01
id	1..*	SHALL		4376-167	
code	1..1	SHALL		4376-81	
@code	1..1	SHALL		4376-82	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90932-5
@codeSystem	1..1	SHALL		4376-83	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-49	
@code	1..1	SHALL		4376-54	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	ED	4376-926	
reference	1..1	SHALL		4376-927	
@value	1..1	SHALL		4376-928	

311. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-55).
312. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-56).
313. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-45) such that it

- a. **SHALL** contain exactly one [1..1]
@root="2.16.840.1.113883.10.20.39.3.4" (CONF:4376-50).
 - b. **SHALL** contain exactly one [1..1] @extension="2018-08-01"
(CONF:4376-51).
- 314. **SHALL** contain at least one [1..*] id (CONF:4376-167).
- 315. **SHALL** contain exactly one [1..1] code (CONF:4376-81) such that it
 - a. **SHALL** contain exactly one [1..1] @code="90932-5" Severe traumatic deviations impacting orthodontic condition (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-82).
 - 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:4376-83).
- 316. **SHALL** contain exactly one [1..1] statusCode (CONF:4376-49) 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:4376-54).
- 317. **SHALL** contain exactly one [1..1] value with @xsi:type="ED" (CONF:4376-926) such that it
 - a. **SHALL** contain exactly one [1..1] reference (CONF:4376-927).
 - i. This reference **SHALL** contain exactly one [1..1] @value (CONF:4376-928).
 - 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:4376-929).

Figure 61: Orthodontic Severe Traumatic Deviations Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.4" extension="2018-08-01"
/>
  <id root="3a8137f2-ccf9-48bb-93ad-c32cf80ba6ce" />
  <code code="90932-5" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="ED"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <reference value="XXX">
      <!--PRIMITIVE: 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)-->
    </reference>
  </value>
</observation>
```

7.31 Orthognathic Surgery Possibility Observation

[observation: identifier

urn:hl7ii:2.16.840.1.113883.10.20.39.3.8:2018-08-01 (open)]

Table 107: Orthognathic Surgery Possibility Observation Contexts

Contained By:	Contains:
Orthodontic Observations Section (optional)	

This entry contains a narrative description of patient determinants that make orthognathic surgery a possibility that is being considered.

Table 108: Orthognathic Surgery Possibility Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.8:2018-08-01)					
@classCode	1..1	SHALL		4376-127	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-128	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-114	
@root	1..1	SHALL		4376-120	2.16.840.1.113883.10.20.39.3.8
@extension	1..1	SHALL		4376-121	2018-08-01
id	1..*	SHALL		4376-168	
code	1..1	SHALL		4376-119	
@code	1..1	SHALL		4376-125	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90868-1
@codeSystem	1..1	SHALL		4376-126	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-118	
@code	1..1	SHALL		4376-124	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	ED	4376-930	
reference	1..1	SHALL		4376-931	
@value	1..1	SHALL		4376-932	

318. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-127).
319. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-128).
320. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-114) such that it
 - a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.39.3.8" (CONF:4376-120).

- b. **SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-121).
- 321. **SHALL** contain at least one [1..*] **id** (CONF:4376-168).
- 322. **SHALL** contain exactly one [1..1] **code** (CONF:4376-119) such that it
 - a. **SHALL** contain exactly one [1..1] **@code**="90868-1" Orthognathic surgery consideration summary Narrative (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-125).
 - 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:4376-126).
- 323. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-118) 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:4376-124).
- 324. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="ED" (CONF:4376-930) such that it
 - a. **SHALL** contain exactly one [1..1] **reference** (CONF:4376-931).
 - i. This reference **SHALL** contain exactly one [1..1] **@value** (CONF:4376-932).
 - 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:4376-933).

Figure 62: Orthognathic Surgery Possibility Observation Sample

```

<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.8" extension="2018-08-01"
/>
  <id root="b0d36239-451f-4537-9f6b-367fb6106023" />
  <code code="90868-1" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="ED"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <reference value="XXX">
      <!--PRIMITIVE: 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) -->
    </reference>
  </value>
</observation>

```

7.32 Priority Preference

[observation: identifier urn:oid:2.16.840.1.113883.10.20.22.4.143
(open)]

Table 109: Priority Preference Contexts

Contained By:	Contains:
Problem Observation (V3) (optional) Problem Concern Act (V3) (optional)	Author Participation (optional)

This template represents priority preferences chosen by a patient or a care provider. Priority preferences are choices made by care providers or patients or both relative to options for care or treatment (including scheduling, care experience, and meeting of personal health goals), the sharing and disclosure of health information, and the prioritization of concerns and problems.

Table 110: Priority Preference Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.143)					
@classCode	1..1	SHALL		1098-30949	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		1098-30950	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		1098-30951	
@root	1..1	SHALL		1098-30952	2.16.840.1.113883.10.20.22.4.143
id	1..*	SHALL		1098-30953	
code	1..1	SHALL		1098-30954	
@code	1..1	SHALL		1098-30955	225773000
@codeSystem	1..1	SHALL		1098-30956	urn:oid:2.16.840.1.113883.6.96 (SNOMED CT) = 2.16.840.1.113883.6.96
effectiveTime	0..1	SHOULD		1098-32327	
value	1..1	SHALL	CD	1098-30957	urn:oid:2.16.840.1.113883.11.20.9.60 (Priority Level)
author	0..*	SHOULD		1098-30958	Author Participation (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119)

325. **SHALL** contain exactly one [1..1] @classCode="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:1098-30949).

326. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:1098-30950).
327. **SHALL** contain exactly one [1..1] **templateId** (CONF:1098-30951) such that it
- a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.143" (CONF:1098-30952).
328. **SHALL** contain at least one [1..*] **id** (CONF:1098-30953).
329. **SHALL** contain exactly one [1..1] **code** (CONF:1098-30954).
- a. This code **SHALL** contain exactly one [1..1] **@code**="225773000" Preference (CONF:1098-30955).
- b. This code **SHALL** contain exactly one [1..1] **@codeSystem**="2.16.840.1.113883.6.96" (CodeSystem: SNOMED CT urn:oid:2.16.840.1.113883.6.96) (CONF:1098-30956).
330. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:1098-32327).
331. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="CD", where the code **SHALL** be selected from ValueSet Priority Level urn:oid:2.16.840.1.113883.11.20.9.60 **DYNAMIC** (CONF:1098-30957).
332. **SHOULD** contain zero or more [0..*] Author Participation (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119) (CONF:1098-30958).

Table 111: Priority Level

Value Set: Priority Level urn:oid:2.16.840.1.113883.11.20.9.60 (Clinical Focus: Qualifier representing the priority of an action),(Data Element Scope: qualifier for an action),(Inclusion Criteria: selected concepts for priority),(Exclusion Criteria: only concepts identified; excludes scheduled - priority) This value set was imported on 6/26/2019 with a version of 20190319. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.11.20.9.60/expansion			
Code	Code System	Code System OID	Print Name
394848005	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Normal priority (qualifier value)
394849002	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	High priority (qualifier value)
441808003	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Delayed priority (qualifier value)

Figure 63: Priority Preference Example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.143" />
  <id root="7d66f448-ba82-4291-a9da-9e5db5e58803" />
  <code code="225773000"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="preference" />
  <value xsi:type="CD"
    code="394849002"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    displayName="High priority" />
  <!--
    Author Participation Template
    In this case, the author is the same as a participant already described
    in the header.
    However, the author could be a the record target (patient), a different
    provider -
    someone else in the header, or a new provider not elsewhere specified.
  -->
  <author>
    <templateId root="2.16.840.1.113883.10.20.22.4.119" />
    <time value="20130801" />
    <assignedAuthor>
      <!-- This id points back to a participant in the header -->
      <id root="20cf14fb-b65c-4c8c-a54d-b0cca834c18c" />
    </assignedAuthor>
  </author>
</observation>
```

7.33 Problem Concern Act (V3)

[act: identifier urn:hl7ii:2.16.840.1.113883.10.20.22.4.3:2015-08-01 (open)]

Table 112: Problem Concern Act (V3) Contexts

Contained By:	Contains:
Problem Section (entries optional) (V3) (optional)	Priority Preference (optional) Author Participation (optional) Problem Observation (V3) (required)

This template reflects an ongoing concern on behalf of the provider that placed the concern on a patient's problem list. So long as the underlying condition is of concern to the provider (i.e., as long as the condition, whether active or resolved, is of ongoing concern and interest to the provider), the statusCode is "active". Only when the underlying condition is no longer of concern is the statusCode set to "completed". The effectiveTime reflects the time that the underlying condition was felt to be a concern; it may or may not correspond to the effectiveTime of the condition (e.g., even five years later, the clinician may remain concerned about a prior heart attack).

