Alberta Health Services & Alberta Health

Alberta Clinical Document Specification

Consolidated CDA Implementation Guide

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Questions about this Document should be addressed to:

Chief Information Officer, Alberta Health
10025 Jasper Avenue
Edmonton, Alberta T5J1S6

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AUTHORITIES

See separate approval sheet.

EDITORS

- Helen Stevens, Gordon Point Informatics (helen.stevens@gpinformatics.com)
- Marc Koehn, Gordon Point Informatics (marc.koehn@gpinformatics.com)

AUTHORS

- Helen Stevens, Gordon Point Informatics (helen.stevens@gpinformatics.com)
- Iryna Roy, Gordon Point Informatics (iryna.roy@gpinformatics.com)
- Joginder Madra, Gordon Point Informatics (joginder.madra@gpinformatics.com)
- Louise Brown, Global Village Consulting (lbrown@global-village.net)

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Participants (for Laboratory Reporting)	
• Bogdan Motoc • BoonYee Chang • Douglas Courtney • George Rudelich • Harsh Sharma • Hemming Yang • Jennifer Garcia • Ken Ridgeway • Michael Szeto	• Raechel Wright • Randy Nonay • Rosa Nash • Sandra Dartana • Sharilyn Kmech • Sherry Nicholaichuk • Tracy Williams • Warren Kufuor-Boakye
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Table of Contents

List of Figures

List of Tables

1.0 INTRODUCTION

1.1 PURPOSE

The Consolidated CDA Implementation Guide currently encompassing two primary specifications, namely, the Alberta eReferral Data and Messaging Specification (AEDAMS) specification and the Alberta Laboratory Report Clinical Document Specification.

The Alberta eReferral Data and Messaging Specification (AEDAMS) specifications are intended to support the distributed initiation and management of electronic referrals between and among disparate electronic medical record (EMR) systems and a centralized Referral Management Service in support of Path to Care (formerlly known as closed loop) eReferral in Alberta.

The Laboratory Report is a clinical document used to convey detailed laboratory results for a variety of laboratory disciplines including General Laboratory, Blood Bank, Microbiology and Anatomical Pathology.

The purpose of this Implementation Guide document is to provide formal, implementable specifications for a clinical attachment based on the HL7 Clinical Document Architecture (CDA) [1] that may be included within electronic messages pertaining to eReferral (in the case of AEDAMS) or Laboratory reporting.

1.2 CONSOLIDATED CDA SPECIFICATION

This guide has been structured as a consolidated CDA specification into which additional templates can be added over time.

Specifically this guide contains a portfolio of interrelated, reusable CDA templates to describe documents using a common set of information primitives. These primitives are also represented as CDA templates and are arranged into Section, Section Entry and Entry groups. Through use of these common templates it is possible to establish highly consistent and reusable document specifications that are intended to minimize implementation effort and encourage adoption.

1.3 AUDIENCE

This audience includes technical and business readers who will use the guide to develop implementations and validate that these implementations conform to the Specifications and to the requirements of the associated stakeholder organizations.

Readers are expected to be familiar with the **AEDAMS Business Overview** document if using the AEDAMS templates and with the **Lab Report Business Overview** document if using the Laboratory Report template.

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

1.4 SPECIFICATION STRUCTURE

These specifications have been layered into multiple documents and technical artifacts which, together, provide implementation direction and establish conformance requirements.

1.4.1 AEDAMS

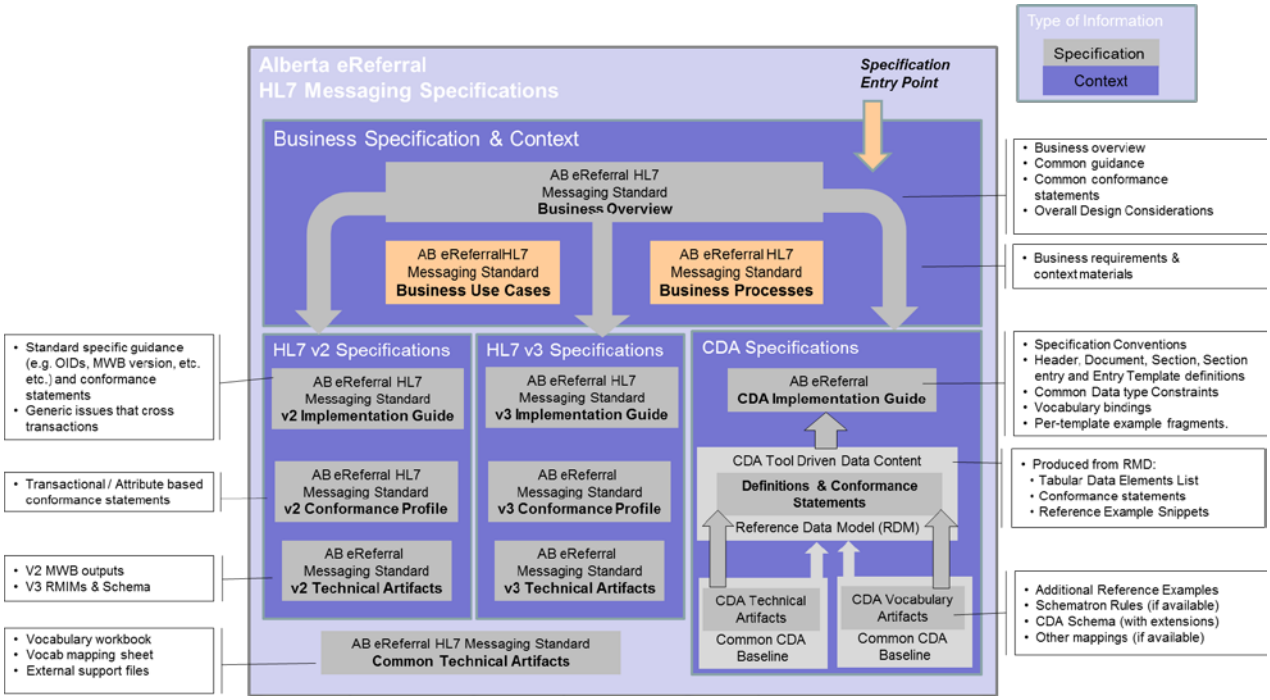


Figure 1: AEDAMS Specification Structure

These documents have been structured to minimize duplication and to streamline access to information for prospective implementers. Moreover, recognizing that certain implementers will likely need to support v2.x, v3 and CDA based interoperability, these specification documents aim to offer an integrated view for all three specifications.

1.4.2 Laboratory Report

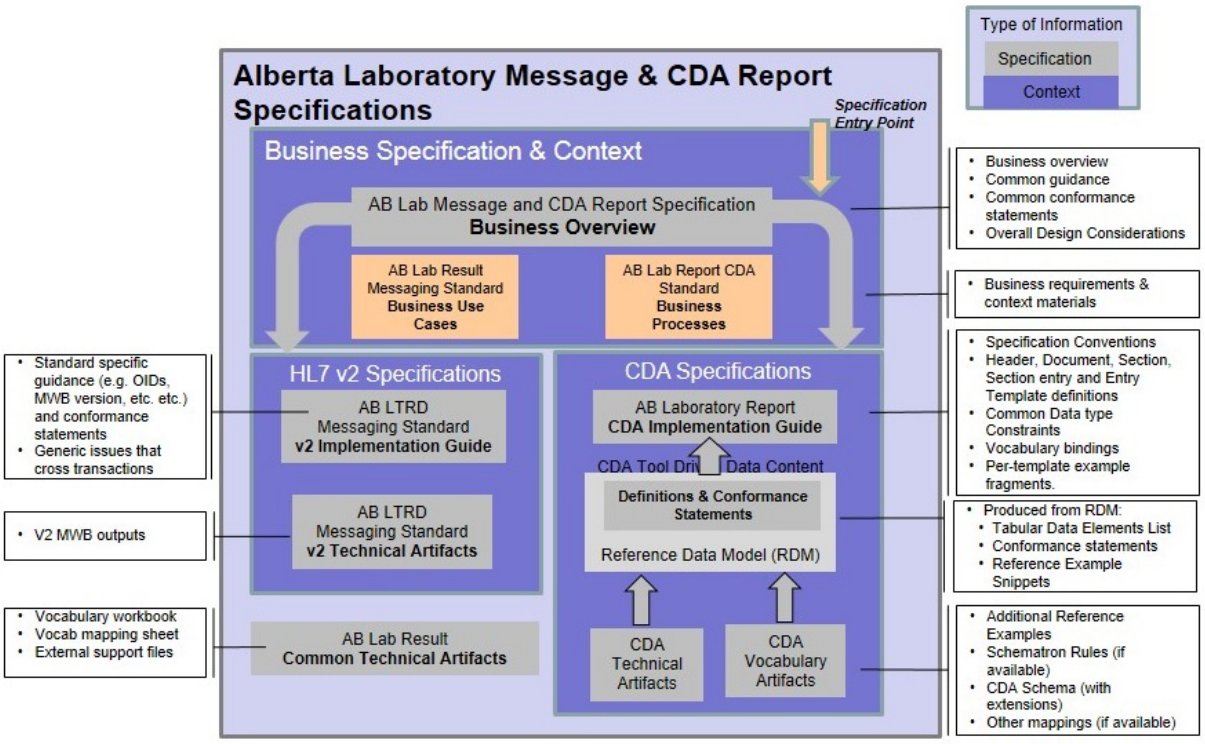


Figure 2 - Lab Report Structure 1

Readers are advised to start their review with the ***AEDAMS Business Overview*** document (as well as the companion ***AEDAMS Business Use Cases*** and ***AEDAMS Business Process Flow*** documents) and ***Laboratory Report Business Overview*** documents. Each of these specification sets has been stratified and it is recommended that readers approach these layers in order as follows:

- ***V2 and v3 Implementation Guide:*** Each guide is intended to provide clear direction to implementers about the in-scope interoperability transactions and provides both guidance and normative direction about how to implement the specifications.
- ***CDA Implementation Guide:*** This document is intended to provide the technical information required to implement the specification. It includes an outline of the specification conventions and overall technical requirements. The implementation guide then includes the detailed requirements for the in-scope documents, all of the document sections, and templates that are used to build the specifications. The implementation guide consists of both tabular as well as conformance-statement oriented views of the requirements and includes the testable conformance statements for the specification which conformant systems are expected to support as well as specific business rules and data obligations. Where applicable the formal CDA conformance statements are incorporated or referenced.
- ***v2 and v3 Conformance Profile***: Each **Conformance Profile** document outlines the in-scope transactions which conformant systems are expected to support as well as specific business rules and data obligations for each transaction. Where applicable a formal conformance profile (e.g. HL7 Message Profile) is referenced.
- ***Technical Artifacts***. Each specification includes appropriate technical artifacts. For further information please consult Appendix A of the ***Business Overview*** document.
  - HL7 v2.x: Applicable HL7 Message Workbench files.

- For v3 and CDA: Normative Model Interchange Format (MIF) files, non-normative eXtensible Markup Language (XML) Schema files (.XSD) files.

Although this implementation guide , through the Vocabulary chapter, provides definitive conformance requirements for vocabulary value set and code system bindings, these specifications may include a ***Vocabulary Workbook***. If present, this workbook is solely intended to consolidate valid vocabulary codes in a convenient, machine processable manner[2].

1.5 SCOPE

The scope of these specifications is constrained both in terms of the target use cases that are intended to be supported, as well as the set of specific data categories to be incorporated in structured form. Since this guide may ultimately include a variety of document templates, readers should check the scope and use case documentation within each document template section as well as any Business Overview, Use Cases and Process Flow documents.

A clinical document is a defined as a complete information object that can include text, images, sounds, and other multimedia content. The HL7 Clinical Document Architecture (CDA) defines a clinical document as a documentation of clinical observations and services, with the following characteristics:

- ***Persistence*** – A clinical document continues to exist in an unaltered state, for a time period defined by local and regulatory requirements (NOTE: There is a distinct scope of persistence for a clinical document, independent of the persistence of any XML-encoded CDA document instance).
- ***Stewardship*** – A clinical document is maintained by an organization entrusted with its care.
- ***Potential for authentication*** – A clinical document is an assemblage of information that is intended to be legally authenticated.
- ***Context*** – A clinical document establishes the default context for its contents.
- ***Wholeness*** – Authentication of a clinical document applies to the whole and does not apply to portions of the document without the full context of the document.
- ***Human readability*** – A clinical document is human readable.

1.5.1 Out of Scope

The following statements outline the constraints that are outside the scope of this CDA Implementation Guide:

- It is important to note that specifications of this type do establish functional demands on EMR systems to the extent that these systems may need to structure data or be able to reliably transform data in a certain way to enable compliance when sending or receiving information based on the

[2] If published separately, the vocabulary lists are distributed either as an independent workbook or as part of a data definition workbook; implementers are asked to check the release notes for the publication to locate this artefact.

specification. However, other than this necessary and desirable side-effect, these specifications are not intended to establish conformance requirements pertaining to EMR functionality.

- Alberta Netcare is a secure, private and lifetime record of the electronically available portion of an individual's health history, progressing, eventually, into a comprehensive health record as the role of paper diminishes across the health system. Authorized health-care providers can access Netcare to see a consolidated view of a client's health information when and where it is needed, improving the access, safety and quality of care. The documents in this specification may include data that is also available in Netcare; conversely, Netcare may contain instances of documents that conform to this specification. Beyond this, no further interoperability or data precedence rules are identified or defined.

1.6 PREREQUISITES

These specifications are based on, and constrain as well as extend, the HL7 Clinical Document Architecture (CDA) Release 2 (R2) Standard. Although the specifications aim to provide sufficient detail for implementers to build conformant solutions, readers are nevertheless assumed to have basic familiarity with CDA, the HL7 Reference Information Model (RIM) and HL7 data types.

Further information on these health information standards and specification building blocks is available to HL7 International or affiliate members at www.hl7.org. In Canada, the affiliate is established under the auspices of the *Infoway* Standards Collaborative (https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards).

1.7 CAVEATS AND ASSUMPTIONS

All examples are to be considered non–normative. If inconsistencies exist between the specification and the examples, the specification supersedes the examples.

1.8 PROJECT BACKGROUND

Refer to project specific ***Business Overview*** documents for details regarding the project background, stakeholders and business assumptions.

1.9 ORGANIZATION OF THIS GUIDE

This guide includes a portfolio of CDA Templates, and prescribes their use for a set of specific document types. The main chapters are:

- ***Business Context:*** This chapter establishes the business context into which these specifications are designed to be implemented.
- ***Specification Conventions***. This chapter establishes and describes the conventions (e.g. special notations and display formats) used in these specifications.

- ***Header Templates***: This chapter outlines both the Shared Health Record template as well as any specific templates derived from the Shared Health Record template.
- ***Document Level Templates***. This chapter defines each of the supported document types. It defines header constraints specific to each type as well as the Section templates established for each.
- ***Section Level Templates***. This chapter defines the sections referenced from the Document templates. Each section will include reference to one or more Section templates with alternate requirements for the structure and coding level within the section. Section templates are independent specification units that can be reused by future document specifications. Section templates that do not support machine processable structured entries will not reference a Section Entry template.

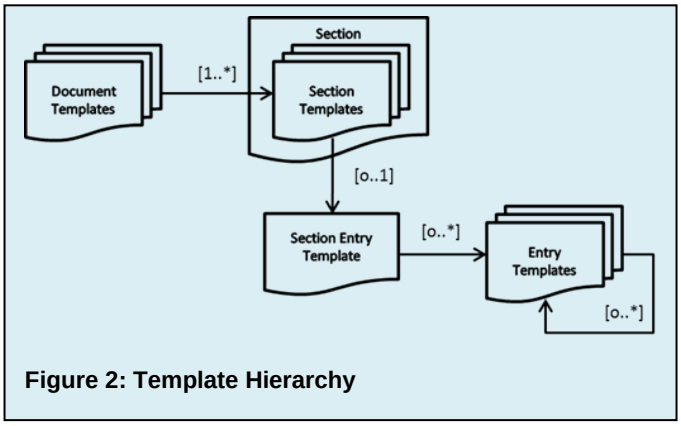


Figure 2: Template Hierarchy

- ***Section Entry Level Templates***. This chapter defines the Section Entry templates referenced by the Section templates. Each Section Entry template defines the entry level requirements for a machine processable structured section and may reference one or more Entry templates for specific data structures. All Section Entry templates start with the `Section/Entry` CDA Schema XPath and are referenced from a Section template.
- ***Entry Level Templates***. This chapter defines the Entry templates referenced by the Section Entry templates. Each Entry template defines a specific clinical statement that is a re-usable machine processable structure.
- ***Data Types***. This chapter outlines data type conformance expectations and other implementation considerations pertaining to these specifications.
- ***Vocabulary***. This chapter outlines vocabulary conformance expectations and other implementation considerations pertaining to these specifications.
- ***Identifiers***. This chapter provides details about the use of identifiers within these specifications.

This guide also contains several appendices which include non-normative content to support implementers.

1.10 CONFORMANCE

This standard has been designed to enable customers to seek and vendors to claim conformance to one or more of the component document specifications. Any document specification in this guide establishes a specific set of conformance requirements either implicitly through reference to the HL7 standard or

explicitly through this Implementation Guide and associated technical artifacts. Refer to Chapter 2 – Specification Conventions for further information on how conformance requirements are documented and how these should be interpreted in the specification.

1.11 CDA TOOLING

This guide was generated using the Gordon Point Informatics Ltd. (GPi) CDA tool. This tool ensures that template and constraint definitions are formally and consistently linked to the underlying CDA data structures; that vocabulary bindings are correct and formally linked to any underlying code systems and value sets; and that examples are inventoried explicitly against their respective constraint or template object. Moreover, the tool generates all cross linkages and formats in this guide while bringing in common background content.

It is important to note that this resulting guide is non-proprietary and fully editable; it is not dependent on use of the tool in any way.

However, continued use of the tool to generate iterations would allow automated consistency in cross-linking future templates and consistent constraint enumeration as well as offer other useful features exhiited of this guide.

1.12 GREENCDA

HL7 is currently exploring mechanisms to simplify its Implementation Technology Specifications (ITS). One of these initiatives is the **greenCDA** project[3] which is working to develop a pragmatic methodology for creating simplified CDA schemas that can be transformed directly to or from normative CDA. At this time these specifications have not taken a position on greenCDA and, consequently, no greenCDA schema sets are included.

[3] http://wiki.hl7.org/index.php?title=GreenCDA_Project

2.0 SPECIFICATION CONVENTIONS

2.1 OVERVIEW

This chapter summarizes the key specification conventions in this implementation guide. It should be reviewed prior to reading the rest of the guide. Readers familiar with the ***HL7 Implementation Guide for CDA® Release 2: IHE Health Story Consolidation, Release 1 - US Realm guide*** published by the HL7 Structured Document group in collaboration with the HL7/IHE Health Story Consolidation Project[4] will find a significant degree of overlap in the conventions followed by both guides. Moreover, this guide has repurposed substantial content from the HL7/IHE guide.

2.2 CONFORMANCE VERBS (KEYWORDS)

These specifications make intentional use of the formal keywords **SHALL, SHALL NOT, SHOULD**, **SHOULD NOT, MAY** and **NEED NOT** which are to be interpreted as described in the HL7 Version 3 Publishing Facilitator's Guide (http://www.hl7.org/v3ballot/html/help/pfg/pfg.htm[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; and
- **MAY / NEED NOT**: truly optional; can be included or omitted as the author decides with no implications.

The subject of a conformance verb (keyword) in a top-level constraint is the template itself. In nested constraints, the subject is the element in the containing constraint.

Conformance verbs may also be applied to other content in this guide that is intended to be normative. Solutions claiming conformance with these specifications are required to adhere to the requirements so identified.

2.3 CDA DOCUMENT SECTIONS

An HL7 Clinical Document Architecture (CDA) document is comprised of two parts, a header and a body. The CDA document header identifies and classifies the document and provides information on authentication, the encounter, the patient, and the involved providers etc. It is consistent in structure across all CDA documents regardless of document type; however, different documents will support, or require, different components of the document header.

[4] http://www.healthstory.com/standards/sec/consolidate.htm
[5] Please note that notwithstanding periodic review of HL7's intellectual property policies, access to certain HL7 materials may require registration and/or payment of membership/subscription fees.

The document body contains the clinical content, and can be a combination of unstructured content, structured text and/or structured markup. Additional information on the CDA document section model may be obtained from the HL7 [6].

2.3.1 CDA Document Levels

The CDA standard describes conformance requirements in terms of three general levels corresponding to three different, incremental types of conformance statements:

- ***Document Header Level (CDA Level 1)***: This includes all the meta-data regarding the document such as the document creation date/time; patient information, author, intended recipient etc. The Document Header is based on discrete data elements, supported by appropriate coding and vocabulary data sets. Any clinical observations or body content of a Level 1 document is a single part and may be XML or an alternate allowed format (*e.g*. PDF). If XML, it must be CDA-conformant markup.

  Level 1 requirements impose constraints upon the CDA Header[7].

- ***Document Section Level (CDA Level 2 or CDA-L2)***: This type of document includes distinct body sections for each type of clinical information such as medications, observations, alerts *etc*. Within each section the content is represented as a single human-readable 'text' block or as an attachment (*e.g*. PDF document, image, *etc.*).

  Level 2 requirements specify constraints at the section level of a CDA XML document: most critically, the section code and the cardinality of the sections themselves, whether optional or required.

- ***Document Section Discrete Data (CDA Level 3 or CDA-L3)***: As for a Level 2 document, this type of clinical document includes distinct body sections for each type of clinical information; however, in addition to the human readable 'text' representation, the content of the section is also **duplicated** through inclusion of discrete data elements. Each data element will have an associated data type (address, code, identifier *etc.*) associated with it and where appropriate it will be coded using standards-based terminologies.

  Level 3 requirements specify constraints at the entry level within a section. A specification is considered "Level 3" if it requires any entry-level templates.

Note that these levels are rough indications of what a recipient can expect in terms of machine-processable coding and content reuse. They do not reflect the level or type of clinical content, and many additional levels of reusability could be defined.

In all cases, required clinical content must be present. For example, a CDA Procedure Note carrying the `templateId` that asserts conformance with Level 1 may use a PDF (portable document format) or HTML

[6] http://www.hl7.org/implement/standards/product_brief.cfm?product_id=7
[7] Within the CDA R2 Standard, Level 1 is identified as an unconstrained CDA specification. However, in practice level 1 is generally used to denote a document with a constrained header and an unstructured body.

(hypertext markup language) format for the body of the document that contains the required clinical content. Conformance, in this case, to the clinical content requirements could not be validated without human review.

The Document templates for each document type list the required and optional sections.