The statusCode of the Problem Concern Act is the definitive indication of the status of the concern, whereas the effectiveTime of the nested Problem Observation is the definitive indication of whether or not the underlying condition is resolved. The effectiveTime/low of the Problem Concern Act asserts when the concern became active. The effectiveTime/high asserts when the concern was completed (e.g., when the clinician deemed there is no longer any need to track the underlying condition). A Problem Concern Act can contain many Problem Observations (templateId 2.16.840.1.113883.10.20.22.4.4). Each Problem Observation is a discrete observation of a condition, and therefore will have a statusCode of “completed”. The many Problem Observations nested under a Problem Concern Act reflect the change in the clinical understanding of a condition over time. For instance, a Concern may initially contain a Problem Observation of “chest pain”:

- Problem Concern 1
 - Problem Observation: Chest Pain
 - Later, a new Problem Observation of “esophagitis” will be added, reflecting a better understanding of the nature of the chest pain. The later problem observation will have a more recent author time stamp.
- Problem Concern 1
 - Problem Observation (author/time Jan 3, 2012): Chest Pain
 - Problem Observation (author/time Jan 6, 2012): Esophagitis
 - Many systems display the nested Problem Observation with the most recent author time stamp, and provide a mechanism for viewing prior observations.

Table 113: Problem Concern Act (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
act (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.3:2015-08-01)					
@classCode	1..1	SHALL		1198-9024	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = ACT
@moodCode	1..1	SHALL		1198-9025	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		1198-16772	
@root	1..1	SHALL		1198-16773	2.16.840.1.113883.10.20.22.4.3
@extension	1..1	SHALL		1198-32509	2015-08-01
id	1..*	SHALL		1198-9026	
code	1..1	SHALL		1198-9027	
@code	1..1	SHALL		1198-19184	CONC
@codeSystem	1..1	SHALL		1198-32168	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = 2.16.840.1.113883.5.6
statusCode	1..1	SHALL		1198-9029	

XPath	Card.	Verb	Data Type	CONF#	Value
@code	1..1	SHALL		1198-31525	urn:oid:2.16.840.1.113883.11.20.9.19 (ProblemAct statusCode)
effectiveTime	1..1	SHALL		1198-9030	
low	1..1	SHALL		1198-9032	
high	0..1	MAY		1198-9033	
author	0..*	SHOULD		1198-31146	Author Participation (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119)
entryRelationship	1..*	SHALL		1198-9034	
@typeCode	1..1	SHALL		1198-9035	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
observation	1..1	SHALL		1198-15980	Problem Observation (V3) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.4:2015-08-01)
entryRelationship	0..*	MAY		1198-31638	
@typeCode	1..1	SHALL		1198-31639	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
observation	1..1	SHALL		1198-31640	Priority Preference (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.143)

333. **SHALL** contain exactly one [1..1] @classCode="ACT" Act (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6 **STATIC**) (CONF:1198-9024).
334. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001 **STATIC**) (CONF:1198-9025).
335. **SHALL** contain exactly one [1..1] templateId (CONF:1198-16772) such that it
- a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.22.4.3" (CONF:1198-16773).
 - b. **SHALL** contain exactly one [1..1] @extension="2015-08-01" (CONF:1198-32509).
336. **SHALL** contain at least one [1..*] id (CONF:1198-9026).
337. **SHALL** contain exactly one [1..1] code (CONF:1198-9027).

- a. This code **SHALL** contain exactly one [1..1] **@code="CONC"** Concern (CONF:1198-19184).
- b. This code **SHALL** contain exactly one [1..1] **@codeSystem="2.16.840.1.113883.5.6"** (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:1198-32168).

338. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1198-9029).

The statusCode of the Problem Concern Act is the definitive indication of the status of the concern, whereas the effectiveTime of the nested Problem Observation is the definitive indication of whether or not the underlying condition is resolved.

- a. This statusCode **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet [ProblemAct statusCode](#) urn:oid:2.16.840.1.113883.11.20.9.19 **STATIC** (CONF:1198-31525).
339. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1198-9030).
- a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1198-9032).
Note: The effectiveTime/low of the Problem Concern Act asserts when the concern became active.
 - b. This effectiveTime **MAY** contain zero or one [0..1] **high** (CONF:1198-9033).
Note: The effectiveTime/high asserts when the concern was completed (e.g., when the clinician deemed there is no longer any need to track the underlying condition).
340. **SHOULD** contain zero or more [0..*] [Author Participation](#) (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119) (CONF:1198-31146).
341. **SHALL** contain at least one [1..*] **entryRelationship** (CONF:1198-9034) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** Has subject (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002 **STATIC**) (CONF:1198-9035).
 - b. **SHALL** contain exactly one [1..1] [Problem Observation \(V3\)](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.4:2015-08-01) (CONF:1198-15980).

The following entryRelationship represents the importance of the concern to a provider.

342. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:1198-31638) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** refers to (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:1198-31639).
 - b. **SHALL** contain exactly one [1..1] [Priority Preference](#) (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.143) (CONF:1198-31640).

Table 114: ProblemAct statusCode

Value Set: ProblemAct statusCode urn:oid:2.16.840.1.113883.11.20.9.19 A ValueSet of HL7 actStatus codes for use on the concern act Value Set Source: http://www.hl7.org/documentcenter/public/standards/vocabulary/vocabulary_tables/in_frastructure/vocabulary/vocabulary.html			
Code	Code System	Code System OID	Print Name
completed	HL7ActStatus	urn:oid:2.16.840.1.113883.5.14	Completed
aborted	HL7ActStatus	urn:oid:2.16.840.1.113883.5.14	Aborted
active	HL7ActStatus	urn:oid:2.16.840.1.113883.5.14	Active
suspended	HL7ActStatus	urn:oid:2.16.840.1.113883.5.14	Suspended

Figure 64: Problem Concern Act (V3) Example

```

<act classCode="ACT" moodCode="EVN">
  <!-- ** Problem Concern Act (V3) ** -->
  <templateId root="2.16.840.1.113883.10.20.22.4.3"
    extension="2015-08-01" />
  <id root="ec8a6ff8-ed4b-4f7e-82c3-e98e58b45de7" />
  <code code="CONC" codeSystem="2.16.840.1.113883.5.6"
    displayName="Concern" />
  <!-- The statusCode represents the need to continue tracking the problem
-->
  <!-- This is of ongoing concern to the provider -->
  <statusCode code="active" />
  <effectiveTime>
    <!-- The low value represents when the problem was first recorded in
the patient's chart -->
    <!-- Concern was documented on July 6, 2013 -->
    <low value="201307061145-0800" />
  </effectiveTime>
  <author typeCode="AUT">
    <templateId root="2.16.840.1.113883.10.20.22.4.119" />
    <!-- Same as Concern effectiveTime/low -->
    <time value="201307061145-0800" />
    <assignedAuthor>
      <id extension="555555555" root="2.16.840.1.113883.4.6" />
      <code code="207QA0505X" displayName="Adult Medicine"
codeSystem="2.16.840.1.113883.6.101"
codeSystemName="Healthcare Provider Taxonomy (HIPAA)" />
    </assignedAuthor>
  </author>
  <entryRelationship typeCode="SUBJ">
    <observation classCode="OBS" moodCode="EVN">
      <!-- ** Problem Observation (V3) ** -->
      <templateId root="2.16.840.1.113883.10.20.22.4.4"
extension="2015-08-01" />
      <id root="ab1791b0-5c71-11db-b0de-0800200c9a66" />
      <code code="75323-6" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Condition" />
      <!-- The statusCode reflects the status of the observation itself
-->
      <statusCode code="completed" />
      <effectiveTime>
        <!-- The low value reflects the date of onset -->
        <!-- Based on patient symptoms, presumed onset is July 3,
2013 -->
        <low value="20130703" />
        <!-- The high value reflects when the problem was known to be
resolved -->
        <!-- Based on signs and symptoms, appears to be resolved on
Aug 14, 2013 -->
        <high value="20080814" />
      </effectiveTime>
      <value xsi:type="CD"
code="233604007"
codeSystem="2.16.840.1.113883.6.96"
displayName="Pneumonia" />
      <author typeCode="AUT">
        <templateId root="2.16.840.1.113883.10.20.22.4.119" />
        <time value="200808141030-0800" />

```

```

        <assignedAuthor>
          <id extension="555555555" root="2.16.840.1.113883.4.6" />
          <code code="207QA0505X"
            displayName="Adult Medicine"
            codeSystem="2.16.840.1.113883.6.101"
            codeSystemName="Healthcare Provider Taxonomy (HIPAA)" />
        </assignedAuthor>
      </author>
    </observation>
  </entryRelationship>
</act>

```

7.34 Problem Observation (V3)

```

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.22.4.4:2015-08-01 (open)]

```

Table 115: Problem Observation (V3) Contexts

Contained By:	Contains:
Problem Concern Act (V3) (required)	Age Observation (optional) Prognosis Observation (optional) Priority Preference (optional) Author Participation (optional) Problem Status (optional)

This template reflects a discrete observation about a patient's problem. Because it is a discrete observation, it will have a statusCode of "completed". The effectiveTime, also referred to as the “biologically relevant time” is the time at which the observation holds for the patient. For a provider seeing a patient in the clinic today, observing a history of heart attack that occurred five years ago, the effectiveTime is five years ago. The effectiveTime of the Problem Observation is the definitive indication of whether or not the underlying condition is resolved. If the problem is known to be resolved, then an effectiveTime/high would be present. If the date of resolution is not known, then effectiveTime/high will be present with a nullFlavor of "UNK".

Table 116: Problem Observation (V3) Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.4:2015-08-01)					
@classCode	1..1	SHALL		1198-9041	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		1198-9042	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
@negationInd	0..1	MAY		1198-10139	
templateId	1..1	SHALL		1198-14926	
@root	1..1	SHALL		1198-14927	2.16.840.1.113883.10.20.22.4.4

XPath	Card.	Verb	Data Type	CONF#	Value
@extension	1..1	SHALL		1198-32508	2015-08-01
id	1..*	SHALL		1198-9043	
code	1..1	SHALL		1198-9045	urn:oid:2.16.840.1.113883.3.88.12.3221.7.2 (Problem Type (SNOMEDCT))
statusCode	1..1	SHALL		1198-9049	
@code	1..1	SHALL		1198-19112	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	1..1	SHALL		1198-9050	
low	1..1	SHALL		1198-15603	
high	0..1	MAY		1198-15604	
value	1..1	SHALL	CD	1198-9058	urn:oid:2.16.840.1.113883.3.88.12.3221.7.4 (Problem)
@code	0..1	MAY		1198-31871	
qualifier	0..*	MAY		1198-31870	
translation	0..*	MAY		1198-16749	
@code	0..1	MAY		1198-16750	urn:oid:2.16.840.1.113883.6.90 (ICD-10-CM)
author	0..*	SHOULD		1198-31147	Author Participation (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119)
entryRelationship	0..1	MAY		1198-9059	
@typeCode	1..1	SHALL		1198-9060	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = SUBJ
@inversionInd	1..1	SHALL		1198-9069	true
observation	1..1	SHALL		1198-15590	Age Observation (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.31)
entryRelationship	0..1	MAY		1198-29951	
@typeCode	1..1	SHALL		1198-31531	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
observation	1..1	SHALL		1198-	Prognosis Observation

XPath	Card.	Verb	Data Type	CONF#	Value
				29952	(identifier: urn:oid:2.16.840.1.113883.10.20.22.4.113)
entryRelationship	0..*	MAY		1198-31063	
@typeCode	1..1	SHALL		1198-31532	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
observation	1..1	SHALL		1198-31064	Priority Preference (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.143)
entryRelationship	0..1	MAY		1198-9063	
@typeCode	1..1	SHALL		1198-9068	urn:oid:2.16.840.1.113883.5.1002 (HL7ActRelationshipType) = REFR
observation	1..1	SHALL		1198-15591	Problem Status (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.6:2019-06-20)

343. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6 **STATIC**) (CONF:1198-9041).

344. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001 **STATIC**) (CONF:1198-9042).

The negationInd is used to indicate the absence of the condition in observation/value. A negationInd of "true" coupled with an observation/value of SNOMED code 64572001 "Disease (disorder)" indicates that the patient has no known conditions.

345. **MAY** contain zero or one [0..1] **@negationInd** (CONF:1198-10139).

346. **SHALL** contain exactly one [1..1] **templateId** (CONF:1198-14926) such that it

- SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.4"** (CONF:1198-14927).
- SHALL** contain exactly one [1..1] **@extension="2015-08-01"** (CONF:1198-32508).

347. **SHALL** contain at least one [1..*] **id** (CONF:1198-9043).

348. **SHALL** contain exactly one [1..1] **code**, which **SHOULD** be selected from ValueSet [Problem Type \(SNOMEDCT\)](#) urn:oid:2.16.840.1.113883.3.88.12.3221.7.2 **DYNAMIC** (CONF:1198-9045).

- If code is selected from ValueSet Problem Type (SNOMEDCT) urn:oid:2.16.840.1.113883.3.88.12.3221.7.2 **DYNAMIC**, then it **SHALL** have at least one [1..*] translation, which **SHOULD** be selected from ValueSet Problem Type (LOINC)

urn:oid:2.16.840.1.113762.1.4.1099.28 **DYNAMIC** (CONF:1198-32950)
(CONF:1198-32950).

349. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1198-9049).
- a. This **statusCode** **SHALL** contain exactly one [1..1] **@code**="completed"
Completed (CodeSystem: HL7ActStatus
urn:oid:2.16.840.1.113883.5.14 **STATIC**) (CONF:1198-19112).

If the problem is known to be resolved, but the date of resolution is not known, then the high element **SHALL** be present, and the nullFlavor attribute **SHALL** be set to 'UNK'. Therefore, the existence of a high element within a problem does indicate that the problem has been resolved.

350. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1198-9050).

The effectiveTime/low (a.k.a. "onset date") asserts when the condition became biologically active.

- a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1198-15603).

The effectiveTime/high (a.k.a. "resolution date") asserts when the condition became biologically resolved.

- b. This effectiveTime **MAY** contain zero or one [0..1] **high** (CONF:1198-15604).

351. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="CD", where the code **SHOULD** be selected from ValueSet [Problem](#)
urn:oid:2.16.840.1.113883.3.88.12.3221.7.4 **DYNAMIC** (CONF:1198-9058).

A negationInd of "true" coupled with an observation/value/**@code** of SNOMED code 64572001 "Disease (disorder)" indicates that the patient has no known conditions.

- a. This value **MAY** contain zero or one [0..1] **@code** (CONF:1198-31871).

The observation/value and all the qualifiers together (often referred to as a post-coordinated expression) make up one concept. Qualifiers constrain the meaning of the primary code, and cannot negate it or change its meaning. Qualifiers can only be used according to well-defined rules of post-coordination and only if the underlying code system defines the use of such qualifiers or if there is a third code system that specifies how other code systems may be combined.

For example, SNOMED CT allows constructing concepts as a combination of multiple codes. SNOMED CT defines a concept "pneumonia (disorder)" (233604007) an attribute "finding site" (363698007) and another concept "left lower lobe of lung (body structure)" (41224006). SNOMED CT allows one to combine these codes in a code phrase, as shown in the sample XML.

- b. This value **MAY** contain zero or more [0..*] **qualifier** (CONF:1198-31870).
- c. This value **MAY** contain zero or more [0..*] **translation** (CONF:1198-16749) such that it
- i. **MAY** contain zero or one [0..1] **@code** (CodeSystem: ICD-10-CM
urn:oid:2.16.840.1.113883.6.90 **STATIC**) (CONF:1198-16750).

352. **SHOULD** contain zero or more [0..*] [Author Participation](#) (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119) (CONF:1198-31147).
353. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:1198-9059) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** Has subject (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002 **STATIC**) (CONF:1198-9060).
 - b. **SHALL** contain exactly one [1..1] **@inversionInd="true"** True (CONF:1198-9069).
 - c. **SHALL** contain exactly one [1..1] [Age Observation](#) (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.31) (CONF:1198-15590).
354. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:1198-29951) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** Refers to (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:1198-31531).
 - b. **SHALL** contain exactly one [1..1] [Prognosis Observation](#) (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.113) (CONF:1198-29952).
355. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:1198-31063) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** Refers to (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:1198-31532).
 - b. **SHALL** contain exactly one [1..1] [Priority Preference](#) (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.143) (CONF:1198-31064).
356. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:1198-9063) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** Refers to (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:1198-9068).
 - b. **SHALL** contain exactly one [1..1] [Problem Status](#) (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.6:2019-06-20) (CONF:1198-15591).

Table 117: Problem

Value Set: Problem urn:oid:2.16.840.1.113883.3.88.12.3221.7.4 (Clinical Focus: A pathology or disorder identified in a patient),(Data Element Scope: Observations),(Inclusion Criteria: Limited to terms descending from the Clinical Findings (404684003) or Situation with Explicit Context (243796009) hierarchies.), (Exclusion Criteria: any concept not in the hierarchies specified) This value set was imported on 6/26/2019 with a version of 20190426. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.3.88.12.3221.7.4/expansion			
Code	Code System	Code System OID	Print Name
10000006	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Radiating chest pain (finding)
10001005	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Bacterial sepsis (disorder)
10007009	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Coffin-Siris syndrome (disorder)
1001000119102	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Pulmonary embolism with pulmonary infarction (disorder)
1001000124104	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Normal left ventricular systolic function (finding)
10017004	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Occlusal wear of teeth (disorder)
100191000119105	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Asymmetry of prostate (finding)
100211000119106	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Muscle spasm of thoracic back (disorder)
100231000119101	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Acquired pericardial cyst (disorder)
10028000	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Uncomplicated sedative, hypnotic AND/OR anxiolytic withdrawal (disorder)
...			