Each section of a CDA document can be either in the form of just free text or can also be defined to have discrete data elements in addition to the free text representation.

2.4 TEMPLATES

This implementation guide is constructed using a template based model. Templates, in the HL7 context, are a formal framework to document and re-use specific sets of constraints on an information model. CDA supports the broad intent of the HL7 templates framework in order to support two objectives:

- First, templates allow specification designers to segment the specification into components that can be published and maintained as distinct entities.
- Second, templates can be combined and reused to meet specific use cases and requirements.

Templates allow a concept (such as a *reaction observation* or *prescription*) to be defined once and then used wherever that concept needs to be applied within the specification. By referencing templates and combining them to meet the business requirements, specifications can be built that are both rich in flexibility and function; but also optimized to improve consistency of implementation and increased ease of maintenance.

There are two flavors of templates; those that constrain the document sections based on the type of document and those that constrain the entries within document sections.

2.4.1 Template Types

In this implementation guide we have further refined the templates as follows:

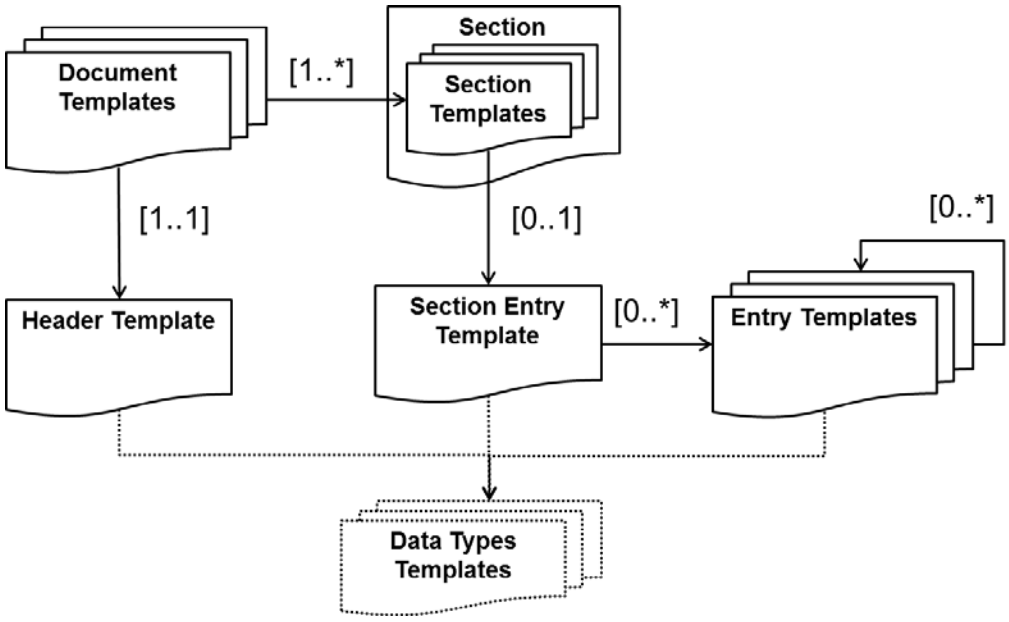


Figure 3: Template Relationships

2.4.1.1 Document Templates

Document Templates define and constrain the sections supported for each type of document as well as any constraints on the applicable header template.

Document templates are always identified using a `ClinicalDocument/templateId` element:

```
<ClinicalDocument classCode="DOCCLIN" moodCode="EVN"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="urn:hl7-
org:v3 Schemas/CDA-AEDAMS.xsd"
 xmlns="urn:hl7-org:v3"
 xmlns:hl7="urn:hl7-org:v3"
 xmlns:xs="http://www.w3.org/2001/XMLSchema"
 xmlns:eae="http://www.albertahealth.com/CDA">

   <realmCode code="CA" />
   <typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>

   <!--Alberta eReferral Attachment Header Declaration-->
   <templateId root="2.16.840.1.113883.3.163.99.4.7.3"/>
   <!—Alberta eReferral Clinical Attachment template declaration-->
   <templateId root="2.16.840.1.113883.3.163.99.4.1.1"/>

   ...

</ClinicalDocument>
```

Figure 4: templateId element example XML

2.4.1.2 Header Templates

Header Templates define and constrain the elements of the document header. Each Document Template will reference a single Header Template that includes the appropriate header constraints for that document type.

2.4.1.3 Section Templates

Section Templates define and constrain the format of a CDA body section. There are three possible flavours of Section template within this guide: Section with entries required (CDA Level 3), Section with entries disallowed (CDA Level 2) and Section with entries allowed.

The Section Template will always start at the `<Section>` element. If entries are allowed (optional or required) the applicable Section Template will have an `<entry>` component and a reference to the Section-Entry template that is applicable to the section.

For example:

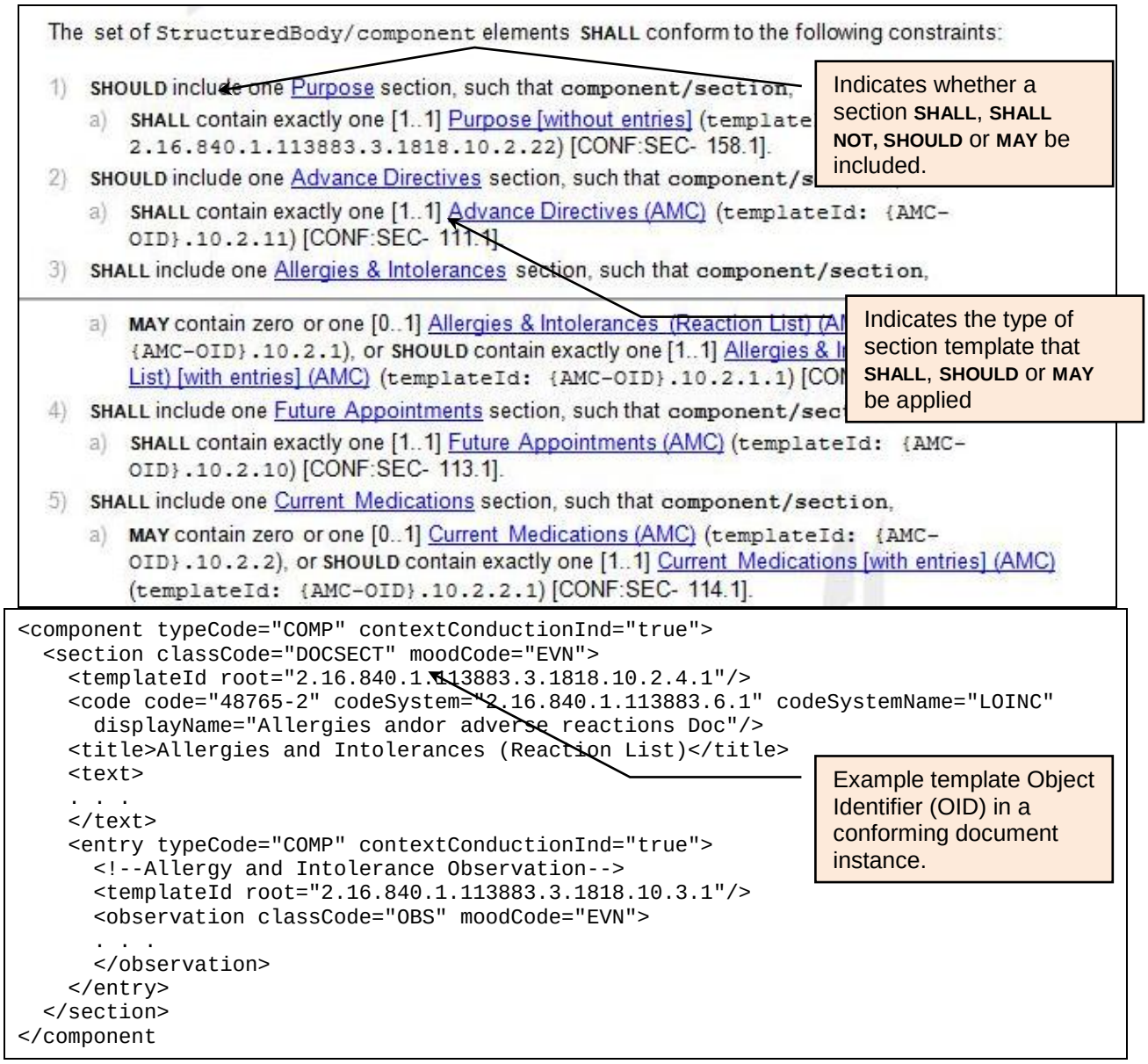


Figure 5: Document section constraints example with XML

Section templates are independent specification elements that can be reused by future document specifications. Note that section templates that do not support machine processable structured entries (*i.e*. CDA Level 2 section templates) will not reference a Section-Entry template.

2.4.1.4 Section-Entry Templates

Section-Entry Templates define and constrain the format of a CDA-L3 body section. The Section template will always start at the <Entry> element and may reference Entry templates if required.

2.4.1.5 Entry Templates

Entry Templates define reusable section components that may be called from another Entry template or a Section-Entry template. Entry templates may start with any clinical statement entry point such as a participation or act relationship (*e.g.* `<entryRelationship>` or `<author>`).

2.4.1.6 Data Type Templates

Data Type Templates define the constraints for compound data types supported by the specification and is called by the Header, Section Entry and Entry Templates where compound data types are assigned to data elements.

2.4.2 Template Identification

Template identifiers (`templateId`) are assigned to all templates including Document, Section, Section-entry and Entry templates. When valued in an instance, the template identifier signals the imposition of a set of template-defined constraints. The value of this attribute (e.g. `<templateID @root="2.16.840.1.113883.10.20.22.4.8"/>`) provides a unique identifier for the template in question.

Within the implementation guide, each template is documented in a distinct section. Following the template name, the templates are identified using the following convention:

`[template type: templateId OID (open/closed)]`

Bracketed information following each template title indicates the template type (section, observation, act, procedure, *etc*.), the `templateId`, and whether the template is open or closed.

2.4.2.1 Open and Closed Templates

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 implementers to develop additional structured content not constrained within this guide.

2.4.3 Originator Responsibilities (General Case)

An originator can apply a `templateId` if there is a desire to assert conformance with a particular template. In the most general forms of CDA exchange, an originator need not apply a `templateId` for every template to which an object in a document instance conforms. The implementation guide for a particular interface shall assert whenever `templateIds` are required for conformance.

These specifications do establish the formal use and specification of a template in conformant exchanges. In general, a `templateId` is to be included at the document, section and section entry levels.

2.4.4 Recipient Responsibilities (General Case)

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

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

These specifications do require that recipients that have declared their systems to be conformant with one or more documents in this specification be able to accurately process all information in received documents – particularly information that is defined in accordance with the templates established herein.

2.5 CONFORMANCE STATEMENTS

This specification document makes use of formal Conformance Statements in order to support the implementation of the specification and to form a rigorous basis for conformance testing and any solution certification.

The conformance statements are automatically generated from an underlying reference data model using an algorithm that converts constraints recorded in the Reference Data Model to a printable presentation. This presentation is materially consistent with the convention for documenting conformance statements in implementation guides for the HL7 CDA standard.

2.5.1 Conformance Statement Identification

The conformance statements are numbered uniquely and linked to the data element to which they apply, if multiple conformance statements apply to a single data element they will have an appropriate suffix added that references a particular rule element. These identifiers are persistent but not sequential.

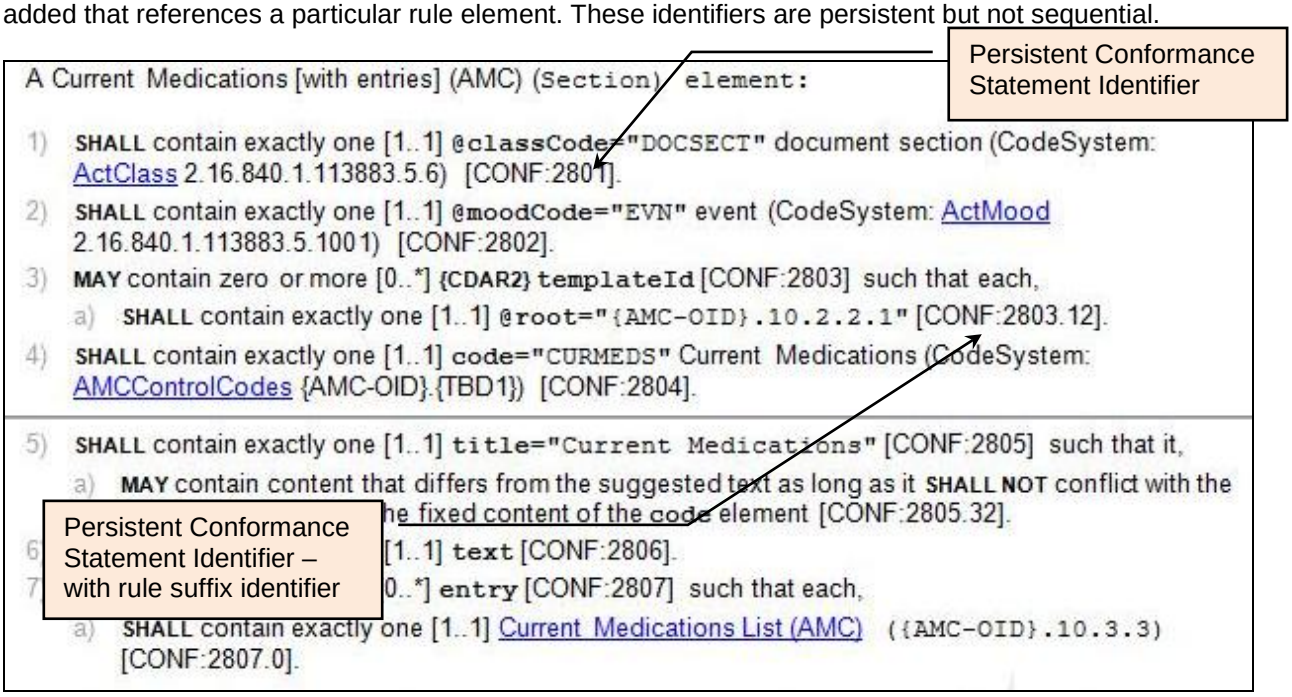


Figure 6: Conformance Statement Identifier Example

Please note the following:

- Each conformance statement may have a sub-rule with a specific rule suffix identified after the period in the conformance number. These rule suffix numbers are not sequential but reflect a particular rule that has been applied;
- Conformance statements pertaining to document specific header constraints are prefixed with “MAN-“ and represent their own numbering series;
- Conformance statements pertaining to Section inclusion at the Document level are prefixed with “SEC-“ and represent their own numbering series; and
- Conformance statements within the Data Type Templates are prefixed with “DT-“ and represent their own numbering series;

2.5.2 Existence & Cardinality Conformance

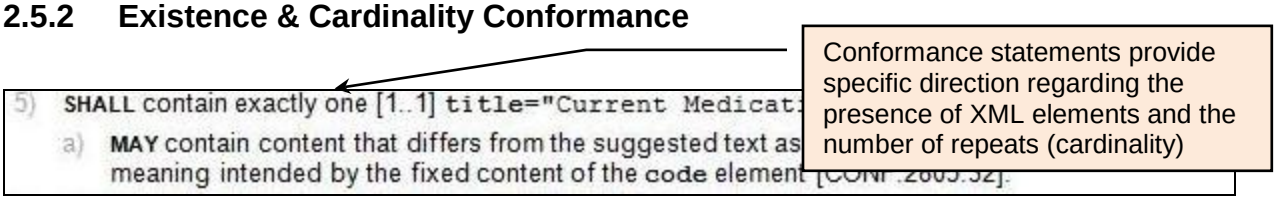


Figure 7: Existence & Cardinality Conformance Example

A primary use of conformance statements is to express explicit expectations on the existence and cardinality of various data elements. The existence and cardinality expectations expressed in this implementation guide are typically tighter than the default expectations expressed by the CDA R2 standard. However, where the existence and cardinality conformance listed echoes that of CDA R2, the keyword **{CDAR2}** is included in the statement.

2.5.3 Vocabulary Conformance

Formal specifications for value-set constraints are based on the latest recommendations from the HL7 Vocabulary Committee. Value-set constraints can be "**STATIC**," meaning that they are bound to a specified version of a value set, or "**DYNAMIC**," meaning that they are bound to the most current version of a value set. A simplified constraint is used when binding is to a single code.

Vocabulary conformance constraints will also indicate whether a coded field can only be sent using values from the value set (coded no extension or CNE) through use of the phrase "**SHALL** contain" or whether a sending system may use another code in situations where no appropriate code exists within the bound value set (coded with extension or CWE) through use of the phrase "**SHOULD** contain". Notwithstanding the fact that a binding may be designated as "CWE" conformant systems **SHALL** always send a code from the specified value-set when the concept being communicated exists in the value-set unless stated otherwise in this implementation guide. In other words, extensions apply only to concepts which are not represented in the value-set.

The following figure provides an example of the syntax for vocabulary binding to either **DYNAMIC** or **STATIC** value sets. It also shows how additional constraints may be specified that limit the permitted choices:

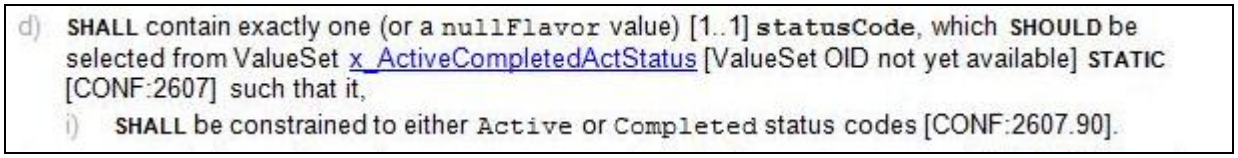


Figure 8: Existence & Cardinality Conformance Example

Syntax for vocabulary binding to a single code:

1) **SHALL** contain exactly one [1..1] `@typeCode="COMP"` component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:2600].

Figure 9: Existence & Cardinality Conformance Example

Additional information on vocabulary binding has been included in the Vocabulary Chapter.

2.5.4 Tabular View

These specifications also incorporate tabular views of the individual elements to provide additional business data in a more easily digestible format. These views are structured as follows:

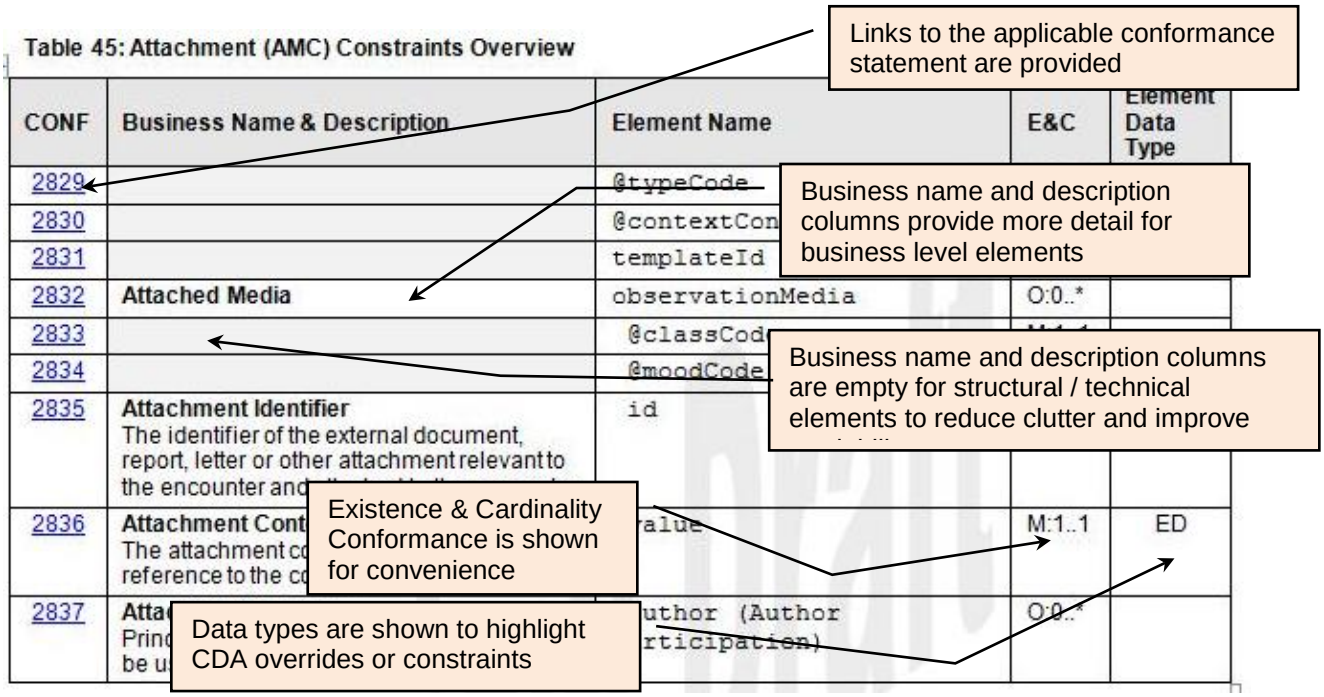


Figure 10: Tabular Element View Example

2.6 XML EXAMPLES AND SAMPLE DOCUMENTS

XML examples appear in various figures in this document in `this monospace font.` Portions of the required XML content may be omitted from each example for brevity; these omissions are marked by an ellipsis (…) as shown in the example below:

```
<ClinicalDocument xmins='urn:h17-org:v3'>
   ...
   <!-- An illustrative comment -->

</ClinicalDocument>
```

Figure 11: Format of XML Examples

Examples in this guide may also include XML comments. Except as noted, inclusion of these comments in actual document instances is optional but recommended. In other words, in order to improve human readability, systems sending conformant documents **SHOULD** include comments where appropriate and **SHALL** include comments when explicitly directed by this implementation guide.

2.7 CARDINALITY

Cardinality rules exist for each section and each individual data element within a section. Cardinality reflects the number of occurrences that may or must be provided for a particular section or element, and is represented by a `0, 1, *` or another number indicating the minimum cardinality, followed by two periods and a `*, 0, 1,` or other number indicating the maximum cardinality. For example, `0..*` indicates a minimum cardinality of 0 and maximum cardinality of many.

The following table gives examples of the different types of cardinalities that may be defined for sections and data elements:

Table 1: Cardinality Examples

Cardinality	Description
0..1	The section or data element may have zero or one instance.
1..1	The section or data element may have one and only one instance.
0..*	The section or data element may have zero or more instances.
1..*	The section or data element may have one or more instances.
1..4	The section or data element may have one to four instances.
2..2	The section or data element must have two instances.