Table 118: Problem Type (SNOMEDCT)

Value Set: Problem Type (SNOMEDCT) urn:oid:2.16.840.1.113883.3.88.12.3221.7.2 (Clinical Focus: A problem observation categorization of the condition as represented in the SNOMED CT code system.), (Data Element Scope: Problem Observation), (Inclusion Criteria: High level condition types as selected for use.), (Exclusion Criteria: Only the codes selected.) This value set was imported on 6/20/2019 with a version of 20190319. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.3.88.12.3221.7.2/expansion			
Code	Code System	Code System OID	Print Name
248536006	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Finding of functional performance and activity (finding)
282291009	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Diagnosis interpretation (observable entity)
373930000	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Cognitive function finding (finding)
404684003	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Clinical finding (finding)
409586006	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Complaint (finding)
418799008	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Finding reported by subject or history provider (finding)
55607006	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Problem (finding)
64572001	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Disease (disorder)

Table 119: Problem Type (LOINC)

Value Set: Problem Type (LOINC) urn:hl7ii:2.16.840.1.113883.3.88.12.3221.7.2:2014-09-02 This value set indicates the level of medical judgment used to determine the existence of a problem using selected concepts from LOINC. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.3.88.12.3221.7.2/expansion			
Code	Code System	Code System OID	Print Name
75326-9	LOINC	urn:oid:2.16.840.1.113883.6.1	Problem HL7.CCDAR2
75325-1	LOINC	urn:oid:2.16.840.1.113883.6.1	Symptom HL7.CCDAR2
75324-4	LOINC	urn:oid:2.16.840.1.113883.6.1	Functional performance HL7.CCDAR2
75323-6	LOINC	urn:oid:2.16.840.1.113883.6.1	Condition HL7.CCDAR2
29308-4	LOINC	urn:oid:2.16.840.1.113883.6.1	Diagnosis
75322-8	LOINC	urn:oid:2.16.840.1.113883.6.1	Complaint HL7.CCDAR2
75321-0	LOINC	urn:oid:2.16.840.1.113883.6.1	Clinical finding HL7.CCDAR2
75319-4	LOINC	urn:oid:2.16.840.1.113883.6.1	Cognitive function family member HL7.CCDAR2
75318-6	LOINC	urn:oid:2.16.840.1.113883.6.1	Problem family member HL7.CCDAR2
75317-8	LOINC	urn:oid:2.16.840.1.113883.6.1	Symptom family member HL7.CCDAR2
...			

Figure 65: Problem Observation (V3) Example

```
<observation classCode="OBS" moodCode="EVN">
  <!-- ** Problem Observation (V3) ** -->
  <templateId root="2.16.840.1.113883.10.20.22.4.4" extension="2015-08-01"
/>

  <id root="ab1791b0-5c71-11db-b0de-0800200c9a66" />
  <code code="64572001" displayName="Condition"
                                codeSystem="2.16.840.1.113883.6.96"
codeSystemName="SNOMED CT">
  <translation code="75323-6"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="Condition"/>
</code>
  <!-- The statusCode reflects the status of the observation itself -->
  <statusCode code="completed" />
  <effectiveTime>
    <!-- The low value reflects the date of onset -->
    <!-- Based on patient symptoms, presumed onset is July 3, 2013 -->
    <low value="20130703" />
    <!-- The high value reflects when the problem was known to be
resolved -->
    <!-- Based on signs and symptoms, appears to be resolved on Aug 14,
2013 -->
    <high value="20080814" />
  </effectiveTime>
  <value xsi:type="CD"
code="233604007"
codeSystem="2.16.840.1.113883.6.96"
displayName="Pneumonia" />
  <author typeCode="AUT">
    <templateId root="2.16.840.1.113883.10.20.22.4.119" />
    <time value="200808141030-0800" />
    <assignedAuthor>
      <id extension="555555555" root="2.16.840.1.113883.4.6" />
      <code code="207QA0505X"
displayName="Adult Medicine"
codeSystem="2.16.840.1.113883.6.101"
codeSystemName="Healthcare Provider Taxonomy (HIPAA)" />
    </assignedAuthor>
  </author>
</observation>
```

7.35 Problem Status

[observation: identifier
urn:hl7ii:2.16.840.1.113883.10.20.22.4.6:2019-06-20 (open)]

Table 120: Problem Status Contexts

Contained By:	Contains:
Problem Observation (V3) (optional)	

The Problem Status records the clinical status attributed to the problem.

Table 121: Problem Status Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.6:2019-06-20)					
@classCode	1..1	SHALL		1198-7357	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		1198-7358	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		1198-7359	
@root	1..1	SHALL		1198-10518	2.16.840.1.113883.10.20.22.4.6
@extension	1..1	SHALL		1198-32961	2019-06-20
code	1..1	SHALL		1198-19162	
@code	1..1	SHALL		1198-19163	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 33999-4
statusCode	1..1	SHALL		1198-7364	
@code	1..1	SHALL		1198-19113	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	CD	1198-7365	urn:oid:2.16.840.1.113883.3.88.12.80.68 (Problem Status)

357. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6 **STATIC**) (CONF:1198-7357).
358. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001 **STATIC**) (CONF:1198-7358).
359. **SHALL** contain exactly one [1..1] **templateId** (CONF:1198-7359) such that it
- SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.6"** (CONF:1198-10518).
 - SHALL** contain exactly one [1..1] **@extension="2019-06-20"** (CONF:1198-32961).
360. **SHALL** contain exactly one [1..1] **code** (CONF:1198-19162).
- This code **SHALL** contain exactly one [1..1] **@code="33999-4"** Status (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1 **STATIC**) (CONF:1198-19163).
361. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1198-7364).
- This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14 **STATIC**) (CONF:1198-19113).

362. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD", where the code **SHALL** be selected from ValueSet [Problem Status](#) urn:oid:2.16.840.1.113883.3.88.12.80.68 **DYNAMIC** (CONF:1198-7365).

Table 122: Problem Status

Value Set: Problem Status urn:oid:2.16.840.1.113883.3.88.12.80.68 (Clinical Focus: The clinical status of a problem),(Data Element Scope: Status value),(Inclusion Criteria: Selected qualifier values that represent the clinical status of a problem),(Exclusion Criteria: none specific) This value set was imported on 6/26/2019 with a version of 20190418. Value Set Source: https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.3.88.12.80.68/expansion			
Code	Code System	Code System OID	Print Name
246455001	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Recurrence (qualifier value)
263855007	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Relapse phase (qualifier value)
277022003	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Remission phase (qualifier value)
413322009	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Problem resolved (finding)
55561003	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Active (qualifier value)
73425007	SNOMED CT	urn:oid:2.16.840.1.113883.6.96	Inactive (qualifier value)

7.36 Prognosis Observation

[observation: identifier urn:oid:2.16.840.1.113883.10.20.22.4.113 (open)]

Table 123: Prognosis Observation Contexts

Contained By:	Contains:
Problem Observation (V3) (optional)	

This template represents the patient's prognosis, which must be associated with a problem observation. It may serve as an alert to scope intervention plans. The effectiveTime represents the clinically relevant time of the observation. The observation/value is not constrained and can represent the expected life duration in PQ, an anticipated course of the disease in text, or coded term.

Table 124: Prognosis Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.113)					
@classCode	1..1	SHALL		1098-29035	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		1098-29036	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		1098-29037	
@root	1..1	SHALL		1098-29038	2.16.840.1.113883.10.20.22.4.113
code	1..1	SHALL		1098-29039	
@code	1..1	SHALL		1098-29468	75328-5
@codeSystem	1..1	SHALL		1098-31349	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		1098-31350	
@code	1..1	SHALL		1098-31351	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
effectiveTime	1..1	SHALL		1098-31123	
value	1..1	SHALL		1098-29469	

363. **SHALL** contain exactly one [1..1] **@classCode="OBS"** Observation (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6 **STATIC**) (CONF:1098-29035).
364. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** Event (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001 **STATIC**) (CONF:1098-29036).
365. **SHALL** contain exactly one [1..1] **templateId** (CONF:1098-29037) such that it
- a. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.22.4.113"** (CONF:1098-29038).
366. **SHALL** contain exactly one [1..1] **code** (CONF:1098-29039).
- a. This code **SHALL** contain exactly one [1..1] **@code="75328-5"** Prognosis (CONF:1098-29468).
 - b. This code **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:1098-31349).
367. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-31350).