2.8 MANDATORY / OPTIONAL / REQUIRED

Each section and each data element within a section is defined as mandatory, optional or required (M/O/R). The following table outlines how these technical requirements are mapped to conformance verbs and how these designations are generally to be interpreted.

Table 2: Conformance Terms and Keywords

Conformance Term	Description	Conformance Keyword
Mandatory	If a section or data element is mandatory (denoted by 'M'), it must be present in the document, otherwise the document is invalid and is non-conformant. The minimum cardinality for all mandatory items is 1.	**SHALL**
Required	If a section or data element is required (denoted by 'R'), the sending application **SHALL** support this field. In other words, if the data is available, then the field **SHALL** be included in the document. If the minimum cardinality is 0 and the data is not available, the field may be omitted from the document and said document would still be conformant. If the minimum cardinality is 1 and the data is not available, a `NullFlavor` code **SHALL** be sent (*e.g*. no information, unknown, masked, not asked and asked, but unknown).	**SHOULD**
Optional	If a section or data element is optional (denoted by 'O'), the section or data element **MAY** or **MAY NOT** be sent by conformant originating systems and **MAY** or **MAY NOT** be supported by conformant receiving systems. The receiving application **SHALL** not assume the presence of this item in a document nor **SHALL** it assume that the absence of this data means that the associated information is not asserted (*e.g*. absence of an allergy record can never be assumed to imply that there are no allergies)..	**MAY**

Note: If an element is [R:1..x] the sending system **SHALL** send a valid value or a `nullFlavor` code. If the element is [R:0..x] the sending system **MAY** omit the element if the data is not available.

If a section or data element is not supported or encoded the section or data element **SHALL NOT** be included in the document. Inclusion of the item in the document is non-conformant.

2.9 NULL FLAVOUR

Information technology solutions store and manage data, but sometimes data is not available: an item may be unknown, not relevant, or not computable or measureable. In HL7, a *flavor* of null, or `nullFlavor`, describes the reason for missing data. The ability to disambiguate between data that is unknown from data that is simply not sent is particularly critical in information exchanges where the absence of a data element (*e.g*. the absence of alert or allergy data) could be misinterpreted as a lack of alerts or allergies. Similarly, some data may not be known at a particular point in time but become available at a later date.

For example, if a patient arrives at an Emergency Department unconscious and without identification, a `nullFlavor` code is used to represent the lack of information. The patient's birth date would be represented with a `nullFlavor` code of "`NAV`", which is the code for "temporarily unavailable". When

the patient regains consciousness or a relative arrives, one may be able to determine this information and include it in subsequent communications.

Use `nullFlavor` codes for unknown, required, or optional attributes as follows:

Table 3: nullFlavor codes

Null Flavor	Description
NI	No information. This is the most general and default `nullFlavor`
NA	Not applicable. Known to have no proper value (e.g., last menstrual period for a male).
UNK	Unknown. A proper value is applicable, but is not known.
ASKU	Asked, but not known. Information was sought, but not found (e.g., the patient was asked but did not know).
NAV	Temporarily unavailable. The information is not available, but is expected to be available later.
NASK	Not asked. The patient was not asked.
MSK	There is information on this item available but it has not been provided by the sender due to security, privacy, or other reasons. There may be an alternate mechanism for gaining access to this information.

This above list contains those null flavors that are commonly used in clinical documents. For the full list and descriptions, see the `nullFlavor` vocabulary domain in the CDA normative edition.

Any **SHALL** conformance statement may use `nullFlavor`, unless the attribute is required or the `nullFlavor` is explicitly disallowed. **SHOULD** and **MAY** conformance statement may also use `nullFlavor`.

```
<!-- 1. SHALL contain at least one [1..*] id -->
<!-- 2. SHALL contain exactly one [1..1] code -->
<!-- 3. SHALL contain exactly one [1..1] effectiveTime -->

<entry>
  <observation classCode="OBS" moodCode="EVN">
    <id nullFlavor="NI"/>
    <code nullFlavor="OTH"> <originalText>New Grading system</originalText> </code>
    <effectiveTime nullFlavor="UNK"/>
  </observation>
</entry>
```

Figure 12: nullFlavor Example

The use of a `nullFlavor` code is generally preferred over the use of “Other” or “Unknown” codes within Value Sets for coded data elements.

2.10 DATA TYPES

Please see the Data Type Chapter for additional information.

2.11 CDA SCHEMAS

2.11.1 CDA Schema Files

A schema is set of requirements that need to be met in order for a document or set of data to be a valid expression within the context of a particular grammar. The HL7 v3 Clinical Document Architecture R2 Normative Standard and these specifications include the following schema files:

Schema File	Description
Narrativeblock.xsd	Schema file used for validations of the structure of the Narrative Blocks in the clinical document.
Voc.xsd	Schema file used for vocabulary validation.
Datatypes.xsd	Schema file that defines the representation of HL7 V3 data types in XML. Simple and complex data types (e.g. IVL_TS). Includes Datatypes-based.xsd.
Datatypes-base.xsd	Schema file that defines the representation of the base HL7 V3 data types in XML. These are mostly simple data types (e.g. TS).

The following diagram, from the HL7 v3 CDA specification, demonstrates the relationship of the schema files:

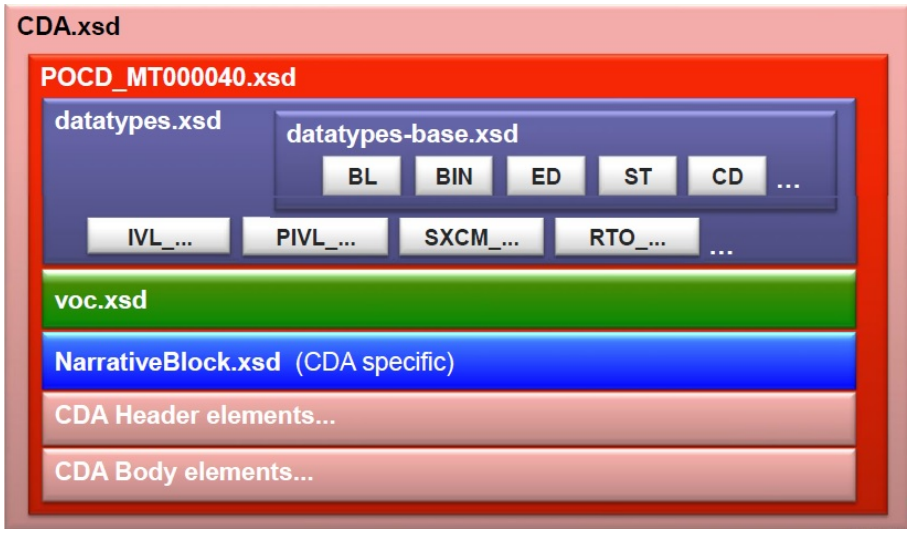


Figure 13: CDA Schema Overview

2.11.2 CDA Schema Extension

At this time, these specifications do NOT include any CDA Schema extensions.

2.12 EMBEDDED SAMPLES AND SAMPLE INSTANCES

Any embedded sample snippets as well as any sample document instances distributed with this guide are solely informative content. In the case of discrepancies between these samples and the specification, the latter **SHALL** prevail.

3.0 HEADER TEMPLATES

3.1 ALBERTA EREFERRAL ATTACHMENT HEADER

`[ClinicalDocument: templateId 2.16.840.1.113883.3.163.99.4.7.3(closed)]`

This header reflects the standard header for all documents in these CDA specifications. It has been adapted from the ***Alberta Shared Health Record CDA*** header.

Technical Alignment Summary

Note that the header template is based on the following templates with variances as noted below:

Alberta Shared Health Record Header Template [2.16.840.1.113883.3.163.10.2.2.1] variances:

The Alberta eReferral Attachment Header differs in that it:

- Clinical Document is explicitly bound to be a ClinicalDocument element from the urn:hl7-org:v3 namespace [CONF:3952.8].
- Document Template Id is explicitly bound this header with the second occurrence to be the OID of the applicable document template [CONF:3955.78].
- Information Recipient is described as also supporting being a “Health Chart” [CONF: 3966]
- Authoring Device is optionally supported to enable the communication of the system that authored the document in addition to the authoring provider. [CONF: 4000]. Requires that an Assigned Person, Assigned Authoring Device, or both be provided.
- Patient’s Identifier is defined to support from 1 to 3 instances rather than 1 only in the case of the SHR template. At least one identifier **SHALL** be provided and it **SHALL** be the Alberta Unique Lifetime Identifier (ULI) (OID: 2.16.840.1.113883.4.20). Other identifiers may be, for example, a Provincial Personal Health Number (e.g. BC PHN). [CONF: 4017]
- Parent Document is explicitly constrained to either RPLC (Replace) or APND (Append) type codes [CONF:4147.109].

3.1.1 Core Elements

Table 4: Core Elements Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3952	**Clinical Document**	`ClinicalDocument`	M:1..1	
3953		`typeId`	M:1..1	
3954		`realmCode`	M:1..1	CS
3955		`templateId`	M:1..2	II
3956		`@classCode`	M:1..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3957		@moodCode	M:1..1	
3958	**Unique Document Identifier** Unique Identifier for this instance of the document as assigned by the authoring system.	id	M:1..1	II
3959	**Document Type** The type of document encoded using standard document type codes (e.g. referral, consult, medical summary).	code	M:1..1	CE
3960	**Document Title** Title of the document, not to conflict with the Document Type (e.g. Referral Request).	title	M:1..1	ST
3961	**Document Creation Time** Date and time that the document was created. Note that this is NOT necessarily the same as the date/time the document was sent/transmitted.	effectiveTime	M:1..1	TS
3962	**Document Confidentiality** Level of confidentiality of the document coded with a default value of Normal.	confidentialityCode	M:1..1	CE
3963	**Document Language** The language in which the clinical document is written.	languageCode	M:1..1	CS
3964		setId	O:0..1	II
3965		versionNumber	O:0..1	INT

1) **SHALL** contain exactly one [1..1] **ClinicalDocument** [CONF:3952] such that it,
   a) **SHALL** be a ClinicalDocument element from the urn:hl7-org:v3 namespace [CONF:3952.8].
   b) **SHALL** contain exactly one [1..1] **typeId** [CONF:3953] such that it,
      i) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.1.3" [CONF:3953.10].
      ii) **SHALL** contain exactly one [1..1] **@extension**="POCD_HD000040" [CONF:3953.11].
   c) **SHALL** contain exactly one [1..1] **realmCode**="AB" Alberta (CodeSystem: hl7Realm 2.16.840.1.113883.5.1124) [CONF:3954].
   d) **SHALL** contain at least one but not more than 2 [1..2] **templateId** [CONF:3955] such that each,
      i) **SHALL** contain exactly one [1..1] **@root** element; one occurrence of **templateId/@root**="2.16.840.1.113883.3.163.99.4.7.3" and the second occurrence of **templateId/@root**shall be the OID of the applicable document template [CONF:3955.78].
   e) **SHALL** contain exactly one [1..1] **@classCode**="DOCCLIN" clinical document (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3956].
   f) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3957].
   g) **SHALL** contain exactly one [1..1] **id** [CONF:3958] such that it,
      i) **SHALL** contain **@root**=X where X is a GUID [CONF:3958.29].
   h) **SHALL** contain exactly one [1..1] **code**, which **SHALL** be selected from ValueSet AlbertaDocumentType 2.16.840.1.113883.3.163.99.4.8.7 **STATIC** [CONF:3959].
   i) **SHALL** contain exactly one [1..1] **title** [CONF:3960] such that it,

i) **SHALL NOT** conflict with the meaning intended by **`ClinicalDocument/code`** [CONF:3960.28].

j) **SHALL** contain exactly one [1..1] **`effectiveTime`** [CONF:3961] such that it,
   i) **SHALL** be precise to the day and **SHOULD** be precise to the minute; if precise to the minute, **`value`** **SHALL** include a time zone offset [CONF:3961.18].

k) **SHALL** contain exactly one [1..1] **`confidentialityCode`**, which **SHALL** be selected from ValueSet x_BasicConfidentialityKind 2.16.840.1.113883.2.20.3.139 **STATIC** [CONF:3962].

l) **SHALL** contain exactly one [1..1] **`languageCode`**="en-CA" English Canadian (CodeSystem: iso639-3 1.0.639.3) [CONF:3963].

m) **MAY** contain zero or one [0..1] **`setId`** [CONF:3964] such that it,
   i) **SHALL**, when present, contain **`@root`**=X where X is a GUID [CONF:3964.1].
   ii) **SHALL** be present when **`versionNumber`** is present [CONF:3964.2].

n) **MAY** contain zero or one [0..1] **`versionNumber`** [CONF:3965] such that it,
   i) **SHALL**, when present, contain an integer representing the version of the document, with the initial version of 1, incrementing by one with each version of the document [CONF:3965.3].
   ii) **SHALL** be present when **`setId`** is present [CONF:3965.4].

3.1.2 Information Recipient [informationRecipient]

Table 5: Information Recipient [informationRecipient] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3966	**Information Recipient** The Information Recipient provides demographic information on the receiver of the document. The recipient may be a professional care provider, organization, and clinic/hospital or may be the patient themselves. The Information Recipient may also be the ""health chart"". The recipient may include the primary receiver and any "copy to" or secondary recipients. If a delegate receives the document on behalf of the actual intended recipient, the intended recipient's information will appear in the information recipient information; the delegate information is not tracked. This may be a specific person, more than one person (primary and secondary recipients) or an organization. The Information Recipient may repeat to support multiple recipients. The Recipient may be ""Health Chart"" to indicate that the intended recipient is the physical health cart belonging to the organization identified.	informationRecipient	R:0..10	
3967		@typeCode	M:1..1	
3968		intendedRecipient	M:1..1	
3969		@classCode	M:1..1	
3974		informationRecipient	R:0..1	
3975		@classCode	M:1..1	
3976		@determinerCode	M:1..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3977	**Recipient's Name**	name	M:1..1	PN
3978	**Recipient's Organization**	receivedOrganization	R:0..1	
3979		@classCode	M:1..1	
3980		@determinerCode	M:1..1	
3981	**Recipient's Organization Identifier** Identifier of the organization that is the intended recipient of the document.	id	R:1..1	II
3982	**Recipient's Organization Name** Name of the organization that is the intended recipient of the document.	name	R:0..1	ON

o) **SHALL** contain up to 10 if available [0..10] **informationRecipient** [CONF:3966].
   i) **SHALL** contain exactly one [1..1] **@typeCode**="PRCP or TRC" Primary Information Recipient [Default] or Secondary Recipient (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:3967] such that it,
      (1) **SHALL** contain "PRCP" primary information recipient for the first occurrence of informationRecipient and "TRC" tracker (CodeSystem: 2.16.840.1.113883.5.90) for any subsequent occurrences, if applicable. [CONF:3967.145].
   ii) **SHALL** contain exactly one [1..1] **intendedRecipient** [CONF:3968].
      (1) **SHALL** contain exactly one [1..1] **@classCode**="ASSIGNED" assigned (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:3969].
      (2) **SHALL** contain zero or one if available [0..1] **informationRecipient** [CONF:3974] such that it,
         (a) **SHALL** be present if **receivedOrganization** Is not included but **MAY** be omitted if **receivedOrganization** Is included [CONF:3974.23].
         (b) **SHALL** contain exactly one [1..1] **@classCode**="PSN" person (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3975].
         (c) **SHALL** contain exactly one [1..1] **@determinerCode**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3976].
         (d) **SHALL** contain exactly one [1..1] **name** [CONF:3977] such that it,
            (i) **SHALL**, when present, conform to the Person Name (PN) pan-Canadian Data Type data type constraint template (2.16.840.1.113883.3.3068.10.5.3) [CONF:3977.5].
      (3) **SHALL** contain zero or one if available [0..1] **receivedOrganization** [CONF:3978] such that it,
         (a) **SHALL** be present if **receivedRecipient** Is not included but **MAY** be omitted if **receivedRecipient** Is included [CONF:3978.24].
         (b) **SHALL** contain exactly one [1..1] **@classCode**="ORG" organization (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3979].
         (c) **SHALL** contain exactly one [1..1] **@determinerCode**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3980].
         (d) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **id** [CONF:3981].
         (e) **SHALL** contain zero or one if available [0..1] **name** [CONF:3982].

3.1.3 Author [author]

Table 6: Author [author] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3986	**Author** The Author provides demographic information on the author(s) of the document, as well as the software system used to create the document. The Author is the primary care provider who is responsible for composing the document. A document may not be edited and forwarded under the previous author's name. The author will always be the person who last edited the document. If a delegate sends a document on behalf of another care provider the clinically responsible person's information will appear in the author information. Note that the custodian, not the author, represents the organization from which the document originates and that is in charge of maintaining the document. Author information also describes the source system that composed the document. The Author MAY occur twice: once for human author information and once for source system information.	author	M:1..*	
3987		@typeCode	M:1..1	
3988		@contextControlCode	M:1..1	
3989	**Author Time** Date and time stamp when document was created.	time	M:1..1	TS
3990		assignedAuthor	M:1..1	
3991		@classCode	M:1..1	
3992	**Provider Unique Identifier** Identifier of individual that is clinically responsible for authoring the document.	id	M:1..1	II
3995		assignedPerson	M:1..1	
3996		@classCode	M:1..1	
3997		@determinerCode	M:1..1	
3998	**Authoring Person(s) Name**	name	R:1..1	PN
3999	**Authoring Person(s) Specialty**	code	O:0..1	CE
4000		assignedAuthoringDevice	O:0..1	
4252		@classCode	M:1..1	
4253		@determinerCode	M:1..1	
4254	**Authoring System Device Software Name** Code and name of the software system that authored the document.	softwareName	M:1..1	SC

p) **SHALL** contain at least one [1..*] **author** [CONF:3986].

i) **SHALL** contain exactly one [1..1] **@typeCode**="AUT" author (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:3987].
ii) **SHALL** contain exactly one [1..1] **@contextControlCode**="OP" overriding propagating (CodeSystem: ContextControl 2.16.840.1.113883.5.1057) [CONF:3988].
iii) **SHALL** contain exactly one [1..1] **time** [CONF:3989] such that it,
   (1) **SHALL** be precise to the day and **SHOULD** be precise to the minute; if precise to the minute, **value SHALL** include a time zone offset [CONF:3989.18].
iv) **SHALL** contain exactly one [1..1] **assignedAuthor** [CONF:3990].
   (1) **SHALL** contain exactly one [1..1] **@classCode**="ASSIGNED" assigned (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:3991].
   (2) **SHALL** contain exactly one [1..1] **id** [CONF:3992] such that it,
      (a) **MAY** be a locally assigned identifier, if the **author** is a not a Provider [CONF:3992.13].
      (b) **MAY** contain a `NullFlavor` if the **id** is not known and the `name` is included [CONF:3992.14].
   (3) **SHALL** contain exactly one [1..1] **assignedPerson** [CONF:3995] such that it,
      (a) **SHALL** be included if and only if **assignedAuthoringDevice** is not included such that either an **assignedPerson** or an **assignedAuthoringDevice** is included but not both [CONF:3995.15].
      (b) **SHALL** contain exactly one [1..1] **@classCode**="PSN" person (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3996].
      (c) **SHALL** contain exactly one [1..1] **@determinerCode**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3997].
      (d) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **name** [CONF:3998] such that it,
         (i) **SHALL**, when present, conform to the Person Name (PN) pan-Canadian Data Type data type constraint template (`2.16.840.1.113883.3.3068.10.5.3`) [CONF:3998.5].
   (4) **MAY** contain zero or one [0..1] **code**, which **SHOULD** be selected from ValueSet HealthcareProviderRoleType 2.16.840.1.113883.2.20.3.48 **DYNAMIC** [CONF:3999].
   (5) **MAY** contain zero or one [0..1] **assignedAuthoringDevice** [CONF:4000] such that it,
      (a) **SHALL** be included if and only if **assignedPerson** is not included such that either an **assignedPerson** or an **assignedAuthoringDevice** is included but not both [CONF:4000.16].
      (b) **SHALL** contain exactly one [1..1] **@classCode**="DEV" device (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:4252].
      (c) **SHALL** contain exactly one [1..1] **@determinerCode**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:4253].
      (d) **SHALL** contain exactly one [1..1] **softwareName** [CONF:4254] such that it,
         (i) **SHALL** be included to identify the originating system if and only if **assignedAuthoringDevice** is included [CONF:4254.17].

3.1.4 Custodian Organization [custodian]

Table 7: Custodian Organization [custodian] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
4001	**Custodian Organization**	`custodian`	M:1..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
	The Custodian represents the organization from which the document originates and that is in charge of maintaining the document. The custodian is the steward that is entrusted with the care of the document; every CDA document must have exactly one custodian. Because this specification is an exchange standard and may not represent the original form of the authenticated document, the custodian represents the steward of the original source document.			
4002		`@typeCode`	M:1..1	
4003		`assignedCustodian`	R:1..1	
4004		`@classCode`	M:1..1	
4005		`representedCustodianOrganization`	R:1..1	
4006		`@classCode`	M:1..1	
4007		`@determinerCode`	M:1..1	
4008	**Organization Identifier** Identifier of the custodian organization.	`id`	M:1..1	II

q) **SHALL** contain exactly one [1..1] **`custodian`** [CONF:4001].
   i) **SHALL** contain exactly one [1..1] **`@typeCode`**="CST" custodian (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:4002].
   ii) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`assignedCustodian`** [CONF:4003].
      (1) **SHALL** contain exactly one [1..1] **`@classCode`**="ASSIGNED" assigned (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:4004].
      (2) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`representedCustodianOrganization`** [CONF:4005].
         (a) **SHALL** contain exactly one [1..1] **`@classCode`**="ORG" organization (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:4006].
         (b) **SHALL** contain exactly one [1..1] **`@determinerCode`**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:4007].
         (c) **SHALL** contain exactly one [1..1] **`id`** [CONF:4008].

3.1.5 Patient [recordTarget]

Table 8: Patient [recordTarget] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
4012	**Patient** The Patient Demographics (Record Target) includes all the information regarding the patient. This may include patient identifiers, name, address, contact information, gender, birth date and location, marital status,	`recordTarget`	M:1..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
	religion, race, ethnic group, guardians, etc.			
4013		@typeCode	M:1..1	
4014		@contextControlCode	M:1..1	
4015		patientRole	M:1..1	
4016		@classCode	M:1..1	
4017	**Patient's Identifier** The primary unique identifier(s) for the patient.	id	M:1..3	II
4021		patient	R:1..*	
4022	**Patient's Name**	name	R:1..1	PN
4023	**Patient's Administrative Gender**	administrativeGenderCode	R:1..1	CE
4024	**Patient's Birth Date/Time**	birthTime	R:1..1	TS

r) **SHALL** contain exactly one [1..1] **recordTarget** [CONF:4012].
   i) **SHALL** contain exactly one [1..1] **@typeCode**="RCT" record target (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:4013].
   ii) **SHALL** contain exactly one [1..1] **@contextControlCode**="OP" overriding propagating (CodeSystem: ContextControl 2.16.840.1.113883.5.1057) [CONF:4014].
   iii) **SHALL** contain exactly one [1..1] **patientRole** [CONF:4015].
      (1) **SHALL** contain exactly one [1..1] **@classCode**="PAT" patient (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:4016].
      (2) **SHALL** contain at least one but not more than 3 [1..3] **id** [CONF:4017] such that each,
         (a) **MAY** contain local identifiers, out of province health numbers or other relevant identifiers as long as at least one **SHALL** contain an Alberta Unique Lifetime Identifier (ULI) for which the OID root is 2.16.840.1.113883.4.20 [CONF:4017.142].
         (b) **SHALL** include the assigningAuthority applicable to each included **id** [CONF:4017.21].
      (3) **SHALL** contain one or more (or a nullFlavor value) [1..*] **patient** [CONF:4021].
         (a) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **name** [CONF:4022].
         (b) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **administrativeGenderCode**, which **SHALL** be selected from ValueSet AdministrativeGender 2.16.840.1.113883.1.11.1 **STATIC** [CONF:4023].
         (c) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **birthTime** [CONF:4024] such that it,
            (i) **SHALL** be precise to the month, and **SHOULD** be precise to the day [CONF:4024.22].

3.1.6 Authenticator Participant [authenticator]

Table 9: Authenticator Participant [authenticator] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
4076	**Authenticator Participant** The Authenticator represents a participant	authenticator	O:0..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
	who has attested to the accuracy of the document, but who does not have privileges to legally authenticate the document (see Legal Authenticator). An example would be a resident physician who sees a patient and dictates a note, then later signs it. A clinical document can have zero to many authenticators. While electronic signatures are not captured the authentications require that a document has been signed manually or electronically by the responsible individual. An authenticator has a required authenticator.time indicating the time of authentication, and a required authenticator.signatureCode, indicating that a signature has been obtained and is on file.			
4077		@typeCode	M:1..1	
4078	**Authenticator Time** The date/time that the document was authenticated.	time	R:1..1	TS
4079	**Authenticator Signature Code**	signatureCode	R:1..1	CS
4080		assignedEntity	R:0..1	
4081		@classCode	M:1..1	
4082	**Authenticator Identifier**	id	M:1..1	II
4086		assignedPerson	R:1..1	
4087		@classCode	M:1..1	
4088		@determinerCode	M:1..1	
4089	**Authenticator Person Name**	name	M:1..1	PN

s) **MAY** contain zero or one [0..1] **`authenticator`** [CONF:4076].
   i) **SHALL** contain exactly one [1..1] **`@typeCode`**="AUTHEN" authenticator (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:4077].
   ii) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`time`** [CONF:4078].
   iii) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`signatureCode`**, which **SHALL** be selected from ValueSet ParticipationSignature 2.16.840.1.113883.2.20.3.88 **STATIC** [CONF:4079].
   iv) **SHALL** contain zero or one if available [0..1] **`assignedEntity`** [CONF:4080].
      (1) **SHALL** contain exactly one [1..1] **`@classCode`**="ASSIGNED" assigned (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:4081].
      (2) **SHALL** contain exactly one [1..1] **`id`** [CONF:4082] such that it,
         (a) **MAY** be a locally assigned identifier, if the **`author`** is a not a Provider [CONF:4082.13].
         (b) **MAY** contain a `NullFlavor` if the **`id`** is not known and the `name` is included [CONF:4082.14].
      (3) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`assignedPerson`** [CONF:4086].
         (a) **SHALL** contain exactly one [1..1] **`@classCode`**="PSN" person (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:4087].

(b) **SHALL** contain exactly one [1..1] **@determinerCode**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:4088].

(c) **SHALL** contain exactly one [1..1] **name** [CONF:4089] such that it,

(i) **SHALL**, when present, conform to the Person Name (PN) pan-Canadian Data Type data type constraint template (2.16.840.1.113883.3.3068.10.5.3) [CONF:4089.5].

3.1.7 Data Enterer Participant [dataEnterer]

Table 10: Data Enterer Participant [dataEnterer] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
4097	**Data Enterer Participant** The Data Enterer identifies the person who has transformed a dictated note into text such as a transcriptionist. In cases of a patient transfer or episodic document where the Medical Office Assistant (MOA) is responsible for preparing the chart or consolidating the information to be included the MOA should be identified as the data enterer. If the data enterer is different from the author, this information should be provided.	dataEnterer	O:0..1	
4098		@typeCode	M:1..1	
4099		@contextControlCode	M:1..1	
4100	**Data Enterer Time** The date/time that the data was entered.	time	R:0..1	TS
4101		assignedEntity	R:0..1	
4102		@classCode	M:1..1	
4103	**Data Enterer Identifier** Identifier of the healthcare provider participating in the encounter or a nullFlavor.	id	M:1..1	II
4107		assignedPerson	R:1..1	
4108		@classCode	M:1..1	
4109		@determinerCode	M:1..1	
4110	**Name**	name	M:1..1	PN

t) **MAY** contain zero or one [0..1] **dataEnterer** [CONF:4097].

i) **SHALL** contain exactly one [1..1] **@typeCode**="ENT" enterer (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:4098].

ii) **SHALL** contain exactly one [1..1] **@contextControlCode**="OP" overriding propagating (CodeSystem: ContextControl 2.16.840.1.113883.5.1057) [CONF:4099].

iii) **SHALL** contain zero or one if available [0..1] **time** [CONF:4100].

iv) **SHALL** contain zero or one if available [0..1] **assignedEntity** [CONF:4101].

(1) **SHALL** contain exactly one [1..1] **@classCode**="ASSIGNED" assigned (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:4102].

(2) **SHALL** contain exactly one [1..1] **id** [CONF:4103] such that it,

(a) **MAY** be a locally assigned identifier, if the **author** is a not a Provider [CONF:4103.13].

(b) **MAY** contain a `NullFlavor` if the **`id`** is not known and the `name` is included [CONF:4103.14].

(3) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`assignedPerson`** [CONF:4107].

(a) **SHALL** contain exactly one [1..1] **`@classCode`**="`PSN`" person (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:4108].

(b) **SHALL** contain exactly one [1..1] **`@determinerCode`**="`INSTANCE`" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:4109].

(c) **SHALL** contain exactly one [1..1] **`name`** [CONF:4110] such that it,

(i) **SHALL**, when present, conform to the Person Name (PN) pan-Canadian Data Type data type constraint template (`2.16.840.1.113883.3.3068.10.5.3`) [CONF:4110.5].

3.1.8 Parent Document [relatedDocument]

Table 11: Parent Document [relatedDocument] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
4146	**Parent Document** This element provides a way for a document that represents an addendum to or a revision of an existing document (Parent Document) instance to reference that document.	`relatedDocument`	O:0..1	
4147	**Document Related Type** A code indicating the type of relationship between the document and the parent document. May include Append, Replace or Transform.	`@typeCode`	M:1..1	
4148		`parentDocument`	M:1..1	
4149		`@classCode`	M:1..1	
4150		`@moodCode`	M:1..1	
4151	**Parent Document Unique Identifier** The identifier of the document that this document is related to.	`id`	M:1..1	II
4152	**Parent Document Type** The type of the document that this document is related to.	`code`	M:1..1	CD
4153	**Parent Document Text** The description and link to the related document.	`text`	R:0..1	ED
4154	**Parent Document Set ID**	`setId`	O:0..1	II
4155	**Parent Document Version**	`versionNumber`	O:0..1	INT

u) **MAY** contain zero or one [0..1] **`relatedDocument`** [CONF:4146].

i) **SHALL** contain exactly one [1..1] **`@typeCode`**, which **SHALL** be selected from ValueSet x_ActRelationshipDocument 2.16.840.1.113883.1.11.11610 **STATIC {CDAR2}** [CONF:4147] such that it,

(1) **SHALL** be constrained to either `RPLC` (Replace) or `APND` (Append) type codes [CONF:4147.109].

ii) **SHALL** contain exactly one [1..1] **`parentDocument`** [CONF:4148].

(1) **SHALL** contain exactly one [1..1] **@classCode**="DOCCLIN" clinical document (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:4149].
(2) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:4150].
(3) **SHALL** contain exactly one [1..1] **id** [CONF:4151].
(4) **SHALL** contain exactly one [1..1] **code**, which **SHOULD** be selected from ValueSet DocumentType 2.16.840.1.113883.1.11.10870 **DYNAMIC {CDAR2}** [CONF:4152].
(5) **SHALL** contain zero or one if available [0..1] **text** [CONF:4153] such that it,
    (a) **MAY** contain **@mediaType** to indicate the MIME type of the related document; a related document **SHALL NOT** be embedded in ParentDocument/text [CONF:4153.9].
(6) **MAY** contain zero or one [0..1] **setId** [CONF:4154] such that it,
    (a) **SHALL**, when present, contain **@root**=X where X is a GUID [CONF:4154.1].
    (b) **SHALL** be present when **versionNumber** is present [CONF:4154.2].
(7) **MAY** contain zero or one [0..1] **versionNumber** [CONF:4155] such that it,
    (a) **SHALL**, when present, contain an integer representing the version of the document, with the initial version of 1, incrementing by one with each version of the document [CONF:4155.3].
    (b) **SHALL** be present when **setId** is present [CONF:4155.4].

3.1.9 Service Event [documentationOf]

Table 12: Service Event [documentationOf] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
4215	**Service Event** The Service Event provides information on the service that is the subject of the document. Depending on the document type, an instance may contain documentation of a specific service event and the related performers (for instance, a Procedure Note would document the specific procedure event). If a Service Event is included in the document, it must be equivalent to, or further specialize, the value inherent in the Document Type; it shall not conflict with the document type as such a conflict would constitute an ambiguous situation.	documentationOf	O:0..1	
4216		@typeCode	M:1..1	
4217		serviceEvent	R:1..1	
4218		@classCode	M:1..1	
4219		@moodCode	M:1..1	
4220	**Service Event Identifier**	id	R:1..1	II
4221	**Code** Code identifying the type of service event that is being documented. For example the type of surgical procedure, examination or service.	code	R:1..1	CE

v) **MAY** contain zero or one [0..1] **`documentationOf`** [CONF:4215].
   i) **SHALL** contain exactly one [1..1] **`@typeCode`**="`DOC`" documentation (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:4216].
   ii) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`serviceEvent`** [CONF:4217].
      (1) **SHALL** contain exactly one [1..1] **`@classCode`**, which **SHALL** be selected from ValueSet CDAHeaderActClass 2.16.840.1.113883.3.3068.10.8.8 **STATIC {CDAR2}** [CONF:4218].
      (2) **SHALL** contain exactly one [1..1] **`@moodCode`**="`EVN`" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:4219].
      (3) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`id`** [CONF:4220].
      (4) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`code`**, which **SHOULD** be selected from ValueSet Procedure 2.16.840.1.113883.3.3068.10.8.11 **DYNAMIC {CDAR2}** [CONF:4221].

The following XML example outlines how to use the Alberta eReferral Attachment Header template:

```
<!--
**********************************************************
Alberta eReferral Attachment Header
**********************************************************
-->
   <realmCode code="AB" />
   <typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>
   <templateId root="2.16.840.1.113883.3.163.99.4.1.1"/><!-- Alberta Clinical
Attachment Template -->
   <templateId root="2.16.840.1.113883.3.163.99.4.7.2"/><!-- Alberta eReferral
Attachment Header -->
   <id extension="12345" root="2.16.840.1.113883.3.933"/>
   <code code=57133-1" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Referral"/>
   <title>Alberta eReferral Clinical Attachment</title>
   <effectiveTime value="201201091422"/>
   <confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25"/>
   <languageCode code="EN"/>
   <setId nullFlavor="NA"/>
   <versionNumber value="1"/>
   <!--
   *******************************************************
   Record Target
   *******************************************************
   -->
   <recordTarget typeCode="RCT" contextControlCode="OP">
      <patientRole classCode="PAT">
         <id extension="123456789" root="2.16.840.1.113883.4.20"
assigningAuthorityName="AB-ULI"/>
         <patient>
            <name>
               <prefix>Mrs.</prefix>
               <given>Jane</given>
               <given>E.</given>
               <family>Everywoman</family>
               <suffix>Jr.</suffix>
            </name>
            <administrativeGenderCode code="F" codeSystem="2.16.840.1.113883.5.1"
codeSystemName="HL7 - Administrative Gender" displayName="Female"/>
            <birthTime value="19710422"/>
            <languageCommunication>
               <languageCode code="EN"/>
            </languageCommunication>
         </patient>
      </patientRole>
   </recordTarget>
   <!--
   *******************************************************
   Author
   *******************************************************
   -->
   <author typeCode="AUT" contextControlCode="OP">
      <time value="20040812120000"/>
      <assignedAuthor>
         <id extension="0111" root="2.16.840.1.113883.11.13130"/>
         <code code="MD" codeSystem="2.16.840.1.113883.5.111"
codeSystemName="RoleCode" displayName="Medical Doctor"/>
         <assignedPerson classCode="PSN" determinerCode="INSTANCE">
            <name>
               <prefix>Dr.</prefix>
```

```
                <given>G</given>
                <family>Practitioner</family>
            </name>
            </assignedPerson>
    </assignedAuthor>
</author>
<!--
*********************************************************
Data Enterer
********************************************************* -->
<dataEnterer typeCode="ENT" contextControlCode="OP">
    <time value="200910201235" />
    <assignedEntity>
        <id root="B8E71AC2-0CD0-11E0-8746-CE50DFD72085" />
        <assignedPerson>
            <name>
                <prefix>Mr.</prefix>
                <given>Typ</given>
                <family>Fast</family>
            </name>
        </assignedPerson>
        <representedOrganization>
            <id root="B8E71AC2-0CD0-11E0-8746-CE50DFD72085" />
            <name>Good Health Clinic</name>
            <telecom value="tel: (555) 555-1009" use="WP"/>
            <addr use="WP">
                <streetAddressLine>4444 Healthcare Drive</streetAddressLine>
                <city>Calgary</city>
                <state>AB</state>
                <postalCode>A1B 2C3</postalCode>
                <country>CA</country>
            </addr>
        </representedOrganization>
    </assignedEntity>
</dataEnterer>
<!--
*********************************************************
Custodian
********************************************************* -->
<custodian typeCode="CST">
    <assignedCustodian classCode="ASSIGNED">
        <representedCustodianOrganization classCode="ORG" determinerCode="INSTANCE">
            <id extension="000" root="7EEF0BCC-F03E-4742-A736-8BAC57180C5F"/>
        </representedCustodianOrganization>
    </assignedCustodian>
</custodian>
<!--
*********************************************************
Information Recipient
********************************************************* -->
<informationRecipient typeCode="PRCP">
    <intendedRecipient classCode="ASSIGNED">
        <telecom value="tel:(780)444-4444" use="WP"/>
        <informationRecipient classCode="PSN" determinerCode="INSTANCE">
            <name>
                <prefix>Dr.</prefix>
                <given>S</given>
                <family>Pecialist</family>
                <suffix>Sr.</suffix>
            </name>
        </informationRecipient>
        <receivedOrganization classCode="ORG" determinerCode="INSTANCE">
```

```
            <id extension="12234" root="2.16.840.1.113883.3.1344"/>
            <name>Specialis Office Clinic</name>
         </receivedOrganization>
      </intendedRecipient>
   </informationRecipient>

   <!--
   ********************************************************
   Participant - Healthcare Participant
   ******************************************************** -->
   <participant typeCode="IND">
      <functionCode code="PCP"/>
      <associatedEntity classCode="PROV">
         <id root="8FF6156A-0CE8-11E0-BE3B-6C69DFD72085" extension="TBD"/>
         <code code="TBD" codeSystem="TBD" codeSystemName="TBD" displayName="Care
Team Provider" />
         <telecom value="tel: (555) 555-1009" use="WP"/>
         <telecom value="fax: (555) 555-1199" use="WP"/>
         <associatedPerson classCode="PSN" determinerCode="INSTANCE">
            <name>
               <prefix>Dr.</prefix>
               <given>C.</given>
               <family>Morehelp</family>
            </name>
         </associatedPerson>
      </associatedEntity>
   </participant>
```

Figure 14: Alberta eReferral Attachment Header entry example

3.2 ALBERTA SHARED HEALTH RECORD HEADER

`[ClinicalDocument: templateId 2.16.840.1.113883.3.163.10.2.2.1(closed)]`

The ***Alberta Shared Health Record CDA*** header has been included in this document for reference purposes only.

Please note that the Shared Health Record (SHR) specifications have not assigned a template OID to this header; the OID listed above was artificially assigned by adding ".1" to the Shared Health Record template ID.

3.2.1 Core Elements

Table 13: Core Elements Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3010	**Clinical Document**	`ClinicalDocument`	M:1..1	
3011		`typeId`	M:1..1	
3012		`realmCode`	M:1..1	CS
3013		`templateId`	M:1..2	II
3014		`@classCode`	M:1..1	
3015		`@moodCode`	M:1..1	
3016	**Unique Document Identifier**	`id`	M:1..1	II

CONF	Business Name & Description	Element Name	E&C	Element Data Type
	Unique Identifier for this instance of the document as assigned by the authoring system.			
3017	**Document Type** The type of document encoded using standard document type codes (e.g. referral, consult, medical summary, laboratory report).	code	M:1..1	CE
3018	**Document Title** Title of the document, not to conflict with the Document Type (e.g. Referral Request).	title	M:1..1	ST
3019	**Document Creation Time** Date and time that the document was created. Note that this is NOT necessarily the same as the date/time the document was sent/transmitted.	effectiveTime	M:1..1	TS
3020	**Document Confidentiality** Level of confidentiality of the document coded with a default value of Normal.	confidentialityCode	M:1..1	CE
3021	**Document Language** The language in which the clinical document is written.	languageCode	M:1..1	CS
3022		setId	O:0..1	II
3023		versionNumber	O:0..1	INT

1) **SHALL** contain exactly one [1..1] **`ClinicalDocument`** [CONF:3010].
   a) **SHALL** contain exactly one [1..1] **`typeId`** [CONF:3011] such that it,
      i) **SHALL** contain exactly one [1..1] **`@root`**="2.16.840.1.113883.1.3" [CONF:3011.10].
      ii) **SHALL** contain exactly one [1..1] **`@extension`**="POCD_HD000040" [CONF:3011.11].
   b) **SHALL** contain exactly one [1..1] **`realmCode`**="AB" Alberta (CodeSystem: hl7Realm 2.16.840.1.113883.5.1124) [CONF:3012].
   c) **SHALL** contain at least one but not more than 2 [1..2] **`templateId`** [CONF:3013] such that each,
   d) **SHALL** contain exactly one [1..1] **`@classCode`**="DOCCLIN" clinical document (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3014].
   e) **SHALL** contain exactly one [1..1] **`@moodCode`**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3015].
   f) **SHALL** contain exactly one [1..1] **`id`** [CONF:3016] such that it,
      i) **SHALL** contain **`@root`**=X where X is a GUID [CONF:3016.29].
   g) **SHALL** contain exactly one [1..1] **`code`**, which **SHOULD** be selected from ValueSet DocumentType 2.16.840.1.113883.1.11.10870 **DYNAMIC {CDAR2}** [CONF:3017].
   h) **SHALL** contain exactly one [1..1] **`title`** [CONF:3018] such that it,
      i) **SHALL NOT** conflict with the meaning intended by **`ClinicalDocument/code`** [CONF:3018.28].
   i) **SHALL** contain exactly one [1..1] **`effectiveTime`** [CONF:3019] such that it,
      i) **SHALL** be precise to the day and **SHOULD** be precise to the minute; if precise to the minute, **`value`** **SHALL** include a time zone offset [CONF:3019.18].
   j) **SHALL** contain exactly one [1..1] **`confidentialityCode`**, which **SHALL** be selected from ValueSet x_BasicConfidentialityKind 2.16.840.1.113883.2.20.3.139 **STATIC {CDAR2}** [CONF:3020].

k) **SHALL** contain exactly one [1..1] **languageCode**="en-CA" English Canadian (CodeSystem: iso639-3 1.0.639.3) [CONF:3021].
l) **MAY** contain zero or one [0..1] **setId** [CONF:3022] such that it,
   i) **SHALL**, when present, contain **@root**=X where X is a GUID [CONF:3022.1].
   ii) **SHALL** be present when **versionNumber** is present [CONF:3022.2].
m) **MAY** contain zero or one [0..1] **versionNumber** [CONF:3023] such that it,
   i) **SHALL**, when present, contain an integer representing the version of the document, with the initial version of 1, incrementing by one with each version of the document [CONF:3023.3].
   ii) **SHALL** be present when **setId** is present [CONF:3023.4].

3.2.2 Information Recipient [informationRecipient]

Table 14: Information Recipient [informationRecipient] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3024	**Information Recipient** The Information Recipient provides demographic information on the receiver of the document. The recipient may be a professional care provider, organization, and clinic/hospital or may be the patient themselves. The Information Recipient may also be the "health chart". The recipient may include the primary receiver and any “copy to” or secondary recipients. If a delegate receives the document on behalf of the actual intended recipient, the intended recipient’s information will appear in the information recipient information; the delegate information is not tracked. This may be a specific person, more than one person (primary and secondary recipients) or an organization. The Information Recipient may repeat to support multiple recipients.	informationRecipient	R:0..10	
3025		@typeCode	M:1..1	
3026		intendedRecipient	M:1..1	
3027		@classCode	M:1..1	
3032		informationRecipient	R:0..1	
3033		@classCode	M:1..1	
3034		@determinerCode	M:1..1	
3035	**Recipient's Name**	name	M:1..1	PN
3036	**Recipient's Organization**	receivedOrganization	R:0..1	
3037		@classCode	M:1..1	
3038		@determinerCode	M:1..1	
3039	**Recipient's Organization Identifier** Identifier of the organization that is the intended recipient of the document.	id	R:1..1	II
3040	**Recipient's Organization Name** Name of the organization that is the intended recipient of the document.	name	R:0..1	ON

n) **SHALL** contain up to 10 if available [0..10] **informationRecipient** [CONF:3024].
   i) **SHALL** contain exactly one [1..1] **@typeCode**="PRCP or TRC" Primary Information Recipient [Default] or Secondary Recipient (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:3025] such that it,
      (1) **SHALL** contain "PRCP" primary information recipient for the first occurrence of informationRecipient and "TRC" tracker (CodeSystem: 2.16.840.1.113883.5.90) for any subsequent occurrences, if applicable. [CONF:3025.145].
   ii) **SHALL** contain exactly one [1..1] **intendedRecipient** [CONF:3026].
      (1) **SHALL** contain exactly one [1..1] **@classCode**="ASSIGNED" assigned (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:3027].
      (2) **SHALL** contain zero or one if available [0..1] **informationRecipient** [CONF:3032] such that it,
         (a) **SHALL** be present if **receivedOrganization** Is not included but **MAY** be omitted if **receivedOrganization** Is included [CONF:3032.23].
         (b) **SHALL** contain exactly one [1..1] **@classCode**="PSN" person (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3033].
         (c) **SHALL** contain exactly one [1..1] **@determinerCode**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3034].
         (d) **SHALL** contain exactly one [1..1] **name** [CONF:3035] such that it,
            (i) **SHALL**, when present, conform to the Person Name (PN) pan-Canadian Data Type data type constraint template (2.16.840.1.113883.3.3068.10.5.3) [CONF:3035.5].
      (3) **SHALL** contain zero or one if available [0..1] **receivedOrganization** [CONF:3036] such that it,
         (a) **SHALL** be present if **receivedRecipient** Is not included but **MAY** be omitted if **receivedRecipient** Is included [CONF:3036.24].
         (b) **SHALL** contain exactly one [1..1] **@classCode**="ORG" organization (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3037].
         (c) **SHALL** contain exactly one [1..1] **@determinerCode**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3038].
         (d) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **id** [CONF:3039].
         (e) **SHALL** contain zero or one if available [0..1] **name** [CONF:3040].