- a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1098-31351).
368. **SHALL** contain exactly one [1..1] effectiveTime (CONF:1098-31123).
369. **SHALL** contain exactly one [1..1] value (CONF:1098-29469).

Figure 66: Prognosis, Free Text Example

```
<observation classCode="OBS" moodCode="EVN">
  <!-- Prognosis -->
  <templateId root="2.16.840.1.113883.10.20.22.4.113" />
  <id root="2097c709-291b-4a0f-bef9-ad9b23b3bb43" />
  <code code="75328-5"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    displayName="Prognosis" />
  <text>
    Presence of a life limiting condition(>50% possibility of death
    within 2 year)
  </text>
  <statusCode code="completed" />
  <effectiveTime value="20130606" />
  <value xsi:type="ST">Presence of a life limiting condition(>50%
  possibility of death within 2 year</value>
</observation>
```

Figure 67: Prognosis, Coded Example

```
<entryRelationship typeCode="REFR">
  <observation classCode="OBS" moodCode="EVN">
    <!-- Prognosis -->
    <templateId root="2.16.840.1.113883.10.20.22.4.113" />
    <id root="2097c709-291b-4a0f-bef9-ad9b23b3bb43" />
    <code code="75328-5"
      codeSystem="2.16.840.1.113883.6.1"
      codeSystemName="LOINC"
      displayName="Prognosis" />
    <statusCode code="completed" />
    <effectiveTime>
      <low value="20130301" />
    </effectiveTime>
    <value xsi:type="CD" code="67334001"
    codeSystem="2.16.840.1.113883.6.96" displayName="guarded prognosis"
    codeSystemName="SNOMED CT" />
  </observation>
</entryRelationship>
```

7.37 Salzmann Index Observation

[observation: identifier

urn:hl7ii:2.16.840.1.113883.10.20.39.3.21:2018-08-01 (open)]

Table 125: Salzmann Index Observation Contexts

Contained By:	Contains:
Orthodontic Salzmann Malocclusion Severity Assessment Section (optional)	

Entry for capturing the calculated Salzmann Malocclusion Index, as a raw integer. It is expected that customized guidance may have been followed when calculating the Salzmann Index, so this entry simply serves to communicate the Salzmann Index believed to be accurate by the provider supplying the Orthodontic Attachment.

Table 126: Salzmann Index Observation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
observation (identifier: urn:hl7ii:2.16.840.1.113883.10.20.39.3.21:2018-08-01)					
@nullFlavor	0..1	MAY		4376-714	
@classCode	1..1	SHALL		4376-711	urn:oid:2.16.840.1.113883.5.6 (HL7ActClass) = OBS
@moodCode	1..1	SHALL		4376-712	urn:oid:2.16.840.1.113883.5.1001 (HL7ActMood) = EVN
templateId	1..1	SHALL		4376-698	
@root	1..1	SHALL		4376-703	2.16.840.1.113883.10.20.39.3.21
@extension	1..1	SHALL		4376-704	2018-08-01
id	1..*	SHALL		4376-713	
code	1..1	SHALL		4376-699	
@code	1..1	SHALL		4376-705	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 90862-4
@codeSystem	1..1	SHALL		4376-706	urn:oid:2.16.840.1.113883.6.1 (LOINC) = 2.16.840.1.113883.6.1
statusCode	1..1	SHALL		4376-700	
@code	1..1	SHALL		4376-707	urn:oid:2.16.840.1.113883.5.14 (HL7ActStatus) = completed
value	1..1	SHALL	INT	4376-701	
@value	1..1	SHALL		4376-708	

370. **MAY** contain zero or one [0..1] @nullFlavor (CONF:4376-714).

371. **SHALL** contain exactly one [1..1] @classCode="OBS" (CodeSystem: HL7ActClass urn:oid:2.16.840.1.113883.5.6) (CONF:4376-711).

372. **SHALL** contain exactly one [1..1] @moodCode="EVN" (CodeSystem: HL7ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:4376-712).

373. **SHALL** contain exactly one [1..1] **templateId** (CONF:4376-698) such that it
 - a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.39.3.21" (CONF:4376-703).
 - b. **SHALL** contain exactly one [1..1] **@extension**="2018-08-01" (CONF:4376-704).
374. **SHALL** contain at least one [1..*] **id** (CONF:4376-713).
375. **SHALL** contain exactly one [1..1] **code** (CONF:4376-699) such that it
 - a. **SHALL** contain exactly one [1..1] **@code**="90862-4" Malocclusion index Teeth and gum Calculated (CodeSystem: LOINC urn:oid:2.16.840.1.113883.6.1) (CONF:4376-705).
 - 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:4376-706).
376. **SHALL** contain exactly one [1..1] **statusCode** (CONF:4376-700) such that it
 - a. **SHALL** contain exactly one [1..1] **@code**="completed" (CodeSystem: HL7ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:4376-707).
377. **SHALL** contain exactly one [1..1] **value** with **@xsi:type**="INT" (CONF:4376-701) such that it
 - a. **SHALL** contain exactly one [1..1] **@value** (CONF:4376-708).

Figure 68: Salzmann Index Observation Sample

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.39.3.21" extension="2018-08-01"
/>
  <id root="d9ce012c-c0f9-4153-a2e6-9c6b6a028fa9" />
  <code code="90862-4" codeSystem="2.16.840.1.113883.6.1" />
  <statusCode code="completed" />
  <value xsi:type="INT" value="34" />
</observation>
```


8 US REALM HEADER SUPPORTING TEMPLATES

8.1 Author Participation

```
[author: identifier urn:oid:2.16.840.1.113883.10.20.22.4.119  
(open) ]
```

Table 127: Author Participation Contexts

Contained By:	Contains:
Priority Preference (optional) Problem Observation (V3) (optional) Problem Concern Act (V3) (optional) Note Activity (required)	

This template represents the Author Participation (including the author timestamp). CDA R2 requires that Author and Author timestamp be asserted in the document header. From there, authorship propagates to contained sections and contained entries, unless explicitly overridden.

The Author Participation template was added to those templates in scope for analysis in R2. Although it is not explicitly stated in all templates the Author Participation template can be used in any template.

Table 128: Author Participation Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
author (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119)					
templateId	1..1	SHALL		1098-32017	
@root	1..1	SHALL		1098-32018	2.16.840.1.113883.10.20.22.4.119
time	1..1	SHALL		1098-31471	
assignedAuthor	1..1	SHALL		1098-31472	
id	1..*	SHALL		1098-31473	
code	0..1	SHOULD		1098-31671	urn:oid:2.16.840.1.114222.4.11.1066 (Healthcare Provider Taxonomy)
assignedPerson	0..1	MAY		1098-31474	
name	0..*	MAY		1098-31475	
representedOrganization	0..1	MAY		1098-31476	
id	0..*	MAY		1098-31478	
name	0..*	MAY		1098-31479	
telecom	0..*	MAY		1098-31480	
addr	0..*	MAY		1098-31481	

378. **SHALL** contain exactly one [1..1] **templateId** (CONF:1098-32017) such that it
- SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.119" (CONF:1098-32018).
379. **SHALL** contain exactly one [1..1] **time** (CONF:1098-31471).
380. **SHALL** contain exactly one [1..1] **assignedAuthor** (CONF:1098-31472).
- This assignedAuthor **SHALL** contain at least one [1..*] **id** (CONF:1098-31473).
 Note: This id may be set equal to (a pointer to) an id on a participant elsewhere in the document (header or entries) or a new author participant can be described here. If the id is pointing to a participant already described elsewhere in the document, assignedAuthor/id is sufficient to identify this participant and none of the remaining details of assignedAuthor are required to be set. Application Software

must be responsible for resolving the identifier back to its original object and then rendering the information in the correct place in the containing section's narrative text. This id must be a pointer to another author participant.

- i. If the ID isn't referencing an author described elsewhere in the document, then the author components required in US Realm Header are required here as well (CONF:1098-32628).
- b. This assignedAuthor **SHOULD** contain zero or one [0..1] **code**, which **SHOULD** be selected from ValueSet [Healthcare Provider Taxonomy](#) urn:oid:2.16.840.1.114222.4.11.1066 **DYNAMIC** (CONF:1098-31671).
 - i. If the content is patient authored the code **SHOULD** be selected from Personal And Legal Relationship Role Type (2.16.840.1.113883.11.20.12.1) (CONF:1098-32315).
- c. This assignedAuthor **MAY** contain zero or one [0..1] **assignedPerson** (CONF:1098-31474).
 - i. The assignedPerson, if present, **MAY** contain zero or more [0..*] **name** (CONF:1098-31475).
- d. This assignedAuthor **MAY** contain zero or one [0..1] **representedOrganization** (CONF:1098-31476).
 - i. The representedOrganization, if present, **MAY** contain zero or more [0..*] **id** (CONF:1098-31478).
 - ii. The representedOrganization, if present, **MAY** contain zero or more [0..*] **name** (CONF:1098-31479).
 - iii. The representedOrganization, if present, **MAY** contain zero or more [0..*] **telecom** (CONF:1098-31480).
 - iv. The representedOrganization, if present, **MAY** contain zero or more [0..*] **addr** (CONF:1098-31481).

Figure 69: New Author Participant Example