3.2.3 Author [author]

Table 15: Author [author] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3044	**Author** The Author provides demographic information on the author(s) of the document, as well as the software system used to create the document. The Author is the primary care provider who is responsible for composing the document. A document may not be edited and forwarded under the previous author's name. The author will always be the person who last edited the document. If a delegate sends a document	author	M:1..*	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
	on behalf of another care provider the clinically responsible person's information will appear in the author information. Note that the custodian, not the author, represents the organization from which the document originates and that is in charge of maintaining the document. Author information also describes the source system that composed the document. The Author MAY occur twice: once for human author information and once for source system information.			
3045		@typeCode	M:1..1	
3046		@contextControlCode	M:1..1	
3047	**Author Time** Date and time stamp when document was created.	time	M:1..1	TS
3048		assignedAuthor	M:1..1	
3049		@classCode	M:1..1	
3050	**Provider Unique Identifier** Identifier of individual that is clinically responsible for authoring the document.	id	M:1..1	II
3053		assignedPerson	M:1..1	
3054		@classCode	M:1..1	
3055		@determinerCode	M:1..1	
3056	**Authoring Person(s) Name**	name	R:1..1	PN
3057	**Authoring Person(s) Specialty**	code	O:0..1	CE

o) **SHALL** contain at least one [1..*] **author** [CONF:3044].
   i) **SHALL** contain exactly one [1..1] **@typeCode**="AUT" author (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:3045].
   ii) **SHALL** contain exactly one [1..1] **@contextControlCode**="OP" overriding propagating (CodeSystem: ContextControl 2.16.840.1.113883.5.1057) [CONF:3046].
   iii) **SHALL** contain exactly one [1..1] **time** [CONF:3047] such that it,
      (1) **SHALL** be precise to the day and **SHOULD** be precise to the minute; if precise to the minute, **value** **SHALL** include a time zone offset [CONF:3047.18].
   iv) **SHALL** contain exactly one [1..1] **assignedAuthor** [CONF:3048].
      (1) **SHALL** contain exactly one [1..1] **@classCode**="ASSIGNED" assigned (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:3049].
      (2) **SHALL** contain exactly one [1..1] **id** [CONF:3050] such that it,
         (a) **MAY** be a locally assigned identifier, if the **author** is a not a Provider [CONF:3050.13].
         (b) **MAY** contain a NullFlavor if the **id** is not known and the name is included [CONF:3050.14].
      (3) **SHALL** contain exactly one [1..1] **assignedPerson** [CONF:3053].
         (a) **SHALL** contain exactly one [1..1] **@classCode**="PSN" person (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3054].

(b) **SHALL** contain exactly one [1..1] **@determinerCode**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3055].

(c) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **name** [CONF:3056] such that it,

(i) **SHALL**, when present, conform to the Person Name (PN) pan-Canadian Data Type data type constraint template (2.16.840.1.113883.3.3068.10.5.3) [CONF:3056.5].

(4) **MAY** contain zero or one [0..1] **code**, which **SHOULD** be selected from ValueSet HealthcareProviderRoleType 2.16.840.1.113883.2.20.3.48 **DYNAMIC {CDAR2}** [CONF:3057].

3.2.4 Custodian Organization [custodian]

Table 16: Custodian Organization [custodian] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3059	**Custodian Organization** The Custodian represents the organization from which the document originates and that is in charge of maintaining the document. The custodian is the steward that is entrusted with the care of the document; every CDA document must have exactly one custodian. Because this specification is an exchange standard and may not represent the original form of the authenticated document, the custodian represents the steward of the original source document.	custodian	M:1..1	
3060		@typeCode	M:1..1	
3061		assignedCustodian	R:1..1	
3062		@classCode	M:1..1	
3063		representedCustodianOrganization	R:1..1	
3064		@classCode	M:1..1	
3065		@determinerCode	M:1..1	
3066	**Organization Identifier** Identifier of the custodian organization.	id	M:1..1	II

p) **SHALL** contain exactly one [1..1] **custodian** [CONF:3059].

i) **SHALL** contain exactly one [1..1] **@typeCode**="CST" custodian (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:3060].

ii) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **assignedCustodian** [CONF:3061].

(1) **SHALL** contain exactly one [1..1] **@classCode**="ASSIGNED" assigned (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:3062].

(2) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **representedCustodianOrganization** [CONF:3063].

(a) **SHALL** contain exactly one [1..1] **@classCode**="ORG" organization (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3064].

(b) **SHALL** contain exactly one [1..1] **@determinerCode**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3065].
(c) **SHALL** contain exactly one [1..1] **id** [CONF:3066].

3.2.5 Patient [recordTarget]

Table 17: Patient [recordTarget] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3070	**Patient** The Patient Demographics (Record Target) includes all the information regarding the patient. This may include patient identifiers, name, address, contact information, gender, birth date and location, marital status, religion, race, ethnic group, guardians, etc.	recordTarget	M:1..1	
3071		@typeCode	M:1..1	
3072		@contextControlCode	M:1..1	
3073		patientRole	M:1..1	
3074		@classCode	M:1..1	
3075	**Patient's Identifier (Alberta ULI)** The primary unique identifier for the patient.	id	M:1..1	II
3076	**Patient's Identifier** Other Patient's Identifiers, including out-of-provice health identifiers.	id	O:0..2	II
3078	**Patient's Telecommunication Information**	telecom	O:0..1	TEL
3079		patient	R:1..*	
3080	**Patient's Name**	name	R:1..1	PN
3081	**Patient's Administrative Gender**	administrativeGenderCode	R:1..1	CE
3082	**Patient's Birth Date/Time**	birthTime	R:1..1	TS

q) **SHALL** contain exactly one [1..1] **recordTarget** [CONF:3070].
i) **SHALL** contain exactly one [1..1] **@typeCode**="RCT" record target (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:3071].
ii) **SHALL** contain exactly one [1..1] **@contextControlCode**="OP" overriding propagating (CodeSystem: ContextControl 2.16.840.1.113883.5.1057) [CONF:3072].
iii) **SHALL** contain exactly one [1..1] **patientRole** [CONF:3073].
(1) **SHALL** contain exactly one [1..1] **@classCode**="PAT" patient (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:3074].
(2) **SHALL** contain exactly one [1..1] **id** [CONF:3075] such that it,
(a) **SHALL** contain an Alberta Unique Lifetime Identifier (ULI) for which the OID root is 2.16.840.1.113883.4.20 [CONF:3075.143].
(b) **SHALL** include the assigningAuthority applicable to each included **id** [CONF:3075.21].
(3) **MAY** contain zero to 2 [0..2] **id** [CONF:3076] such that each,
(a) **SHALL** include the assigningAuthority applicable to each included **id** [CONF:3076.21].
(4) **MAY** contain zero or one [0..1] **telecom** [CONF:3078] such that it,

(a) **SHALL**, when present, conform to the Telecom (TEL) pan-Canadian Data Type data type constraint template (`2.16.840.1.113883.3.3068.10.5.2`) [CONF:3078.5].

(5) **SHALL** contain one or more (or a `nullFlavor` value) [1..*] **`patient`** [CONF:3079].

(a) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`name`** [CONF:3080].

(b) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`administrativeGenderCode`**, which **SHALL** be selected from ValueSet AdministrativeGender 2.16.840.1.113883.1.11.1 **STATIC {CDAR2}** [CONF:3081].

(c) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`birthTime`** [CONF:3082] such that it,

(i) **SHALL** be precise to the month, and **SHOULD** be precise to the day [CONF:3082.22].

3.2.6 Authenticator Participant [authenticator]

Table 18: Authenticator Participant [authenticator] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3134	**Authenticator Participant** The Authenticator represents a participant who has attested to the accuracy of the document, but who does not have privileges to legally authenticate the document (see Legal Authenticator). An example would be a resident physician who sees a patient and dictates a note, then later signs it. A clinical document can have zero to many authenticators. While electronic signatures are not captured the authentications require that a document has been signed manually or electronically by the responsible individual. An authenticator has a required authenticator.time indicating the time of authentication, and a required authenticator.signatureCode, indicating that a signature has been obtained and is on file.	`authenticator`	O:0..1	
3135		`@typeCode`	M:1..1	
3136	**Authenticator Time** The date/time that the document was authenticated.	`time`	R:1..1	TS
3137	**Authenticator Signature Code**	`signatureCode`	R:1..1	CS
3138		`assignedEntity`	R:0..1	
3139		`@classCode`	M:1..1	
3140	**Authenticator Identifier**	`id`	M:1..1	II
3144		`assignedPerson`	R:1..1	
3145		`@classCode`	M:1..1	
3146		`@determinerCode`	M:1..1	
3147	**Authenticator Person Name**	`name`	M:1..1	PN

r) **MAY** contain zero or one [0..1] **`authenticator`** [CONF:3134].

i) **SHALL** contain exactly one [1..1] **`@typeCode`**="AUTHEN" authenticator (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:3135].

ii) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`time`** [CONF:3136].

iii) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`signatureCode`**, which **SHALL** be selected from ValueSet ParticipationSignature 2.16.840.1.113883.2.20.3.88 **STATIC {CDAR2}** [CONF:3137].

iv) **SHALL** contain zero or one if available [0..1] **`assignedEntity`** [CONF:3138].

(1) **SHALL** contain exactly one [1..1] **`@classCode`**="ASSIGNED" assigned (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:3139].

(2) **SHALL** contain exactly one [1..1] **`id`** [CONF:3140] such that it,

(a) **MAY** be a locally assigned identifier, if the **`author`** is a not a Provider [CONF:3140.13].

(b) **MAY** contain a `NullFlavor` if the **`id`** is not known and the `name` is included [CONF:3140.14].

(3) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`assignedPerson`** [CONF:3144].

(a) **SHALL** contain exactly one [1..1] **`@classCode`**="PSN" person (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3145].

(b) **SHALL** contain exactly one [1..1] **`@determinerCode`**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3146].

(c) **SHALL** contain exactly one [1..1] **`name`** [CONF:3147] such that it,

(i) **SHALL**, when present, conform to the Person Name (PN) pan-Canadian Data Type data type constraint template (`2.16.840.1.113883.3.3068.10.5.3`) [CONF:3147.5].

3.2.7 Data Enterer Participant [dataEnterer]

Table 19: Data Enterer Participant [dataEnterer] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3155	**Data Enterer Participant** The Data Enterer identifies the person who has transformed a dictated note into text such as a transcriptionist. In cases of a patient transfer or episodic document where the Medical Office Assistant (MOA) is responsible for preparing the chart or consolidating the information to be included the MOA should be identified as the data enterer. If the data enterer is different from the author, this information should be provided.	dataEnterer	O:0..1	
3156		@typeCode	M:1..1	
3157		@contextControlCode	M:1..1	
3158	**Data Enterer Time** The date/time that the data was entered.	time	R:0..1	TS
3159		assignedEntity	R:0..1	
3160		@classCode	M:1..1	
3161	**Data Enterer Identifier** Identifier of the healthcare provider participating in the encounter or a nullFlavor.	id	M:1..1	II
3165		assignedPerson	R:1..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3166		@classCode	M:1..1	
3167		@determinerCode	M:1..1	
3168	**Name**	name	M:1..1	PN

s) **MAY** contain zero or one [0..1] **dataEnterer** [CONF:3155].
   i) **SHALL** contain exactly one [1..1] **@typeCode**="ENT" enterer (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:3156].
   ii) **SHALL** contain exactly one [1..1] **@contextControlCode**="OP" overriding propagating (CodeSystem: ContextControl 2.16.840.1.113883.5.1057) [CONF:3157].
   iii) **SHALL** contain zero or one if available [0..1] **time** [CONF:3158].
   iv) **SHALL** contain zero or one if available [0..1] **assignedEntity** [CONF:3159].
      (1) **SHALL** contain exactly one [1..1] **@classCode**="ASSIGNED" assigned (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:3160].
      (2) **SHALL** contain exactly one [1..1] **id** [CONF:3161] such that it,
         (a) **MAY** be a locally assigned identifier, if the **author** is a not a Provider [CONF:3161.13].
         (b) **MAY** contain a nullFlavor if the **id** is not known and the name is included [CONF:3161.14].
      (3) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **assignedPerson** [CONF:3165].
         (a) **SHALL** contain exactly one [1..1] **@classCode**="PSN" person (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3166].
         (b) **SHALL** contain exactly one [1..1] **@determinerCode**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3167].
         (c) **SHALL** contain exactly one [1..1] **name** [CONF:3168] such that it,
            (i) **SHALL**, when present, conform to the Person Name (PN) pan-Canadian Data Type data type constraint template (2.16.840.1.113883.3.3068.10.5.3) [CONF:3168.5].

3.2.8 Parent Document [relatedDocument]

Table 20: Parent Document [relatedDocument] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3204	**Parent Document** This element provides a way for a document that represents an addendum to or a revision of an existing document (Parent Document) instance to reference that document.	relatedDocument	O:0..1	
3205	**Document Related Type** A code indicating the type of relationship between the document and the parent document. May include Append, Replace or Transform.	@typeCode	M:1..1	
3206		parentDocument	M:1..1	
3207		@classCode	M:1..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3208		@moodCode	M:1..1	
3209	**Parent Document Unique Identifier** The identifier of the document that this document is related to.	id	M:1..1	II
3210	**Parent Document Type** The type of the document that this document is related to.	code	M:1..1	CD
3211	**Parent Document Text** The description and link to the related document.	text	R:0..1	ED
3212	**Parent Document Set ID**	setId	O:0..1	II
3213	**Parent Document Version**	versionNumber	O:0..1	INT

t) **MAY** contain zero or one [0..1] **relatedDocument** [CONF:3204].
   i) **SHALL** contain exactly one [1..1] **@typeCode**, which **SHALL** be selected from ValueSet x_ActRelationshipDocument 2.16.840.1.113883.1.11.11610 **STATIC {CDAR2}** [CONF:3205].
   ii) **SHALL** contain exactly one [1..1] **parentDocument** [CONF:3206].
      (1) **SHALL** contain exactly one [1..1] **@classCode**="DOCCLIN" clinical document (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3207].
      (2) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3208].
      (3) **SHALL** contain exactly one [1..1] **id** [CONF:3209].
      (4) **SHALL** contain exactly one [1..1] **code**, which **SHOULD** be selected from ValueSet DocumentType 2.16.840.1.113883.1.11.10870 **DYNAMIC {CDAR2}** [CONF:3210].
      (5) **SHALL** contain zero or one if available [0..1] **text** [CONF:3211] such that it,
         (a) **MAY** contain **@mediaType** to indicate the MIME type of the related document; a related document **SHALL NOT** be embedded in ParentDocument/text [CONF:3211.9].
      (6) **MAY** contain zero or one [0..1] **setId** [CONF:3212] such that it,
         (a) **SHALL**, when present, contain **@root**=X where X is a GUID [CONF:3212.1].
         (b) **SHALL** be present when **versionNumber** is present [CONF:3212.2].
      (7) **MAY** contain zero or one [0..1] **versionNumber** [CONF:3213] such that it,
         (a) **SHALL**, when present, contain an integer representing the version of the document, with the initial version of 1, incrementing by one with each version of the document [CONF:3213.3].
         (b) **SHALL** be present when **setId** is present [CONF:3213.4].

3.2.9 Service Event [documentationOf]

Table 21: Service Event [documentationOf] Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3273	**Service Event** The Service Event provides information on the service that is the subject of the document. Depending on the document type, an instance may contain documentation	documentationOf	O:0..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
	of a specific service event and the related performers (for instance, a Procedure Note would document the specific procedure event). If a Service Event is included in the document, it must be equivalent to, or further specialize, the value inherent in the Document Type; it shall not conflict with the document type as such a conflict would constitute an ambiguous situation.			
3274		@typeCode	M:1..1	
3275		serviceEvent	R:1..1	
3276		@classCode	M:1..1	
3277		@moodCode	M:1..1	
3278	**Service Event Identifier**	id	R:1..1	II
3279	**Code** Code identifying the type of service event that is being documented. For example the type of surgical procedure, examination or service.	code	R:1..1	CE

u) **MAY** contain zero or one [0..1] **documentationOf** [CONF:3273].
   i) **SHALL** contain exactly one [1..1] **@typeCode**="DOC" documentation (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3274].
   ii) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **serviceEvent** [CONF:3275].
      (1) **SHALL** contain exactly one [1..1] **@classCode**, which **SHALL** be selected from ValueSet CDAHeaderActClass 2.16.840.1.113883.3.3068.10.8.8 **STATIC {CDAR2}** [CONF:3276].
      (2) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3277].
      (3) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **id** [CONF:3278].
      (4) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **code**, which **SHOULD** be selected from ValueSet Procedure 2.16.840.1.113883.3.3068.10.8.11 **DYNAMIC {CDAR2}** [CONF:3279].

The following XML example outlines how to use the Alberta Shared Health Record Header template:

```
NO EXAMPLE ASSIGNED
```

Figure 15: Alberta Shared Health Record Header entry example

4.0 DOCUMENT TEMPLATES

This chapter includes the Document Templates that describe the purpose and rules for constructing conformant instances of each of the in-scope documents included in this specification. Document templates include constraints on the CDA header and refer to Section Templates. The Document Types and Required/Optional Sections table lists the sections used by each document type.

Each Document Template contains the following information:

- Scope and intended use of the document type;
- Description and explanatory narrative;
- Template metadata (*e.g*. `templateId`, *etc*.);
- Header constraints: this includes a reference to the Alberta specific Clinical Document Header template and additional constraints specific to each document type; and
- Required and optional Section Templates.

4.1 ALBERTA EREFERRAL CLINICAL ATTACHMENT

`[ClinicalDocument: templateId 2.16.840.1.113883.3.163.99.4.1.1(closed)]`

The eReferral Clinical Attachment (eRef-CA) is a clinical document authored as part of the process of creating a Request for Service (RFS) within a Point of Service (POS) system such as an the Electronic Medical Record (EMR) systems typically found within primary health care settings. The eRef-CA was designed to be able to convey clinical information typically found in a patient's chart as well as answers to referral pathway specific questions. This type of document is intended to be attached to an RFS Create or RFS Update transaction and, **together with the data in that message transaction**, provides the information needed to process an RFS.

The AEDAMS architecture anticipates a referral life cycle that may see the replacement and augmentation of eRef-CA documents through RFS management transactions. It also anticipates the possibility that multiple eRef-CA instances could be attached to an RFS over time. For example, the situation may arise where a primary care provider issues an RFS creation transaction and attaches an instance of an eRef-CA document with applicable clinical data from his/her EMR. That provider might subsequently send updates and/or supplemental documents. It is also possible that further tests or investigations related to this RFS are then initiated through a triage function; these may cause additional eRef-CA instances to be attached to the RFS. A key consequence of this is the fact that a recipient of an RFS transaction (whether received through a notification-style push process or in response to an RFS query directed at the eReferral hub) should anticipate the possibility that the received RFS may have more than one eRef-CA document instance attached.

Please refer to the **Alberta eReferral Data and Messaging Standard** (AEDAMS) **Business Overview** document for background and overall usage context. In addition, the associated **Business Use Cases** and **Business Process Flow** documents provide detailed descriptions of the eReferral use cases and process flows relevant for use of this clinical document template.