```
<author>
  <templateId root="2.16.840.1.113883.10.20.22.4.119" />
  <time value="201308011235-0800" />
  <assignedAuthor>
    <id root="20cf14fb-b65c-4c8c-a54d-b0cca834c18c" />
    <code code="163W00000X" codeSystem="2.16.840.1.113883.5.53"
codeSystemName="Health Care Provider Taxonomy" displayName="Registered nurse"
/>
    <assignedPerson>
      <name>
        <given>Nurse</given>
        <family>Nightingale</family>
        <suffix>RN</suffix>
      </name>
    </assignedPerson>
    <representedOrganization>
      <id root="2.16.840.1.113883.19.5" />
      <name>Good Health Hospital</name>
    </representedOrganization>
  </assignedAuthor>
</author>
```

Figure 70: Existing Author Reference Example

```
<author>
  <time value="201308011235-0800" />
  <assignedAuthor>
    <!--
      This id points to a participant already described
      elsewhere in the document
    -->
    <id root="20cf14fb-b65c-4c8c-a54d-b0cca834c18c" />
  </assignedAuthor>
</author>
```

8.2 US Realm Address (AD.US.FIELDDED)

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

Table 129: US Realm Address (AD.US.FIELDDED) Contexts

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

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

Table 130: US Realm Address (AD.US.FIELDDED) 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..4	SHALL		81-7291	

If addr/@nullFlavor is present, the remaining conformance statements *SHALL NOT* be enforced

381. **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).
382. **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).
383. **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. If the country is US, the state element is required but **SHOULD** have @nullFlavor if the state is unknown. 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).
384. **SHALL** contain exactly one [1..1] **city** (CONF:81-7292).
385. **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. If the country is US, the postalCode element is required but **SHOULD** have @nullFlavor if the postalCode is unknown. 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).
386. **SHALL** contain at least one and not more than 4 **streetAddressLine** (CONF:81-7291).
387. **SHALL NOT** have mixed content except for white space (CONF:81-7296).

Table 131: 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 132: 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
...			

Table 133: 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
...			

Figure 71: 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>

```

8.3 US Realm Date and Time (DT.US.FIELDED)

[effectiveTime: identifier urn:oid:2.16.840.1.113883.10.20.22.5.3
(open)]

Table 134: US Realm Date and Time (DT.US.FIELDED) Contexts

Contained By:	Contains:
Note Activity (optional)	

The US Realm Clinical Document Date and Time datatype flavor records date and time information. If no time zone offset is provided, you can make no assumption about time, unless you have made a local exchange agreement.
This data type uses the same rules as US Realm Date and Time (DTM.US.FIELDDED), but is used with elements having a datatype of IVL_TS.

Table 135: US Realm Date and Time (DT.US.FIELDDED) Constraints Overview

X P a t h	Card	Verb	Data Type	CONF #	Value
					effectiveTime (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.3)

- 388. **SHALL** be precise to the day (CONF:81-10078).
- 389. **SHOULD** be precise to the minute (CONF:81-10079).
- 390. **MAY** be precise to the second (CONF:81-10080).
- 391. If more precise than day, **SHOULD** include time-zone offset (CONF:81-10081).

8.4 US Realm Date and Time (DTM.US.FIELDDED)

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

Table 136: US Realm Date and Time (DTM.US.FIELDDED) Contexts

Contained By:	Contains:
US Realm Header (V3) (optional)	
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.FIELDDED), but is used with elements having a datatype of TS.

Table 137: US Realm Date and Time (DTM.US.FIELDDED) Constraints Overview

X P a t h	Card	Verb	Data Type	CONF #	Value
					effectiveTime (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.4)

- 392. **SHALL** be precise to the day (CONF:81-10127).
- 393. **SHOULD** be precise to the minute (CONF:81-10128).
- 394. **MAY** be precise to the second (CONF:81-10129).

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

Figure 72: 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>
```

8.5 US Realm Patient Name (PTN.US.FIELDDED)

[name: identifier urn:oid:2.16.840.1.113883.10.20.22.5.1 (open)]

Table 138: US Realm Patient Name (PTN.US.FIELDDED) Contexts

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

The US Realm Patient Name datatype flavor is a set of reusable constraints that can be used for the patient or any other person. It requires a first (given) and last (family) name. If a patient or person has only one name part (e.g., patient with first name only) place the name part in the field required by the organization. Use the appropriate nullFlavor, "Not Applicable" (NA), in the other field.

For information on mixed content see the Extensible Markup Language reference (<http://www.w3c.org/TR/2008/REC-xml-20081126/>).

Table 139: US Realm Patient Name (PTN.US.FIELDDED) Constraints Overview

XPath	Card.	Verb	Data Type	CONF#	Value
name (identifier: urn:oid:2.16.840.1.113883.10.20.22.5.1)					
@use	0..1	MAY		81-7154	urn:oid:2.16.840.1.113883.1.11.15913 (EntityNameUse)
family	1..1	SHALL		81-7159	
@qualifier	0..1	MAY		81-7160	urn:oid:2.16.840.1.113883.11.20.9.26 (EntityPersonNamePartQualifier)
given	1..*	SHALL		81-7157	
@qualifier	0..1	MAY		81-7158	urn:oid:2.16.840.1.113883.11.20.9.26 (EntityPersonNamePartQualifier)
prefix	0..*	MAY		81-7155	
@qualifier	0..1	MAY		81-7156	urn:oid:2.16.840.1.113883.11.20.9.26 (EntityPersonNamePartQualifier)
suffix	0..1	MAY		81-7161	
@qualifier	0..1	MAY		81-7162	urn:oid:2.16.840.1.113883.11.20.9.26 (EntityPersonNamePartQualifier)

If name/@nullFlavor is present, the remaining conformance statements *SHALL NOT* be enforced

396. **MAY** contain zero or one [0..1] @use, which **SHALL** be selected from ValueSet [EntityNameUse](#) urn:oid:2.16.840.1.113883.1.11.15913 **STATIC** 2005-05-01 (CONF:81-7154).
397. **SHALL** contain exactly one [1..1] family (CONF:81-7159).
 - a. This family **MAY** contain zero or one [0..1] @qualifier, which **SHALL** be selected from ValueSet [EntityPersonNamePartQualifier](#) urn:oid:2.16.840.1.113883.11.20.9.26 **STATIC** 2011-09-30 (CONF:81-7160).
398. **SHALL** contain at least one [1..*] given (CONF:81-7157).
 - a. Such givens **MAY** contain zero or one [0..1] @qualifier, which **SHALL** be selected from ValueSet [EntityPersonNamePartQualifier](#) urn:oid:2.16.840.1.113883.11.20.9.26 **STATIC** 2011-09-30 (CONF:81-7158).
 - b. The second occurrence of given (given[2]) if provided, **SHALL** include middle name or middle initial (CONF:81-7163).
399. **MAY** contain zero or more [0..*] prefix (CONF:81-7155).
 - a. The prefix, if present, **MAY** contain zero or one [0..1] @qualifier, which **SHALL** be selected from ValueSet

EntityPersonNamePartQualifier

urn:oid:2.16.840.1.113883.11.20.9.26 **STATIC** 2011-09-30
(CONF:81-7156).

400. **MAY** contain zero or one [0..1] **suffix** (CONF:81-7161).
- a. The suffix, if present, **MAY** contain zero or one [0..1] **@qualifier**, which **SHALL** be selected from ValueSet

EntityPersonNamePartQualifier

urn:oid:2.16.840.1.113883.11.20.9.26 **STATIC** 2011-09-30
(CONF:81-7162).

401. **SHALL NOT** have mixed content except for white space (CONF:81-7278).

Table 140: EntityNameUse

Value Set: EntityNameUse urn:oid:2.16.840.1.113883.1.11.15913			
Value Set Source: https://vsac.nlm.nih.gov/			
Code	Code System	Code System OID	Print Name
...			

Table 141: EntityPersonNamePartQualifier

Value Set: EntityPersonNamePartQualifier urn:oid:2.16.840.1.113883.11.20.9.26			
Value Set Source: https://vsac.nlm.nih.gov/			
Code	Code System	Code System OID	Print Name
...			

Figure 73: US Realm Patient Name Example

```
<name use="L">
  <prefix qualifier="TITLE">Rep</suffix>
  <given>Evelyn</given>
  <given qualifier="CL">Eve</given>
  <family qualifier="BR">Everywoman</family>
  <suffix qualifier="AC">J.D.</suffix>
</name>
```

8.6 US Realm Person Name (PN.US.FIELDDED)

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

Table 142: US Realm Person Name (PN.US.FIELDDED) Contexts

Contained By:	Contains:
US Realm Header (V3) (optional) Note Activity (optional)	

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

Table 143: US Realm Person Name (PN.US.FIELDDED) 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	

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

9 Template Ids in This Guide

Table 144: Template List

Template Title	Template Type	templateId
Orthodontic Claim Attachment Document	document	urn:hl7ii:2.16.840.1.113883.10.20.39.1.1:2018-08-01
US Realm Header (V3)	document	urn:hl7ii:2.16.840.1.113883.10.20.22.1.1:2015-08-01
Orthodontic Observations Section	section	urn:hl7ii:2.16.840.1.113883.10.20.39.2.1:2018-08-01
Orthodontic Salzmann Malocclusion Severity Assessment Section	section	urn:hl7ii:2.16.840.1.113883.10.20.39.2.2:2018-08-01
Problem Section (entries optional) (V3)	section	urn:hl7ii:2.16.840.1.113883.10.20.22.2.5:2015-08-01
Age Observation	entry	urn:oid:2.16.840.1.113883.10.20.2.4.31
Airway Problems Impacting Orthodontic Treatment Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.32:2018-08-01
Craniofacial Anomaly Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.11:2018-08-01
Dental Abnormality Impacting Orthodontic Treatment Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.12:2018-08-01
Dental Closed-Spaced Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.26:2018-08-01
Dental Crossbite Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.29:2018-08-01
Dental Crowded Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.23:2018-08-01
Dental Crowding Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.19:2018-08-01
Dental Missing Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.22:2018-08-01
Dental Openbite Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.17:2018-08-01
Dental Openbite Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.30:2018-08-01
Dental Open-Spaced Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.25:2018-08-01
Dental Overbite Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.16:2018-08-01
Dental Overbite Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.28:2018-08-01
Dental Overjet Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.15:2018-08-01
Dental Overjet Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.27:2018-08-01
Dental Posterior Inter-Arch	entry	urn:hl7ii:2.16.840.1.113883.10.20.

Template Title	Template Type	templateId
Deviation Observation		39.3.31:2018-08-01
Dental Rotated Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.24:2018-08-01
Dental Spacing Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.18:2018-08-01
Dentition Stage Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.14:2018-08-01
Health Status Observation (V2)	entry	urn:hl7ii:2.16.840.1.113883.10.20.22.4.5:2014-06-09
Labiolingual Deviation Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.20:2018-08-01
Note Activity	entry	urn:hl7ii:2.16.840.1.113883.10.20.22.4.202:2016-11-01
Orthodontic Asymmetry of Lower Face Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.5:2018-08-01
Orthodontic Benefits Requested Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.13:2018-08-01
Orthodontic Condylar Abnormality Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.6:2018-08-01
Orthodontic Diagnostic Feature Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.10:2018-08-01
Orthodontic Habits Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.3:2018-08-01
Orthodontic Precondition Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.9:2018-08-01
Orthodontic Severe Traumatic Deviations Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.4:2018-08-01
Orthognathic Surgery Possibility Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.8:2018-08-01
Priority Preference	entry	urn:oid:2.16.840.1.113883.10.20.22.4.143
Problem Concern Act (V3)	entry	urn:hl7ii:2.16.840.1.113883.10.20.22.4.3:2015-08-01
Problem Observation (V3)	entry	urn:hl7ii:2.16.840.1.113883.10.20.22.4.4:2015-08-01
Problem Status	entry	urn:hl7ii:2.16.840.1.113883.10.20.22.4.6:2019-06-20
Prognosis Observation	entry	urn:oid:2.16.840.1.113883.10.20.22.4.113
Salzmann Index Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.21:2018-08-01
Author Participation	unspecified	urn:oid:2.16.840.1.113883.10.20.22.4.119
US Realm Address (AD.US.FIELDDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.22.5.2
US Realm Date and Time (DT.US.FIELDDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.22.5.3

Template Title	Template Type	templateId
US Realm Date and Time (DTM.US.FIELDDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.2.5.4
US Realm Patient Name (PTN.US.FIELDDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.2.5.1
US Realm Person Name (PN.US.FIELDDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.2.5.1.1

Table 145: Template Containments

Template Title	Template Type	templateId
Orthodontic Claim Attachment Document	document	urn:hl7ii:2.16.840.1.113883.10.20.39.1.1:2018-08-01
Problem Section (entries optional) (V3)	section	urn:hl7ii:2.16.840.1.113883.10.20.22.2.5:2015-08-01
Health Status Observation (V2)	entry	urn:hl7ii:2.16.840.1.113883.10.20.22.4.5:2014-06-09
Problem Concern Act (V3)	entry	urn:hl7ii:2.16.840.1.113883.10.20.22.4.3:2015-08-01
Priority Preference	entry	urn:oid:2.16.840.1.113883.10.20.2.4.143
Author Participation	unspecified	urn:oid:2.16.840.1.113883.10.20.2.4.119
Author Participation	unspecified	urn:oid:2.16.840.1.113883.10.20.2.4.119
Problem Observation (V3)	entry	urn:hl7ii:2.16.840.1.113883.10.20.22.4.4:2015-08-01
Age Observation	entry	urn:oid:2.16.840.1.113883.10.20.2.4.31
Prognosis Observation	entry	urn:oid:2.16.840.1.113883.10.20.2.4.113
Priority Preference	entry	urn:oid:2.16.840.1.113883.10.20.2.4.143
Author Participation	unspecified	urn:oid:2.16.840.1.113883.10.20.2.4.119
Author Participation	unspecified	urn:oid:2.16.840.1.113883.10.20.2.4.119
Problem Status	entry	urn:hl7ii:2.16.840.1.113883.10.20.22.4.6:2019-06-20
Orthodontic Observations Section	section	urn:hl7ii:2.16.840.1.113883.10.20.39.2.1:2018-08-01
Note Activity	entry	urn:hl7ii:2.16.840.1.113883.10.20.22.4.202:2016-11-01
US Realm Person Name (PN.US.FIELDDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.2.5.1.1
Author Participation	unspecified	urn:oid:2.16.840.1.113883.10.20.2.4.119

Template Title	Template Type	templateId
US Realm Date and Time (DT.US.FIELDDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.2.5.3
Orthodontic Habits Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.3:2018-08-01
Orthodontic Severe Traumatic Deviations Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.4:2018-08-01
Orthodontic Asymmetry of Lower Face Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.5:2018-08-01
Orthodontic Condylar Abnormality Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.6:2018-08-01
Craniofacial Anomaly Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.11:2018-08-01
Orthognathic Surgery Possibility Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.8:2018-08-01
Orthodontic Precondition Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.9:2018-08-01
Dental Abnormality Impacting Orthodontic Treatment Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.12:2018-08-01
Orthodontic Diagnostic Feature Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.10:2018-08-01
Dentition Stage Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.14:2018-08-01
Airway Problems Impacting Orthodontic Treatment Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.32:2018-08-01
Orthodontic Benefits Requested Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.13:2018-08-01
Dental Overjet Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.15:2018-08-01
Dental Overbite Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.16:2018-08-01
Dental Openbite Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.17:2018-08-01
Dental Spacing Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.18:2018-08-01
Dental Crowding Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.19:2018-08-01
Labiolingual Deviation Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.20:2018-08-01
Orthodontic Salzmann Malocclusion Severity Assessment Section	section	urn:hl7ii:2.16.840.1.113883.10.20.39.2.2:2018-08-01
Salzmann Index Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.21:2018-08-01