Table 22: Template Containment for an Alberta eReferral Clinical Attachment

Template Name	Template Type	Template ID (OID)
Alberta eReferral Clinical Attachment	Document	2.16.840.1.113883.3.163.99.4.1.1
Pathway Specific Criteria [entries required]	Section	2.16.840.1.113883.3.163.99.4.2.1.1
Pathway Specific Criteria Observation	SectionEntry	2.16.840.1.113883.3.163.99.4.3.1
Demographics & Administrative Information	Section	2.16.840.1.113883.3.163.99.4.2.2
Demographics & Administrative Information [with entries]	Section	2.16.840.1.113883.3.163.99.4.2.2.1
Demographics & Administrative Information Observation	SectionEntry	2.16.840.1.113883.3.163.99.4.3.2
Appointments	Section	2.16.840.1.113883.3.163.99.4.2.3
Encounter History	Section	2.16.840.1.113883.3.163.99.4.2.4
Encounter History [with entries]	Section	2.16.840.1.113883.3.163.99.4.2.4.1
Encounter History Event	SectionEntry	2.16.840.1.113883.3.163.99.4.3.3
Attachment	Entry	2.16.840.1.113883.3.163.99.4.4.6
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Comment Observation	Entry	2.16.840.1.113883.3.163.99.4.4.3
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Provider Participation	Entry	2.16.840.1.113883.3.163.99.4.4.10
Reason Observation	Entry	2.16.840.1.113883.3.163.99.4.4.7
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Informant Participation	Entry	2.16.840.1.113883.3.163.99.4.4.16
Alerts & Advance Directives	Section	2.16.840.1.113883.3.163.99.4.2.5
Alerts & Advance Directives [with entries]	Section	2.16.840.1.113883.3.163.99.4.2.5.1
Alerts & Advance Directives Observation	SectionEntry	2.16.840.1.113883.3.163.99.4.3.4
Attachment	Entry	2.16.840.1.113883.3.163.99.4.4.6
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Comment Observation	Entry	2.16.840.1.113883.3.163.99.4.4.3
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Social History & Risk Factors	Section	2.16.840.1.113883.3.163.99.4.2.6
Social History & Risk Factors [with entries]	Section	2.16.840.1.113883.3.163.99.4.2.6.1
Social History & Risk Factor Observation	SectionEntry	2.16.840.1.113883.3.163.99.4.3.5
Care History	Section	2.16.840.1.113883.3.163.99.4.2.7
Care History [with entries]	Section	2.16.840.1.113883.3.163.99.4.2.7.1
Care History Event	SectionEntry	2.16.840.1.113883.3.163.99.4.3.6
Comment Observation	Entry	2.16.840.1.113883.3.163.99.4.4.3
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Outcome Observation	Entry	2.16.840.1.113883.3.163.99.4.4.15

Template Name	Template Type	Template ID (OID)
Attachment	Entry	2.16.840.1.113883.3.163.99.4.4.6
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Qualifier Observation	Entry	2.16.840.1.113883.3.163.99.4.4.12
Reason Observation	Entry	2.16.840.1.113883.3.163.99.4.4.7
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Informant Participation	Entry	2.16.840.1.113883.3.163.99.4.4.16
Medical History	Section	2.16.840.1.113883.3.163.99.4.2.8
Medical History [with entries]	Section	2.16.840.1.113883.3.163.99.4.2.8.1
Medical History Observation	SectionEntry	2.16.840.1.113883.3.163.99.4.3.7
Active Problems & Conditions	Section	2.16.840.1.113883.3.163.99.4.2.9
Active Problems & Conditions [with entries]	Section	2.16.840.1.113883.3.163.99.4.2.9.1
Problem & Condition Observation	SectionEntry	2.16.840.1.113883.3.163.99.4.3.8
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Comment Observation	Entry	2.16.840.1.113883.3.163.99.4.4.3
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Date Observation	Entry	2.16.840.1.113883.3.163.99.4.4.1
Secondary Code (Unbound)	Entry	2.16.840.1.113883.3.163.99.4.4.5
Unbound Observation	Entry	2.16.840.1.113883.3.163.99.4.4.2
Allergies	Section	2.16.840.1.113883.3.163.99.4.2.10
Allergies [with entries]	Section	2.16.840.1.113883.3.163.99.4.2.10.1
Allergy Observation	SectionEntry	2.16.840.1.113883.3.163.99.4.3.9
Comment Observation	Entry	2.16.840.1.113883.3.163.99.4.4.3
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Reaction Observation	Entry	2.16.840.1.113883.3.163.99.4.4.13
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Comment Observation	Entry	2.16.840.1.113883.3.163.99.4.4.3
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Informant Participation	Entry	2.16.840.1.113883.3.163.99.4.4.16
Severity Observation	Entry	2.16.840.1.113883.3.163.99.4.4.9
Severity Observation	Entry	2.16.840.1.113883.3.163.99.4.4.9
Care Plan	Section	2.16.840.1.113883.3.163.99.4.2.11
Care Plan [with entries]	Section	2.16.840.1.113883.3.163.99.4.2.11.1
Care Plan Event	SectionEntry	2.16.840.1.113883.3.163.99.4.3.10
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Comment Observation	Entry	2.16.840.1.113883.3.163.99.4.4.3
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Outcome Observation	Entry	2.16.840.1.113883.3.163.99.4.4.15
Attachment	Entry	2.16.840.1.113883.3.163.99.4.4.6
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Performer Participation	Entry	2.16.840.1.113883.3.163.99.4.4.11
Reason Observation	Entry	2.16.840.1.113883.3.163.99.4.4.7
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Informant Participation	Entry	2.16.840.1.113883.3.163.99.4.4.16
Family History	Section	2.16.840.1.113883.3.163.99.4.2.12
Immunizations	Section	2.16.840.1.113883.3.163.99.4.2.13

Template Name	Template Type	Template ID (OID)
Immunizations [with entries]	Section	2.16.840.1.113883.3.163.99.4.2.13.1
Immunization Observation	SectionEntry	2.16.840.1.113883.3.163.99.4.3.12
Laboratory Results & Reports	Section	2.16.840.1.113883.3.163.99.4.2.14
Laboratory Results & Reports [with entries]	Section	2.16.840.1.113883.3.163.99.4.2.14.1
Laboratory Observation	SectionEntry	2.16.840.1.113883.3.163.99.4.3.13
Attachment	Entry	2.16.840.1.113883.3.163.99.4.4.6
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Comment Observation	Entry	2.16.840.1.113883.3.163.99.4.4.3
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Performer Participation	Entry	2.16.840.1.113883.3.163.99.4.4.11
Medical Imaging Results & Reports	Section	2.16.840.1.113883.3.163.99.4.2.15
Medical Imaging Results & Reports [with entries]	Section	2.16.840.1.113883.3.163.99.4.2.15.1
Medical Imaging Result & Report Observation	SectionEntry	2.16.840.1.113883.3.163.99.4.3.14
Attachment	Entry	2.16.840.1.113883.3.163.99.4.4.6
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Comment Observation	Entry	2.16.840.1.113883.3.163.99.4.4.3
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Reason Observation	Entry	2.16.840.1.113883.3.163.99.4.4.7
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Informant Participation	Entry	2.16.840.1.113883.3.163.99.4.4.16
Medications	Section	2.16.840.1.113883.3.163.99.4.2.16
Medications [with entries]	Section	2.16.840.1.113883.3.163.99.4.2.16.1
Medication Activity	SectionEntry	2.16.840.1.113883.3.163.99.4.3.16
Comment Observation	Entry	2.16.840.1.113883.3.163.99.4.4.3
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Medication Identification	Entry	2.16.840.1.113883.3.163.99.4.4.18
Reason Observation	Entry	2.16.840.1.113883.3.163.99.4.4.7
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Informant Participation	Entry	2.16.840.1.113883.3.163.99.4.4.16
Unbound Observation	Entry	2.16.840.1.113883.3.163.99.4.4.2

Alberta eReferral Clinical Attachment Header Constraints

An Alberta eReferral Clinical Attachment **SHALL** conform to the Alberta eReferral Attachment Header Template subject to additional constraints as follows. Conformant documents:

1) **SHALL** contain exactly two [2..2] **`templateId`** elements such that it,
   a) **SHALL** contain exactly one [1..1] **`templateId/@root`**`="2.16.840.1.113883.3.163.99.4.1.1"` to declare conformance to the Alberta eReferral Clinical Attachment clinical document specification.
   b) **SHALL** contain exactly one [1..1] **`templateId/@root`**`="2.16.840.1.113883.3.163.99.4.7.3"` to declare conformance to the required header template.

Alberta eReferral Clinical Attachment Body Constraints

An Alberta eReferral Clinical Attachment contains both narrative sections and sections requiring coded clinical statements subject to the following constraints.

An Alberta eReferral Clinical Attachment (`ClinicalDocument`) element:

1) **SHALL** contain exactly one [1..1] **{CDAR2}** **`component`** [CONF:3310].
   a) **SHALL** contain exactly one [1..1] **`@typeCode`**="`COMP`" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3311].
   b) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:3312].
   c) **SHALL** contain exactly one [1..1] **`structuredBody`** [CONF:3313].
      i) **SHALL** contain exactly one [1..1] **`@classCode`**="`DOCBODY`" document body (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3314].
      ii) **SHALL** contain exactly one [1..1] **`@moodCode`**="`EVN`" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3315].
      iii) **MAY** contain zero or one [0..1] **{CDAR2}** **`confidentialityCode`**, which **SHALL** be selected from ValueSet x_BasicConfidentialityKind 2.16.840.1.113883.2.20.3.139 **STATIC** [CONF:3316].
      iv) **MAY** contain zero or one [0..1] **{CDAR2}** **`languageCode`**, which **SHALL** be selected from ValueSet HumanLanguage 2.16.840.1.113883.1.11.11526 **DYNAMIC {CDAR2}** [CONF:3317].
      v) **SHALL** contain at least one [1..*] **`component`** [CONF:3318].
         (1) **SHALL** contain exactly one [1..1] **`@typeCode`**="`DRIV`" derived (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3319].
         (2) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:3320].

The following XML example outlines how to use the Alberta eReferral Clinical Attachment template:

```
<ClinicalDocument classCode="DOCCLIN" moodCode="EVN">
    <typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>
    <!-- Conforms to the Alberta eReferral Attachment Header specification -->
    <templateId root="2.16.840.1.113883.3.163.99.4.7.2"/>
    <!-- Conforms to the Alberta eReferral Attachment Document  specification -->
    <templateId root="2.16.840.1.113883.3.163.99.4.1.1"/>
    …
    <component typeCode=”COMP” contextConductionInd=”true”>
        <structuredBody classCode-“DOCBODY” moodCode=”EVN”>
            <confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25"/>
            <languageCode code="en-CA" displayName="English, Canada"
                codeSystem="2.16.840.1.113883.1.11.11526" codeSystemName="Internet
Society
                Language"/>
            <component typeCode=”COMP” contextConductionInd=”true”>
                <section>
                    . . .
                </section>
                <section>
                    . . .
                </section>
            </component>
        </structuredBody>
    </component>
</ClinicalDocument>
```

Figure 16: Alberta eReferral Clinical Attachment entry example

The set of `StructuredBody/component` elements **SHALL** conform to the following constraints:

1) **SHALL** include one Pathway Specific Criteria section, such that **`component/section`**,
   a) **SHALL** contain exactly one [1..1] Pathway Specific Criteria [entries required] (`templateId: 2.16.840.1.113883.3.163.99.4.2.1.1`) [CONF:SEC- 163.1].
2) **MAY** include one Demographics & Administrative Information section, such that **`component/section`**,
   a) **MAY** contain zero or one [0..1] Demographics & Administrative Information (`templateId: 2.16.840.1.113883.3.163.99.4.2.2`), or **SHOULD** contain exactly one [1..1] Demographics & Administrative Information [with entries] (`templateId: 2.16.840.1.113883.3.163.99.4.2.2.1`) [CONF:SEC- 164.1].
3) **MAY** include one Appointments section, such that **`component/section`**,
   a) **SHALL** contain exactly one [1..1] Appointments (`templateId: 2.16.840.1.113883.3.163.99.4.2.3`) [CONF:SEC- 165.1].
4) **MAY** include one Encounter History section, such that **`component/section`**,
   a) **MAY** contain zero or one [0..1] Encounter History (`templateId: 2.16.840.1.113883.3.163.99.4.2.4`), or **SHOULD** contain exactly one [1..1] Encounter History [with entries] (`templateId: 2.16.840.1.113883.3.163.99.4.2.4.1`) [CONF:SEC- 166.1].
5) **SHOULD** include one Alerts & Advance Directives section, such that **`component/section`**,
   a) **MAY** contain zero or one [0..1] Alerts & Advance Directives (`templateId: 2.16.840.1.113883.3.163.99.4.2.5`), or **SHOULD** contain exactly one [1..1] Alerts & Advance Directives [with entries] (`templateId: 2.16.840.1.113883.3.163.99.4.2.5.1`) [CONF:SEC- 167.1].
6) **MAY** include one Social History & Risk Factors section, such that **`component/section`**,
   a) **MAY** contain zero or one [0..1] Social History & Risk Factors (`templateId: 2.16.840.1.113883.3.163.99.4.2.6`), or **SHOULD** contain exactly one [1..1] Social History & Risk Factors [with entries] (`templateId: 2.16.840.1.113883.3.163.99.4.2.6.1`) [CONF:SEC- 168.1].
7) **SHOULD** include one Care History section, such that **`component/section`**,
   a) **MAY** contain zero or one [0..1] Care History (`templateId: 2.16.840.1.113883.3.163.99.4.2.7`), or **SHOULD** contain exactly one [1..1] Care History [with entries] (`templateId: 2.16.840.1.113883.3.163.99.4.2.7.1`) [CONF:SEC- 169.1].
8) **SHOULD** include one Medical History section, such that **`component/section`**,
   a) **MAY** contain zero or one [0..1] Medical History (`templateId: 2.16.840.1.113883.3.163.99.4.2.8`), or **SHOULD** contain exactly one [1..1] Medical History [with entries] (`templateId: 2.16.840.1.113883.3.163.99.4.2.8.1`) [CONF:SEC- 170.1].
9) **SHOULD** include one Active Problems & Conditions section, such that **`component/section`**,
   a) **MAY** contain zero or one [0..1] Active Problems & Conditions (`templateId: 2.16.840.1.113883.3.163.99.4.2.9`), or **SHOULD** contain exactly one [1..1] Active Problems & Conditions [with entries] (`templateId: 2.16.840.1.113883.3.163.99.4.2.9.1`) [CONF:SEC- 171.1].
10) **SHALL** include one Allergies section, such that **`component/section`**,
    a) **MAY** contain zero or one [0..1] Allergies (`templateId: 2.16.840.1.113883.3.163.99.4.2.10`), or **SHOULD** contain exactly one [1..1] Allergies [with entries] (`templateId: 2.16.840.1.113883.3.163.99.4.2.10.1`) [CONF:SEC- 172.1].

11) **MAY** include one Care Plan section, such that **`component/section`**,
    a) **MAY** contain zero or one [0..1] Care Plan (`templateId: 2.16.840.1.113883.3.163.99.4.2.11`), or **SHOULD** contain exactly one [1..1] Care Plan [with entries] (`templateId: 2.16.840.1.113883.3.163.99.4.2.11.1`) [CONF:SEC-173.1].
12) **MAY** include one Family History section, such that **`component/section`**,
    a) **SHALL** contain exactly one [1..1] Family History (`templateId: 2.16.840.1.113883.3.163.99.4.2.12`) [CONF:SEC- 174.1].
13) **MAY** include one Immunizations section, such that **`component/section`**,
    a) **MAY** contain zero or one [0..1] Immunizations (`templateId: 2.16.840.1.113883.3.163.99.4.2.13`), or **SHOULD** contain exactly one [1..1] Immunizations [with entries] (`templateId: 2.16.840.1.113883.3.163.99.4.2.13.1`) [CONF:SEC- 175.1].
14) **MAY** include one Laboratory Results & Reports section, such that **`component/section`**,
    a) **MAY** contain zero or one [0..1] Laboratory Results & Reports (`templateId: 2.16.840.1.113883.3.163.99.4.2.14`), or **SHOULD** contain exactly one [1..1] Laboratory Results & Reports [with entries] (`templateId: 2.16.840.1.113883.3.163.99.4.2.14.1`) [CONF:SEC- 176.1].
15) **MAY** include one Medical Imaging Results & Reports section, such that **`component/section`**,
    a) **MAY** contain zero or one [0..1] Medical Imaging Results & Reports (`templateId: 2.16.840.1.113883.3.163.99.4.2.15`), or **SHOULD** contain exactly one [1..1] Medical Imaging Results & Reports [with entries] (`templateId: 2.16.840.1.113883.3.163.99.4.2.15.1`) [CONF:SEC- 177.1].
16) **SHOULD** include one Medications section, such that **`component/section`**,
    a) **MAY** contain zero or one [0..1] Medications (`templateId: 2.16.840.1.113883.3.163.99.4.2.16`), or **SHOULD** contain exactly one [1..1] Medications [with entries] (`templateId: 2.16.840.1.113883.3.163.99.4.2.16.1`) [CONF:SEC-178.1].

4.2 ALBERTA LABORATORY REPORT

`[ClinicalDocument: templateId 2.16.840.1.113883.3.163.99.4.1.2(closed)]`

The Laboratory Report is a clinical document used to convey detailed laboratory results for a variety of laboratory disciplines including General Laboratory, Blood Bank, Microbiology and Anatomical Pathology.

General Lab

For purposes of this specification, General Lab covers tests more familiar to the general public; such as blood cell counts, coagulation studies, urinalysis, blood glucose level determinations. Its subsections include chemistry, hematology, immunology, and urinalysis, to name a few. Please refer to Table 151 LaboratorySpecialtyCodes for a full list of lab tests included.

Microbiology

Microbiology is the study of microscopic organisms, either unicellular (single cell), multicellular (cell colony), or acellular (lacking cells). Microbiology encompasses numerous sub-disciplines including virology, mycology, parasitology, and bacteriology.

Blood Bank

Blood bank-related tests refer to the blood typing and screening of blood products for use in future transfusions.

Anatomical Pathology

Anatomical pathology is a medical specialty that is concerned with the diagnosis of disease based on the gross, microscopic, chemical, immunologic and molecular examination of organs, tissues, and rarely whole bodies (autopsy). Sub-disciplines in scope of this specification include surgical pathology and cytopathology.

The Laboratory Report may be replaced when a laboratory result is corrected or cancelled or when a preliminary result is to be replaced by a final result. Please refer to the ***Lab Report Specification Business Overview Document*** for the details pertaining to these scenarios as well as overall usage context.

Below is a depiction of the structure of the CDA templates used for the Laboratory Report.

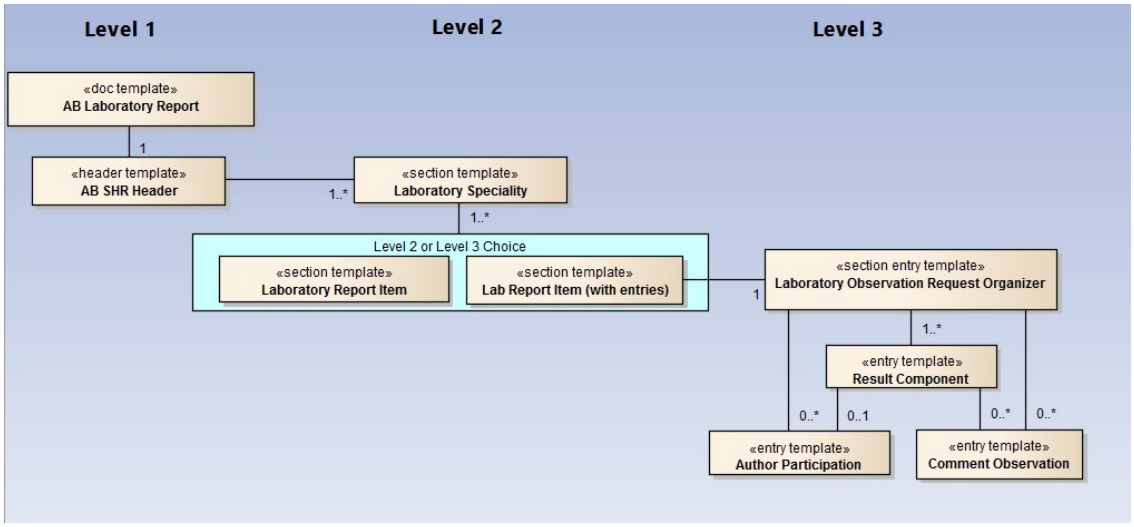


Table 23: Template Containment for an Alberta Laboratory Report

Template Name	Template Type	Template ID (OID)
Alberta Laboratory Report	Document	2.16.840.1.113883.3.163.99.4.1.2
Laboratory Specialty	Section	2.16.840.1.113883.3.163.99.4.2.17
Laboratory Report Item	SubSection	2.16.840.1.113883.3.163.99.4.2.18
Laboratory Report Item [with entries]	SubSection	2.16.840.1.113883.3.163.99.4.2.18.1
Laboratory Observation Request Organizer	SectionEntry	2.16.840.1.113883.3.163.99.4.3.17
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Comment Observation	Entry	2.16.840.1.113883.3.163.99.4.4.3
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Result Component	Entry	2.16.840.1.113883.3.163.99.4.4.8
Attachment	Entry	2.16.840.1.113883.3.163.99.4.4.6
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Comment Observation	Entry	2.16.840.1.113883.3.163.99.4.4.3
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Performer Participation	Entry	2.16.840.1.113883.3.163.99.4.4.11
Result Organizer	Entry	2.16.840.1.113883.3.163.99.4.4.14
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Comment Observation	Entry	2.16.840.1.113883.3.163.99.4.4.3
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Result Component	Entry	2.16.840.1.113883.3.163.99.4.4.8
Attachment	Entry	2.16.840.1.113883.3.163.99.4.4.6
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Comment Observation	Entry	2.16.840.1.113883.3.163.99.4.4.3
Author Participation	Entry	2.16.840.1.113883.3.163.99.4.4.4
Performer Participation	Entry	2.16.840.1.113883.3.163.99.4.4.11

Alberta Laboratory Report Header Constraints

An Alberta Laboratory Report **SHALL** conform to the Alberta Shared Health Record Header Template subject to additional constraints as follows. Conformant documents:

1) **SHALL** contain exactly two [2..2] **`templateId`** elements such that it,
   a) **SHALL** contain exactly one [1..1] **`templateId/@root`**`="2.16.840.1.113883.3.163.99.4.1.2"` to declare conformance to the Alberta Laboratory Report clinical document specification.
   b) **SHALL** contain exactly one [1..1] **`templateId/@root`**`="2.16.840.1.113883.3.163.99.4.7.1"` to declare conformance to the required header template.

Alberta Laboratory Report Body Constraints

An Alberta Laboratory Report contains both narrative sections and sections requiring coded clinical statements subject to the following constraints.