Dental Missing Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.22:2018-08-01

Template Title	Template Type	templateId
Dental Crowded Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.23:2018-08-01
Dental Rotated Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.24:2018-08-01
Dental Open-Spaced Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.25:2018-08-01
Dental Closed-Spaced Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.26:2018-08-01
Dental Overjet Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.27:2018-08-01
Dental Overbite Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.28:2018-08-01
Dental Crossbite Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.29:2018-08-01
Dental Openbite Teeth Count Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.30:2018-08-01
Dental Posterior Inter-Arch Deviation Observation	entry	urn:hl7ii:2.16.840.1.113883.10.20.39.3.31:2018-08-01
US Realm Header (V3)	document	urn:hl7ii:2.16.840.1.113883.10.20.22.1.1:2015-08-01
US Realm Patient Name (PTN.US.FIELDDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.2.5.1
US Realm Address (AD.US.FIELDDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.2.5.2
US Realm Address (AD.US.FIELDDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.2.5.2
US Realm Person Name (PN.US.FIELDDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.2.5.1.1
US Realm Date and Time (DTM.US.FIELDDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.2.5.4
US Realm Date and Time (DTM.US.FIELDDED)	unspecified	urn:oid:2.16.840.1.113883.10.20.2.5.4

10 Value Sets In This Guide

Table 146: Value Sets

Name	OID	URL
Administrative Gender (HL7 V3)	urn:oid:2.16.840.1.113883.1.11.1	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.1/expansion
AgePQ_UCUM	urn:oid:2.16.840.1.113883.11.20.9.21	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.11.20.9.21/expansion
Care Team Member Function	urn:oid:2.16.840.1.113762.1.4.109.30	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113762.1.4.109.30/expansion
Country	urn:oid:2.16.840.1.113883.3.88.12.80.63	https://www.iso.org/obp/ui/#iso:pub:PUB500001:en
Craniofacial Anomaly	urn:oid:2.16.840.1.113883.1.11.20.565	N/A
Dental Abnormality Impacting Orthodontic Treatment	urn:oid:2.16.840.1.113883.1.11.20.566	N/A
Dental Posterior Inter-Arch Deviation Type	urn:oid:2.16.840.1.113883.1.11.20.571	N/A
Dental Universal Numbering System	urn:oid:2.16.840.1.113883.1.11.20.556	N/A
Dentition State	urn:oid:2.16.840.1.113883.1.11.20.567	N/A
Detailed Ethnicity	urn:oid:2.16.840.1.114222.4.11.877	https://vsac.nlm.nih.gov/valueset/2.16.840.1.114222.4.11.877/expansion
EntityNameUse	urn:oid:2.16.840.1.113883.1.11.15.913	https://vsac.nlm.nih.gov/
EntityPersonNamePartQualifier	urn:oid:2.16.840.1.113883.11.20.9.26	https://vsac.nlm.nih.gov/
Ethnicity	urn:oid:2.16.840.1.114222.4.11.837	https://vsac.nlm.nih.gov/valueset/2.16.840.1.114222.4.11.837/expansion
Healthcare Provider Taxonomy	urn:oid:2.16.840.1.114222.4.11.10.66	https://vsac.nlm.nih.gov/valueset/2.16.840.1.114222.4.11.10.66/expansion
HealthStatus	urn:oid:2.16.840.1.113883.1.11.20.12	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.20.12/expansion
HL7 BasicConfidentialityKind	urn:oid:2.16.840.1.113883.1.11.16.926	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.16.926/expansion
INDRoleclassCodes	urn:oid:2.16.840.1.113883.11.20.9.33	https://vsac.nlm.nih.gov/
Jaw Type	urn:oid:2.16.840.1.113883.1.11.20.568	N/A
Language	urn:oid:2.16.840.1.113883.1.11.11	http://www.loc.gov/standards/iso

Name	OID	URL
	526	639-2 /php/code_list.php
LanguageAbilityMode	urn:oid:2.16.840.1.113883.1.11.12249	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.12249/expansion
LanguageAbilityProficiency	urn:oid:2.16.840.1.113883.1.11.12199	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.12199/expansion
Marital Status	urn:oid:2.16.840.1.113883.1.11.12212	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.12212/expansion
Note Types	urn:oid:2.16.840.1.113883.11.20.9.68	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.11.20.9.68/expansion
Oral Cavity Area	urn:oid:2.16.840.1.113883.1.11.20569	N/A
Orthodontic Diagnostic Feature	urn:oid:2.16.840.1.113883.1.11.20564	N/A
Orthodontic Treatment	urn:oid:1.3.6.1.4.1.12009.10.1.2916	https://r.details.loinc.org/AnswerList/LL439-1.html
Orthodontic Treatment Precondition	urn:oid:2.16.840.1.113883.1.11.20563	N/A
Personal And Legal Relationship Role Type	urn:oid:2.16.840.1.113883.11.20.12.1	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.11.20.12.1/expansion
PostalAddressUse	urn:oid:2.16.840.1.113883.1.11.10637	https://vsac.nlm.nih.gov/
PostalCode	urn:oid:2.16.840.1.113883.3.88.12.80.2	http://ushik.ahrq.gov/ViewItemDetails?system=mdr&itemKey=86671000
Priority Level	urn:oid:2.16.840.1.113883.11.20.9.60	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.11.20.9.60/expansion
Problem	urn:oid:2.16.840.1.113883.3.88.12.3221.7.4	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.3.88.12.3221.7.4/expansion
Problem Status	urn:oid:2.16.840.1.113883.3.88.12.80.68	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.3.88.12.80.68/expansion
Problem Type (LOINC)	urn:hl7ii:2.16.840.1.113883.3.88.12.3221.7.2:2014-09-02	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.3.88.12.3221.7.2/expansion
Problem Type (SNOMEDCT)	urn:oid:2.16.840.1.113883.3.88.12.3221.7.2	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.3.88.12.3221.7.2/expansion
ProblemAct statusCode	urn:oid:2.16.840.1.113883.11.20.9.19	http://www.hl7.org/documentcenter/public/standards/vocabulary/vocabulary_tables/infrastructure/vocabulary/vocabulary.html
Race Category Excluding Nulls	urn:oid:2.16.840.1.113883.3.2074.	https://vsac.nlm.nih.gov/valueset

Name	OID	URL
	1.1.3	/2.16.840.1.113883.3.2074.1.1.3/expansion
Race Value Set	urn:oid:2.16.840.1.113883.1.11.14914	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.14914/expansion
Religious Affiliation	urn:oid:2.16.840.1.113883.1.11.19185	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.1.11.19185/expansion
Salzmann Index Inter-Arch Deviation Maxillary Tooth	urn:oid:2.16.840.1.113883.1.11.20572	N/A
StateValueSet	urn:oid:2.16.840.1.113883.3.88.12.80.1	http://www.census.gov/geo/reference/ansi_statetables.html
SupportedFileFormats	urn:oid:2.16.840.1.113883.11.20.7.1	https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.11.20.7.1/expansion
Telecom Use (US Realm Header)	urn:oid:2.16.840.1.113883.11.20.9.20	https://vsac.nlm.nih.gov/
x_ServiceEventPerformer	urn:oid:2.16.840.1.113883.1.11.19601	http://www.hl7.org/documentcenter/public/standards/vocabulary/vocabulary_tables/infrastructure/vocabulary/vocabulary.html

11 Code Systems in This Guide

Table 147: Code Systems

Name	OID
Administrative Gender	urn:oid:2.16.840.1.113883.5.1
CDC Vaccine Code (CVX)	urn:oid:2.16.840.1.113883.12.292
CDT	urn:oid:2.16.840.1.113883.6.13
CPT4	urn:oid:2.16.840.1.113883.6.12
DCM	urn:oid:1.2.840.10008.2.16.4
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
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HL7ActMood	urn:oid:2.16.840.1.113883.5.1001
HL7ActPriority	urn:oid:2.16.840.1.113883.5.7
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HL7ActStatus	urn:oid:2.16.840.1.113883.5.14
HL7AddressUse	urn:oid:2.16.840.1.113883.5.1119
HL7Confidentiality	urn:oid:2.16.840.1.113883.5.25
HL7EntityClass	urn:oid:2.16.840.1.113883.5.41
HL7EntityNamePartQualifier	urn:oid:2.16.840.1.113883.5.43
HL7EntityNameUse	urn:oid:2.16.840.1.113883.5.45
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
HL7ObservationValue	urn:oid:2.16.840.1.113883.5.1063
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
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
HSLOC	urn:oid:2.16.840.1.113883.6.259
ICD-10-CM	urn:oid:2.16.840.1.113883.6.90
Insurance Type Code	urn:oid:2.16.840.1.113883.3.88.12.3221.5.2
ISO 3166 Part 1 Country Codes, 2nd Edition, Alpha-2	urn:oid:1.0.3166.1.2.2
Language	urn:oid:2.16.840.1.113883.6.121
LOINC	urn:oid:2.16.840.1.113883.6.1
Media Type	urn:oid:2.16.840.1.113883.5.79
NCI Thesaurus (NCIt)	urn:oid:2.16.840.1.113883.3.26.1.1
NDFRT	urn:oid:2.16.840.1.113883.3.26.1.5
NUBC UB-04 Patient Discharge Status code set	urn:oid:2.16.840.1.113883.6.301.5
ObservationInterpretation	urn:oid:2.16.840.1.113883.5.83
Provider Role (HL7)	urn:oid:2.16.840.1.113883.3.88.12.3221.4
Race & Ethnicity - CDC	urn:oid:2.16.840.1.113883.6.238
RxNorm	urn:oid:2.16.840.1.113883.6.88
SNODENT	urn:oid:2.16.840.1.113883.3.3150
SNOMED CT	urn:oid:2.16.840.1.113883.6.96

Name	OID
Source of Payment Typology (PHDSC)	urn:oid:2.16.840.1.113883.3.221.5
UCUM	urn:oid:1.3.6.1.4.1.12009.10.3.1
UCUM	urn:oid:2.16.840.1.113883.6.8
USPostalCodes	urn:oid:2.16.840.1.113883.6.231