The following XML example outlines how to use the Alberta Laboratory Report template:

```
<ClinicalDocument classCode="DOCCLIN" moodCode="EVN"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="urn:hl7-org:v3 Schemas/CDA.xsd" xmlns="urn:hl7-org:v3"
    xmlns:hl7="urn:hl7-org:v3" xmlns:xs="http://www.w3.org/2001/XMLSchema">
    <realmCode code="CA-AB"/>
    <typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>
    <!-- Conforms to the Alberta Shared Health Record Header specification -->
    <templateId root="2.16.840.1.113883.3.163.99.4.7.1"/>
    <!-- Conforms to the Alberta Laboratory Report CDA specification -->
    <templateId root="2.16.840.1.113883.3.163.99.4.1.2"/>
    <id root="607d59b6-28f4-4890-9b49-2c5de6f851d2"/>
    <code code="11502-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Laboratory Report"/>
    <title>Laboratory Report</title>
    <effectiveTime value="20140324"/>
    <confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25"
codeSystemName="Confidentiality"/>
    <languageCode code="en-CA"/>
    <!-- Record Target M1..1 -->
    <recordTarget typeCode="RCT" contextControlCode="OP">
        <patientRole classCode="PAT">
            <id root="2.16.840.1.113883.4.20" extension="123456789"
assigningAuthorityName="AB-ULI"/>
            <patient>
                <name>
                    <prefix>Mr.</prefix>
                    <given>John</given>
                    <given>E.</given>
                    <family>Doe</family>
                    <suffix>Jr.</suffix>
                </name>
                <administrativeGenderCode code="M" codeSystem="2.16.840.1.113883.5.1"
codeSystemName="AdministrativeGender" displayName="Male"/>
                <birthTime value="19580130"/>
            </patient>
        </patientRole>
    </recordTarget>
    <!-- Author M1..* -->
    <author typeCode="AUT" contextControlCode="OP">
        <time value="20140324"/>
        <assignedAuthor classCode="ASSIGNED">
            <id extension="0111" root="2.16.840.1.113883.11.13130"/>
            <code code="MD" codeSystem="2.16.840.1.113883.5.111"
codeSystemName="RoleCode" displayName="Medical Doctor"/>
            <assignedPerson classCode="PSN" determinerCode="INSTANCE">
                <name>
                    <prefix>Dr.</prefix>
                    <given>G</given>
                    <family>Practitioner</family>
                </name>
            </assignedPerson>
        </assignedAuthor>
    </author>
    <!-- Custodian M1..1 -->
    <custodian typeCode="CST">
        <assignedCustodian classCode="ASSIGNED">
            <representedCustodianOrganization classCode="ORG"
determinerCode="INSTANCE">
                <id extension="456789" root="2.16.840.1.113883.3.1344"/>
            </representedCustodianOrganization>
```

```
        </assignedCustodian>
    </custodian>
    <!--Information Recipient R0..*-->
    <informationRecipient typeCode="PRCP">
        <intendedRecipient classCode="ASSIGNED">
            <informationRecipient classCode="PSN" determinerCode="INSTANCE">
                <name>
                    <prefix>Dr.</prefix>
                    <given>S</given>
                    <family>Pecialist</family>
                    <suffix>Sr.</suffix>
                </name>
            </informationRecipient>
            <receivedOrganization classCode="ORG" determinerCode="INSTANCE">
                <id extension="12234" root="2.16.840.1.113883.3.1344"/>
                <name>Specialis Office Clinic</name>
            </receivedOrganization>
        </intendedRecipient>
    </informationRecipient>

    <!-- Lab Report Body -->
    <component typeCode="COMP" contextConductionInd="true">
        <structuredBody classCode="DOCBODY" moodCode="EVN">
            <templateId root="2.16.840.1.113883.3.163.99.4.7.1.2"/>
            <confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25"/>
            <component typeCode="COMP" contextConductionInd="true">
                <section classCode="DOCSECT" moodCode="EVN" >
                    <!--Laboratory Specialty L3 with the Laboratory Report Item (with
entries) L3-->
                    <templateId root='2.16.840.1.113883.3.163.99.4.2.17'/>
                    <code code="18723-7" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="HEMATOLOGY"/>
                    <title>HEMATOLOGY</title>
                    <component contextConductionInd="true" typeCode="COMP">
                        <!-- Laboratory Report Item [with entries] [AH] -->
                        <section classCode="DOCSECT" moodCode="EVN">
                            <templateId root="2.16.840.1.113883.3.163.99.4.2.14.1"/>
                            <code code="58410-2"
codeSystem="2.16.840.1.113883.3.3068.10.8.1" codeSystemName="pCLOCD"
displayName="Complete Blood Count">
                            <translation code="CBC" codeSystem="2.1.1.1"
codeSystemName="Local" displayName="Complete Blood Count">
                                <originalText>Complete Blood Count</originalText>
                            </translation>
                            </code>
                            <title>Complete Blood Count [with entries]</title>
                            <text>
                                <table border="1" width="100%">
                                    <tbody>
                                        <tr>
                                            <td>Hemoglobin A (120-150)</td>
                                            <td>113.0</td>
                                            <td>g/L</td>
                                        </tr>
                                        <tr>
                                            <td>WBC (4.0-10.0)</td>
                                            <td>11.0</td>
                                            <td>giga/L</td>
                                        </tr>
                                        <tr>
                                            <td>RBC (3.8-4.8)</td>
                                            <td>3.25</td>
```

```
                                        <td>tera/L</td>
                                    </tr>
                                </tbody>
                            </table>
                        </text>
                        <entry typeCode="DRIV" contextConductionInd="true">
                            <organizer classCode="BATTERY" moodCode="RQO">
                                <!-- Laboratory Observation Request Organizer -->
                                <templateId
root='2.16.840.1.113883.3.163.99.4.2.17'/>
                                <id root="TBD" extension="AN123"/>
                                <code code="58410-2"
codeSystem="2.16.840.1.113883.3.3068.10.8.1" codeSystemName="pCLOCD"
displayName="CBC">
                                    <translation code="CBC" codeSystem="2.1.1.1"
codeSystemName="Local" displayName="Complete Blood Count">
                                        <originalText>Complete Blood
Count</originalText>
                                    </translation>
                                </code>
                                <statusCode code="completed"/>
                                <!-- Ordering Provider -->
                                <author typeCode="AUT" contextControlCode="OP">
                                    <time value="20140324"/>
                                    <assignedAuthor classCode="ASSIGNED">
                                        <id extension="022222"
root="2.16.840.1.113883.11.13130"/>
                                        <code code="MD"
codeSystem="2.16.840.1.113883.5.111" codeSystemName="RoleCode" displayName="Medical
Doctor"/>
                                        <assignedPerson classCode="PSN"
determinerCode="INSTANCE">
                                            <name>
                                                <prefix>Dr.</prefix>
                                                <given>L</given>
                                                <family>Provider</family>
                                            </name>
                                        </assignedPerson>
                                    </assignedAuthor>
                                </author>
                                <!--Comment Observation-->
                                <component typeCode="COMP">
                                    <observation classCode="OBS" moodCode="EVN">
                                        <templateId
root="2.16.840.1.113883.3.1818.10.4.3"/>
                                        <code code="48767-8"
codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Annotation
Comment"/>
                                        <value xsi:type="ST">Comments to LAB:
Pre-Dialysis. Fax to Satellite Unit.</value>
                                    </observation>
                                </component>
                                <component typeCode="COMP">
                                    <observation classCode="OBS" moodCode="EVN">
                                        <!-- Laboratory Component OBX #1 -->
                                        <templateId
root="2.16.840.1.113883.3.163.99.4.4.8"/>
                                        <id root="TBD" extension="AN123"/>
                                        <code code="718-7"
codeSystem="2.16.840.1.113883.3.3068.10.8.1" codeSystemName="pCLOCD"
displayName="WBC">
```

```
                                                <translation code="WBC"
codeSystem="2.1.1.1" codeSystemName="Local" displayName="WBC Count">
                                                    <originalText>WBC
Count</originalText>
                                                </translation>
                                            </code>
                                            <text>Hemoglobin A</text>
                                            <statusCode code="completed"/>
                                            <effectiveTime value="20140204"/>
                                            <value xsi:type="PQ" value="113"
unit="g/L"/>
                                            <interpretationCode code="A"/>
                                            <performer typeCode="PRF">
                                                <assignedEntity classCode="ASSIGNED">
                                                    <id root="TBD"
extension="1234567"/>
                                                </assignedEntity>
                                            </performer>
                                            <!-- Result Reference Range -->
                                            <referenceRange typeCode="REFV">
                                                <observationRange moodCode="EVN.CRT"
classCode="OBS">
                                                    <text>120-150 g/L</text>
                                                    <value
                                                        xsi:type="IVL_PQ">
                                                        <low
                                                            value="120"
                                                            unit="g/L"/>
                                                        <high
                                                            value="150"
                                                            unit="g/L"/>
                                                    </value>
                                                </observationRange>
                                            </referenceRange>
                                        </observation>
                                    </component>
                                    <component typeCode="COMP">
                                        <observation classCode="OBS" moodCode="EVN">
                                            <!-- Laboratory Component OBX #2 -->
                                            <templateId
root="2.16.840.1.113883.3.163.99.4.4.8"/>
                                            <id root="TBD" extension="AN123"/>
                                            <code code="6690-2"
codeSystem="2.16.840.1.113883.3.3068.10.8.1" codeSystemName="pCLOCD"
displayName="WBC">
                                                <translation code="WBC"
codeSystem="2.1.1.1" codeSystemName="Local" displayName="White Blood Count">
                                                    <originalText>White Blood
Count</originalText>
                                                </translation>
                                            </code>
                                            <text>WBC</text>
                                            <statusCode code="completed"/>
                                            <effectiveTime value="20140204"/>
                                            <value xsi:type="PQ" value="11.0"
unit="giga/L"/>
                                            <interpretationCode code="A"/>
                                            <performer typeCode="PRF">
                                                 <assignedEntity classCode="ASSIGNED">
                                                     <id root="TBD"
extension="1234567"/>
                                                 </assignedEntity>
```

```
                                        </performer>
                                        <!-- Result Reference Range -->
                                        <referenceRange typeCode="REFV">
                                            <observationRange moodCode="EVN.CRT"
classCode="OBS">
                                                <text>4.0 - 10.0 giga/L</text>
                                                <value
                                                    xsi:type="ST 4.0-10.0 giga/L
                                                </value>
                                            </observationRange>
                                        </referenceRange>
                                    </observation>
                                </component>
                                <component typeCode="COMP">
                                    <observation classCode="OBS" moodCode="EVN">
                                        <!-- Laboratory Component OBX #3 -->
                                        <templateId
root="2.16.840.1.113883.3.163.99.4.4.8"/>
                                        <id root="TBD" extension="AN123"/>
                                        <code code="789-8"
codeSystem="2.16.840.1.113883.3.3068.10.8.1" codeSystemName="pCLOCD"
displayName="RBC">
                                            <translation code="RBC"
codeSystem="2.1.1.1" codeSystemName="Local" displayName="Red Blood Count">
                                                <originalText>Red Blood
Count</originalText>
                                            </translation>
                                        </code>
                                        <text>RBC</text>
                                        <statusCode code="completed"/>
                                        <effectiveTime value="20140204"/>
                                        <value xsi:type="PQ" value="3.25"
unit="tera/L"/>
                                            <interpretationCode code="A"/>
                                            <performer typeCode="PRF">
                                                <assignedEntity
classCode="ASSIGNED">
                                                    <id root="TBD"
extension="1234567"/>
                                                </assignedEntity>
                                            </performer>
                                            <!-- Result Reference Range -->
                                            <referenceRange typeCode="REFV">
                                                <observationRange
moodCode="EVN.CRT" classCode="OBS">
                                                    <text>3.8 - 4.8 tera/L</text>
                                                    <value
                                                        xsi:type="IVL_PQ">
                                                        <low
                                                            value="3.8"
                                                            unit="tera/L"/>
                                                        <high
                                                            value="4.8"
                                                            unit="tera/L"/>
                                                    </value>
                                                </observationRange>
                                            </referenceRange>
                                    </observation>
                                </component>
                            </organizer>
                        </entry>
                    </section>
```

```
                    </component>
                </section>
            </component>
        </structuredBody>
    </component>
</ClinicalDocument>
```

Figure 17: Alberta Laboratory Report entry example

The set of `StructuredBody/component` elements **SHALL** conform to the following constraints:

1) **SHALL** include one Laboratory Specialty section, such that **`component/section`**,
   a) **SHALL** contain at least one [1..*] Laboratory Specialty (`templateId: 2.16.840.1.113883.3.163.99.4.2.17`) [CONF:SEC- 207.1].
      i) **SHALL** include one Laboratory Report Item section, such that **`component/section`**,
         (1) **SHOULD** contain at least one [1..*] Laboratory Report Item (`templateId: 2.16.840.1.113883.3.163.99.4.2.18`), or **SHOULD** contain at least one [1..*] Laboratory Report Item [with entries] (`templateId: 2.16.840.1.113883.3.163.99.4.2.18.1`) [CONF:SEC- 208.1].

5.0 SECTION TEMPLATES

This chapter contains the Section Templates referenced by one or more of the Document Templates of these specifications. These templates describe the purpose of each section and the section-level constraints.

Section Templates are always included in a document.

Each Section Templates contains the following:

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

Section Templates may also contain the following:

- Other Design Considerations

SECTION CODE

The `code` element within the section classifies the section for machine processing. This code is drawn from the LOINC Document Sections vocabulary and is constrained to those codes identified in the Implementation Guide. Whilst it is possible to include additional sections in the document using other LOINC Document Section codes, there is no requirement that a receiving system will be able to process the additional section.

SECTION TITLE

The `title` element within the section provides the human readable heading for the section and is the section heading that the provider would normally expect to see as part of their clinical practice. The title should conform to the Section Title provided in the Implementation Guide; however, there is no requirement that it be exactly the same as the titles provided in the Implementation Guide. For example, the “Prescriptions & Medications Section” title may be modified to “Medication List”; as long as the content and intent of the section remains unchanged.

NARRATIVE TEXT

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

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

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

As for all CDA documents—even when a report consisting entirely of structured entries is transformed into CDA—the encoding application must ensure that the authenticated content (narrative plus multimedia) is a faithful and complete rendering of the clinical content of the structured source data. As a general guideline, a generated narrative block should include the same human readable content that would be available to users viewing that content in the originating system. Although content formatting in the narrative block need not be identical to that in the originating system, the narrative block should use elements from the CDA narrative block schema to provide sufficient formatting to support human readability when rendered according to the rules defined in Section Narrative Block (§ 4.3.5) of the CDA R2 specification.

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

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

ENTRIES NOT SUPPORTED AND ENTRIES SUPPORTED

Many Section Templates will reference two Section-Entry Templates. The Section-Entry Templates have two flavors; Entries Supported and Entries Not Supported.

The Entries Not Supported Section Entry Templates are constrained to CDA Level-2 support only. When one of these templates is used the content of the section is included in the narrative text (`text`) element as human readable. Entries Supported Section-Entry Templates have an entry element that links to the Entry Templates containing CDA Level-3 Discrete data.

5.1 ACTIVE PROBLEMS & CONDITIONS [11450-4]

This section provides details on the current conditions or diagnosis that the patient may have that are relevant to the Request for Service and may have an effect on the treatment of the patient.

Active Problems & Conditions Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.9(closed)]`

Table 24: Active Problems & Conditions Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	N/A

An Active Problems & Conditions (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3321].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3322].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3323] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.9"` [CONF:3323.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="11450-4"` Problem (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3324].
5) **SHALL** contain exactly one [1..1] **`title`**`="Active Problems & Conditions"` [CONF:3325] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3325.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3326].

Section template with Coded Entries Optional (Level 2 or 3)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.9.1(closed)]`

Table 25: Active Problems & Conditions [with entries] Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	Problem & Condition Observation

An Active Problems & Conditions [with entries] (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3327].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3328].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3329] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.9.1"` [CONF:3329.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="11450-4"` Problem (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3330].
5) **SHALL** contain exactly one [1..1] **`title`**`="Active Problems & Conditions [with entries]"` [CONF:3331] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3331.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3332].

7) **MAY** contain zero or more [0..*] **`entry`** [CONF:3333] such that each,
   a) **SHALL** contain exactly one [1..1] Problem & Condition Observation (`2.16.840.1.113883.3.163.99.4.3.8`) [CONF:3333.1].

The following XML example outlines how to use the Active Problems & Conditions [with entries] template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.163.99.4.2.9.1"/>
        <code code="11450-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Problems list Reported"/>
        <title>Active Problems and Conditions - Problem List (with entries)</title>
        <text>
            Essential hypertension, 59621000 (SNOMED CT)
            2001-08-14
            Hypertension
            Dr. G. Practitioner
            2001-08-15
            BP generally a bit high despite meds.
            Symptomatic PAF with multiple ER visits, Sick sinus syndrome, eventually
resulting in syncope and
            pacemaker insertion.  Unstable angina, admitted and had drug-eluting RCA
stent.
        </text>
        <entry typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.3.8"/>
            <!-- Problem & Condition Observation -->
           ....
        </entry>
    </section>
</component>
```

Figure 18: Active Problems & Conditions [with entries] entry example

5.2 ALERTS & ADVANCE DIRECTIVES [42348-3]

This section provides information regarding any alerts or advance directives for the patient.

Alerts are used to communicate some condition about which a care provider should be aware that is relevant to the Request for Service and may have an effect on the treatment of the patient.

Advance Directives may include living wills, healthcare proxies as well as CPR and resuscitation status. This section may include scanned images of the relevant legal documents.

In the case of the eReferral, the existence of an advance directive would also be considered a distinct alert (it would be entered in ‘alert type’).

This section should also be used to mention that important information, for example medication information, has been withheld.

Alerts & Advance Directives Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.5(closed)]`

Table 26: Alerts & Advance Directives Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	N/A

An Alerts & Advance Directives (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3444].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3445].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3446] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.5"` [CONF:3446.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="42348-3"` Advanced Directives (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3447].
5) **SHALL** contain exactly one [1..1] **`title`**`="Alerts & Advance Directives"` [CONF:3448] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3448.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3449].

Section template with Coded Entries Optional (Level 2 or 3)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.5.1(closed)]`

Table 27: Alerts & Advance Directives [with entries] Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	Alerts & Advance Directives Observation

An Alerts & Advance Directives [with entries] (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3450].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3451].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3452] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.5.1"` [CONF:3452.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="42348-3"` Advanced Directives (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3453].
5) **SHALL** contain exactly one [1..1] **`title`**`="Alerts & Advance Directives [with entries]"` [CONF:3454] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3454.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3455].

7) **MAY** contain zero or more [0..*] **`entry`** [CONF:3456] such that each,
   a) **SHALL** contain exactly one [1..1] Alerts & Advance Directives Observation (`2.16.840.1.113883.3.163.99.4.3.4`) [CONF:3456.1].

The following XML example outlines how to use the Alerts & Advance Directives [with entries] template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.163.99.4.2.5.1"/>
        <code code="42348-3" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Advance Directives"/>
        <title>Alerts and Advance Directives Section [with entries]</title>
        <text>
            <table border='1'>
                <thead>
                    <tr><th>Documentation</th><th>Contact</th>
                        <th>Effective Date</th><th>Comments</th>
                    </tr>
                </thead>
                <tbody>
                    <tr><td>Living Will</td><td>Obtain from her Husband</td>
                        <td>1994</td><td>Copy on file</td>
                    </tr>
                    <tr><td>Power of Attorney</td><td>Obtain from her Husband</td>
                        <td>1994</td><td></td>
                    </tr>
                    <tr><td>Healthcare Proxy</td><td>Obtain from her Husband</td>
                        <td>1994</td><td></td>
                    </tr>
                    <tr><td>Organ Donor</td>
                        <td>BC Registry of Motor Vehicles</td><td>1/27/2004</td>
                        <td>Registered Organ Donor</td>
                    </tr>
                </tbody>
            </table>
        </text>
        <entry typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.3.4"/>
            <!-- Advance Directives Observation -->
        </entry>
    </section>
</component>
```

Figure 19: Alerts & Advance Directives [with entries] entry example

5.3 ALLERGIES [48765-2]

This section lists and describes any medication allergies, adverse reactions, idiosyncratic reactions, anaphylaxis/anaphylactoid reactions to food items, and metabolic variations or adverse reactions/allergies to other substances (such as latex, iodine, tape adhesives) used to assure the safety of health care delivery.

At a minimum, it should list currently active and any historical allergies and adverse reactions that are relevant to the Request for Service and may have an effect on the treatment of the patient.

Allergies Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.10(closed)]`

Table 28: Allergies Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	N/A

An Allergies (`Section`) `element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3496].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3497].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3498] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.10"` [CONF:3498.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="48765-2"` Allergies (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3499].
5) **SHALL** contain exactly one [1..1] **`title`**`="Allergies"` [CONF:3500] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3500.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3501].

Section template with Coded Entries Optional (Level 2 or 3)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.10.1(closed)]`

Table 29: Allergies [with entries] Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	Allergy Observation

An Allergies [with entries] (`Section`) `element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3502].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3503].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3504] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.10.1"` [CONF:3504.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="48765-2"` Allergies (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3505].
5) **SHALL** contain exactly one [1..1] **`title`**`="Allergies [with entries]"` [CONF:3506] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3506.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3507].

7) **SHALL** contain one or more (or a `nullFlavor` value) [1..*] **`entry`** [CONF:3508] such that each,
   a) **SHALL** contain exactly one [1..1] Allergy Observation (`2.16.840.1.113883.3.163.99.4.3.9`) [CONF:3508.1].

The following XML example outlines how to use the Allergies [with entries] template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.163.99.4.2.10.1"/>
        <code code="48765-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Allergies andor adverse reactions Doc"/>
        <title>Allergies and Intolerances (Reaction List) [with entries]</title>
        <text>
            <table border='1'>
                <thead>
                    <tr><th>Reported On</th><th>Allergy/Intolerance Agent Code</th>
                        <th>Allergen/Agent ID</th><th>Allergy/Intolerance Category
Code</th>
                        <th>Allergy/Intolerance Severity Code</th><th>Comment</th>
                    </tr>
                </thead>
                <tbody>
                    <tr><td>2011-02-13</td><td>Food Allergy</td>
                        <td>Peanuts</td><td>Anaphilaxis</td>
                        <td>Life threatening</td><td>Reported by a patient</td>
                    </tr>
                    <tr><td>2011-02-13</td><td>Drug Allergy</td>
                        <td>Penicillin</td><td>Allergy</td>
                        <td>Mild</td><td>Reported by a family member</td>
                    </tr>

                </tbody>
            </table>
        </text>
        <entry typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.3.9"/> <!--Allergy and
Intolerance Observation-->
            ....
        </entry>
    </section>
</component>
```

Figure 20: Allergies [with entries] entry example

5.4 APPOINTMENTS [56446-8]

This section allows for the inclusion of future appointments scheduled for the patient.

Generally these are not the appointments pertaining to the delivery of the Request for Service but rather appointments the patient has scheduled with the provider who issued the request.

Appointments Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.3(closed)]`

Table 30: Appointments Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	N/A

An Appointments (`Section`) element:

1) **SHALL** contain exactly one [1..1] **`@classCode`**="`DOCSECT`" document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3438].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**="`EVN`" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3439].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3440] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**="`2.16.840.1.113883.3.163.99.4.2.3`" [CONF:3440.12].
4) **SHALL** contain exactly one [1..1] **`code`**="`56446-8`" Appointment Summary (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3441].
5) **SHALL** contain exactly one [1..1] **`title`**="`Appointments`" [CONF:3442] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3442.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3443].

The following XML example outlines how to use the Appointments template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.163.99.4.2.3"/>
        <code code="56446-8" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Appointment Summary"/>
        <title>Appoitnemnt  Summary</title>
        <text>
            <list>
            <item>Patient has follow-up appointment with Dr. G. Practitioner on June
4th.</item>
            <item>Patient is also scheduled for elective surgery on December 4th, 2013
for varricose veins.</item>
            </list>
        </text>
    </section>
</component>
```

Figure 21: Appointments entry example

5.5 CARE HISTORY [47519-4]

This section supports the communication of the care that the patient has had that is relevant to the Request for Service and may have an effect on the treatment of the patient.

The types of Care History that should be included in the RFS will vary based on the patient's history and condition and the pathway for the RFS. The term "Care Event" is used to indicate "Treatment", "Procedure", "Surgery", "Investigation", or other type of care that is being communicated.

Care History Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.7(closed)]`

Table 31: Care History Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	N/A

A Care History (`Section`) element:

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3470].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3471].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3472] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.7"` [CONF:3472.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="47519-4"` History of procedures (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3473].
5) **SHALL** contain exactly one [1..1] **`title`**`="Care History"` [CONF:3474] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3474.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3475].

Section template with Coded Entries Optional (Level 2 or 3)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.7.1(closed)]`

Table 32: Care History [with entries] Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	Care History Event

A Care History [with entries] (`Section`) element:

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3476].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3477].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3478] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.7.1"` [CONF:3478.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="47519-4"` History of procedures (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3479].
5) **SHALL** contain exactly one [1..1] **`title`**`="Care History [with entries]"` [CONF:3480] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3480.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3481].

7) **MAY** contain zero or more [0..*] **entry** [CONF:3482] such that each,
   a) **SHALL** contain exactly one [1..1] Care History Event (2.16.840.1.113883.3.163.99.4.3.6) [CONF:3482.1].

The following XML example outlines how to use the Care History [with entries] template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.163.99.4.2.7.1"/>
        <code code="47519-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="History of Procedures"/>
        <title>Care History [with entries]</title>
        <text>
            Care Event Code:            418903008
            Care Event Name:            Coronary angiogram and left ventriculogram
            Care Event Status:             completed
            Care Event Datetime:        2/13/2013
            Care Event Reason:             Chest pain, 29857009 (SNOMED CT)
            Care Event Comment:            No complications noted.
            Care Event Outcome / Results:  Refer to attached report
            Care Event Attachment:         Report.pdf
            Follow-up Encounter Comments:  Follow-up with GP in 1 week and Internist
in 4 weeks
        </text>
        <entry typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.3.6"/>
            <!-- Care History Event -->
            ....

        </entry>
    </section>
```

Figure 22: Care History [with entries] entry example

5.6 CARE PLAN [18776-5]

This section contains data that defines pending orders, interventions, encounters, services, and procedures for the patient.

This section may contain all active, incomplete, or pending orders, appointments, referrals, procedures, services, or any other pending event of clinical significance that are relevant to the Request for Service and may have an effect on the treatment of the patient.

The plan may also contain information about ongoing care of the patient and information regarding goals and clinical reminders. Clinical reminders are placed here to provide prompts for disease prevention and management, patient safety, and health-care quality improvements, including widely accepted performance measures. The plan may also indicate that patient education was given or will be provided.

Care Plan Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.11(closed)]`

Table 33: Care Plan Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	N/A

A Care Plan (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3509].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3510].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3511] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.11"` [CONF:3511.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="18776-5"` Plan of Treatment (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3512].
5) **SHALL** contain exactly one [1..1] **`title`**`="Care Plan"` [CONF:3513] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3513.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3514].

Section template with Coded Entries Optional (Level 2 or 3)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.11.1(closed)]`

Table 34: Care Plan [with entries] Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	Care Plan Event

A Care Plan [with entries] (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3515].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3516].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3517] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.11.1"` [CONF:3517.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="18776-5"` Plan of Treatment (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3518].
5) **SHALL** contain exactly one [1..1] **`title`**`="Care Plan [with entries]"` [CONF:3519] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3519.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3520].
7) **MAY** contain zero or more [0..*] **`entry`** [CONF:3521] such that each,
   a) **SHALL** contain exactly one [1..1] Care Plan Event `(2.16.840.1.113883.3.163.99.4.3.10)` [CONF:3521.1].

The following XML example outlines how to use the Care Plan [with entries] template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.163.99.4.2.11.1"/>
        <code code="18776-5" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Care process or plan"/>
        <title>Care Plan [with entries]</title>
        <text>
            GI consult
            2013-02-18
            In Progress
            Routine
            "Screening colonoscopy.
            Family history of cancer of colon, 312824007, SNOMED CT"
            You have seen this lady 5 years ago.  She had clear colonoscopy then.  Due
again.
            Dr. I. Gastroenterolli
            Gastroenterology specialist
        </text>
        <entry typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.3.10"/>
            <!-- Care Plan Event -->
          .....
        </entry>
    </section>
</component>
```

Figure 23: Care Plan [with entries] entry example

5.7 DEMOGRAPHICS & ADMINISTRATIVE INFORMATION [45970-1]

This section includes information about the patient that is relevant to the Request for Service and may have an effect on the treatment of the patient but is not included in the Document Header. Examples of information that might be included in this section include employment and home support.

Demographics & Administrative Information Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.2(closed)]`

Table 35: Demographics & Administrative Information Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	N/A

A Demographics & Administrative Information (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3412].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3413].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3414] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.2"` [CONF:3414.12].

4) **SHALL** contain exactly one [1..1] **code**="45970-1" Demographic information (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3415].
5) **SHALL** contain exactly one [1..1] **title**="Demographics & Administrative Information" [CONF:3416] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **code** element [CONF:3416.32].
6) **SHALL** contain exactly one [1..1] **text** [CONF:3417].

Section template with Coded Entries Optional (Level 2 or 3)

[Section: templateId 2.16.840.1.113883.3.163.99.4.2.2.1(closed)]

Table 36: Demographics & Administrative Information [with entries] Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	Demographics & Administrative Information Observation

A Demographics & Administrative Information [with entries] (Section) element:

1) **SHALL** contain exactly one [1..1] **@classCode**="DOCSECT" document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3418].
2) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3419].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **templateId** [CONF:3420] such that each,
   a) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.3.163.99.4.2.2.1" [CONF:3420.12].
4) **SHALL** contain exactly one [1..1] **code**="45970-1" Demographic information (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3421].
5) **SHALL** contain exactly one [1..1] **title**="Demographics & Administrative Information [with entries]" [CONF:3422] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **code** element [CONF:3422.32].
6) **SHALL** contain exactly one [1..1] **text** [CONF:3423].
7) **MAY** contain zero or more [0..*] **entry** [CONF:3424] such that each,
   a) **SHALL** contain exactly one [1..1] Demographics & Administrative Information Observation (2.16.840.1.113883.3.163.99.4.3.2) [CONF:3424.1].

The following XML example outlines how to use the Demographics & Administrative Information [with entries] template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.163.99.4.2.2.1"/>
        <code code="45970-1" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Demographic Information Section"/>
        <title>Demographics &amp; Administrative Information [with entries]</title>
        <text>
           Prior Postal Code is M1M 1M1
        </text>
        <entry>
            <templateId root="2.16.840.1.113883.3.163.99.4.3.2"/>
            <!-- Demographics & Administrative Information Observation -->
            ....

        </entry>
    </section>
</component>
```

Figure 24: Demographics & Administrative Information [with entries] entry example

5.8 ENCOUNTER HISTORY [46240-8]

This section provides information on any encounters that the patient has had that are relevant to the Request for Service and may have an effect on the treatment of the patient.

This section may also include clinical notes that are associated with the encounters. Encounter reports such as discharge summaries, operative reports and consult reports may be included in this section along with information regarding the reason for the encounter and any follow-up required.

Encounter History Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.4(closed)]`

Table 37: Encounter History Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	N/A

An Encounter History (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3425].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3426].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3427] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.4"` [CONF:3427.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="46240-8"` History of Visits (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3428].

5) **SHALL** contain exactly one [1..1] **`title`**="Encounter History" [CONF:3429] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3429.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3430].

Section template with Coded Entries Optional (Level 2 or 3)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.4.1(closed)]`

Table 38: Encounter History [with entries] Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	Encounter History Event

An Encounter History [with entries] (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**="DOCSECT" document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3431].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3432].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3433] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**="2.16.840.1.113883.3.163.99.4.2.4.1" [CONF:3433.12].
4) **SHALL** contain exactly one [1..1] **`code`**="46240-8" History of Visits (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3434].
5) **SHALL** contain exactly one [1..1] **`title`**="Encounter History [with entries]" [CONF:3435] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3435.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3436].
7) **MAY** contain zero or more [0..*] **`entry`** [CONF:3437] such that each,
   a) **SHALL** contain exactly one [1..1] Encounter History Event `(2.16.840.1.113883.3.163.99.4.3.3)` [CONF:3437.1].

The following XML example outlines how to use the Encounter History [with entries] template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.163.99.4.2.4.1"/>
        <code code="46240-8" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Appointment Summary"/>
        <title>Encounter History</title>
        <text>
            <table
                border="1"
                width="100%">
                <thead>
                    <tr>
                        <th>Encounter</th>
                        <th>Performer</th>
                        <th>Location</th>
                        <th>Date</th>
                    </tr>
                </thead>
                <tbody>
                    <tr>
                        <td>
                            <content ID="Encounter1"/> Pnuemonia</td>
                        <td>Dr Henry Seven</td>
                        <td>Community Health and Hospitals</td>
                        <td>20120806</td>
                    </tr>
                </tbody>
            </table>
        </text>
        <entry>
            <templateId root="2.16.840.1.113883.3.163.99.4.3.3"/>
            <!-- Encounter History Event -->
            ....

        </entry>
    </section>
</component>
```

Figure 25: Encounter History [with entries] entry example

5.9 FAMILY HISTORY [10157-6]

This section provides details on conditions that family members have or have had in the past that are relevant to the Request for Service and may have an effect on the treatment of the patient.

Family History Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.12(closed)]`

Table 39: Family History Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	N/A

A Family History (`Section`) element:

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3522].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3523].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3524] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.12"` [CONF:3524.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="10157-6"` Family History (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3525].
5) **SHALL** contain exactly one [1..1] **`title`**`="Family History"` [CONF:3526] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3526.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3527].

The following XML example outlines how to use the Family History template:

```
<component typeCode="COMP" contextConductionInd="true">
             <section classCode="DOCSECT" moodCode="EVN">
                <templateId root="2.16.840.1.113883.3.163.99.4.2.12"/>
                <code code="10157-6" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="History of Family Member Diseases"/>
                <title>Family History</title>
                <text>
                   Family history of cancer of colon;
                   Mother diagnosed with metastatic cancer of colon and died at age
55.
                   Patient needs colonoscopy screening.
                </text>
             </section>
          </component>
```

Figure 26: Family History entry example

5.10 IMMUNIZATIONS [11369-6]

This section provides information on the immunization history of the patient.

Immunizations Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.13(closed)]`

Table 40: Immunizations Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	N/A

An Immunizations (`Section`) element:

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3535].

2) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3536].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **templateId** [CONF:3537] such that each,
   a) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.3.163.99.4.2.13" [CONF:3537.12].
4) **SHALL** contain exactly one [1..1] **code**="11369-6" Immunizations (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3538].
5) **SHALL** contain exactly one [1..1] **title**="Immunizations" [CONF:3539] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **code** element [CONF:3539.32].
6) **SHALL** contain exactly one [1..1] **text** [CONF:3540].

Section template with Coded Entries Optional (Level 2 or 3)

[Section: templateId 2.16.840.1.113883.3.163.99.4.2.13.1(closed)]

Table 41: Immunizations [with entries] Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	Immunization Observation

An Immunizations [with entries] (Section) element:

1) **SHALL** contain exactly one [1..1] **@classCode**="DOCSECT" document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3541].
2) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3542].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **templateId** [CONF:3543] such that each,
   a) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.3.163.99.4.2.13.1" [CONF:3543.12].
4) **SHALL** contain exactly one [1..1] **code**="11369-6" Immunizations (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3544].
5) **SHALL** contain exactly one [1..1] **title**="Immunizations [with entries]" [CONF:3545] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **code** element [CONF:3545.32].
6) **SHALL** contain exactly one [1..1] **text** [CONF:3546].
7) **MAY** contain zero or more [0..*] **entry** [CONF:3547] such that each,
   a) **SHALL** contain exactly one [1..1] Immunization Observation (2.16.840.1.113883.3.163.99.4.3.12) [CONF:3547.1].

The following XML example outlines how to use the Immunizations [with entries] template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.1818.10.2.14.1"/>
        <code code="11369-6" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="History of Immunization"/>
        <title>Immunizations List [with entries]</title>
        <text>
            <table border="1" width="100%">
                <thead>
                    <tr>
                        <th>Vaccine</th>
                        <th>Date</th>
                        <th>Status</th>
                    </tr>
                </thead>
                <tbody>
                    <tr>
                        <td>Influenza virus vaccine, IM</td>
                        <td>Nov 1999</td>
                        <td>Completed</td>
                    </tr>
                    <tr>
                        <td>Influenza virus vaccine, IM</td>
                        <td>Dec 1998</td>
                        <td>Completed</td>
                    </tr>
                    <tr>
                        <td>Pneumococcal polysaccharide vaccine, IM</td>
                        <td>Dec 1998</td>
                        <td>Completed</td>
                    </tr>
                    <tr>
                        <td>Tetanus and diphtheria toxoids, IM</td>
                        <td>1997</td>
                        <td>Completed</td>
                    </tr>
                </tbody>
            </table>
        </text>

        <entry typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.3.12"/>
            <!-- Immunization Observation -->
           ....
    </section>
</component>
```

Figure 27: Immunizations [with entries] entry example

5.11 LABORATORY RESULTS & REPORTS [30954-2]

This section provides details on different laboratory tests or procedures that were performed on the patient that are relevant to the Request for Service and may have an effect on the treatment of the patient.

Laboratory Results & Reports Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.14(closed)]`

Table 42: Laboratory Results & Reports Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	N/A

A Laboratory Results & Reports (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3548].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3549].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3550] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.14"` [CONF:3550.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="30954-2"` Lab Data (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3551].
5) **SHALL** contain exactly one [1..1] **`title`**`="Laboratory Results & Reports"` [CONF:3552] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3552.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3553].

Section template with Coded Entries Optional (Level 2 or 3)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.14.1(closed)]`

Table 43: Laboratory Results & Reports [with entries] Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	Laboratory Observation

A Laboratory Results & Reports [with entries] (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3554].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3555].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3556] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.14.1"` [CONF:3556.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="30954-2"` Lab Data (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3557].
5) **SHALL** contain exactly one [1..1] **`title`**`="Laboratory Results & Reports [with entries]"` [CONF:3558] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3558.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3559].

7) **MAY** contain zero or more [0..*] **entry** [CONF:3560] such that each,
   a) **SHALL** contain exactly one [1..1] Laboratory Observation (2.16.840.1.113883.3.163.99.4.3.13) [CONF:3560.1].

The following XML example outlines how to use the Laboratory Results & Reports [with entries] template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.163.99.4.2.14.1"/>
        <code code="30954-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Laboratory report"/>
        <title>Laboratory Results and Reports [with entries]</title>
        <text>
            <table border="1" width="100%">
                <thead>
                    <tr>
                        <th> </th>
                        <th>March 23, 2000</th>
                        <th>April 06, 2000</th>
                    </tr>
                </thead>
                <tbody>
                    <tr>
                        <td colspan="3">
                            <content styleCode="BoldItalics">Hematology</content>
                        </td>
                    </tr>
                    <tr>
                        <td>HGB (M 13-18 g/dl; F 12-16 g/dl)</td>
                        <td>13.2</td>
                        <td> </td>
                    </tr>
                    <tr>
                        <td>WBC (4.3-10.8 10+3/ul)</td>
                        <td>6.7</td>
                        <td> </td>
                    </tr>
                    <tr>
                        <td>PLT (135-145 meq/l)</td>
                        <td>123*</td>
                        <td> </td>
                    </tr>
                    <tr>
                        <td colspan="3">
                            <content styleCode="BoldItalics">Chemistry</content>
                        </td>
                    </tr>
                    <tr>
                        <td>NA (135-145meq/l)</td>
                        <td> </td>
                        <td>140</td>
                    </tr>
                    <tr>
                        <td>K (3.5-5.0 meq/l)</td>
                        <td> </td>
                        <td>4.0</td>
                    </tr>
                    <tr>
                        <td>CL (98-106 meq/l)</td>
                        <td> </td>
                        <td>102</td>
                    </tr>
                    <tr>
                        <td>HCO3 (18-23 meq/l)</td>
                        <td> </td>
                        <td>35*</td>
```

```
                    </tr>
                </tbody>
            </table>
        </text>
        <entry typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.3.13"/>
            <!-- Laboratory Observation -->
          ….
        </entry>
    </section>
</component>
```

Figure 28: Laboratory Results & Reports [with entries] entry example

5.12 LABORATORY SPECIALTY

This section identifies the type of laboratory result being reported such as Microbiology, Anatomical Pathology, Blood Bank, and Chemistry. The Lab Specialty code must be coded using LOINC. The following is a list of most commonly used specialty codes.

LOINC Code	Laboratory Specialties Name
18717-9	Blood Bank Studies
18718-7	Cell Marker Studies
18719-5	Chemistry Studies
18720-3	Coagulation Studies
18723-7	Hematology Studies
18724-5	HLA Studies
18725-2	Microbiology Studies (Note: includes mycology and parasitology, as well as bacteriology. May also include virology.)
18727-8	Serology Studies (Note: May also include virology.)
18728-6	Toxicology Studies
18729-4	Urinalysis Studies
18767-4	Blood Gas Studies
10389-5	Blood Products
30954-2	General Lab
68630-3	Allergy and Immunology Procedure
26438-2	Cytology Studies
11526-1	Anatomical Pathology

Laboratory Specialty Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.17(closed)]`

Table 44: Laboratory Specialty Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta Laboratory Report	Laboratory Report Item

A Laboratory Specialty (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:4482].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:4483].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:4484] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.17"` [CONF:4484.12].
4) **SHALL** contain exactly one [1..1] **`code`**, which **SHOULD** be selected from ValueSet LaboratorySpecialtyCodes 2.16.840.1.113883.3.3068.10.8.36 **STATIC** [CONF:4485].
5) **SHALL** contain exactly one [1..1] **`title`** [CONF:4486] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:4486.32].
6) **SHALL** contain at least one [1..*] **`component`** [CONF:4488].
   a) **SHALL** include one Laboratory Report Item section, such that **`component/section`**,
      i) **SHOULD** contain exactly one [1..1] Laboratory Report Item (`templateId: 2.16.840.1.113883.3.163.99.4.2.18`), or **SHOULD** contain exactly one [1..1] Laboratory Report Item [with entries] (`templateId: 2.16.840.1.113883.3.163.99.4.2.18.1`) [CONF:SEC- 208.1].

The following XML example outlines how to use the Laboratory Specialty template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN" >
        <!--Laboratory Specialty with the Laboratory Report Items-->
        <templateId root='2.16.840.1.113883.3.163.99.4.2.17'/>
        <code code="18717-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="BLOOD BANK STUDIES"/>
        <title>BLOOD BANK STUDIES</title>
        <component contextConductionInd="true" typeCode="COMP">
            <!-- Laboratory Report Item L2 [without entries] [AH] -->
            <section classCode="DOCSECT" moodCode="EVN">
                <templateId root="2.16.840.1.113883.3.163.99.4.2.18"/>
                ...
            </section>
        </component>
        <component contextConductionInd="true" typeCode="COMP">
            <!-- Laboratory Report Item L3 [with entries] [AH] -->
            <section classCode="DOCSECT" moodCode="EVN">
                <templateId root="2.16.840.1.113883.3.163.99.4.2.18.1"/>
                ...
            </section>
        </component>
    </section>
</component>
```

Figure 29: Laboratory Specialty entry example

5.13 MEDICAL HISTORY [11329-0]

This section includes the results, images and reports for medical imaging procedures (e.g., x-rays, CT Scans and MRI's) that are relevant to the Request for Service and may have an effect on the treatment of the patient.

Medical History Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.8(closed)]`

Table 45: Medical History Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	N/A

A Medical History (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3483].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3484].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3485] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.8"` [CONF:3485.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="11329-0"` History general (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3486].

5) **SHALL** contain exactly one [1..1] **`title`**="Medical History" [CONF:3487] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3487.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3488].

Section template with Coded Entries Optional (Level 2 or 3)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.8.1(closed)]`

Table 46: Medical History [with entries] Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	Medical History Observation

A Medical History [with entries] (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**="DOCSECT" document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3847].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3848].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3849] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**="2.16.840.1.113883.3.163.99.4.2.8.1" [CONF:3849.12].
4) **SHALL** contain exactly one [1..1] **`code`**="11329-0" History general (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3850].
5) **SHALL** contain exactly one [1..1] **`title`**="Medical History [with entries]" [CONF:3851] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3851.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3852].
7) **MAY** contain zero or more [0..*] **`entry`** [CONF:3853] such that each,
   a) **SHALL** contain exactly one [1..1] Medical History Observation `(2.16.840.1.113883.3.163.99.4.3.7)` [CONF:3853.1].

The following XML example outlines how to use the Medical History [with entries] template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.163.99.4.2.8.1"/>
        <code code="11329-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="History general"/>
        <title>Medical History</title>
        <text>
            Code    27885002 (SNOMED CT)
            Text    Complete heart block
            Value       Syncope with pacemaker insertion for 3rd degree heart block.
        </text>
        <entry typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.3.7"/>
            <!-- Medical History Observation -->
        </entry>
    </section>
</component>
```

Figure 30: Medical History [with entries] entry example

5.14 MEDICAL IMAGING RESULTS & REPORTS [35090-0]

This section includes the results, images and reports for medical imaging procedures (e.g., x-rays, CT Scans and MRI's) that are relevant to the Request for Service and may have an effect on the treatment of the patient.

Medical Imaging Results & Reports Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.15(closed)]`

Table 47: Medical Imaging Results & Reports Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	N/A

A Medical Imaging Results & Reports (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3561].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3562].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3563] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.15"` [CONF:3563.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="35090-0"` Patient History (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3564].
5) **SHALL** contain exactly one [1..1] **`title`**`="Medical Imaging Results & Reports"` [CONF:3565] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3565.32].

6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3566].

Section template with Coded Entries Optional (Level 2 or 3)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.15.1(closed)]`

Table 48: Medical Imaging Results & Reports [with entries] Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	Medical Imaging Result & Report Observation

A Medical Imaging Results & Reports [with entries] (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3567].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3568].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3569] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.15.1"` [CONF:3569.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="35090-0"` Patient History (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3570].
5) **SHALL** contain exactly one [1..1] **`title`**`="Medical Imaging Results & Reports [with entries]"` [CONF:3571] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3571.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3572].
7) **MAY** contain zero or more [0..*] **`entry`** [CONF:3573] such that each,
   a) **SHALL** contain exactly one [1..1] Medical Imaging Result & Report Observation `(2.16.840.1.113883.3.163.99.4.3.14)` [CONF:3573.1].

The following XML example outlines how to use the Medical Imaging Results & Reports [with entries] template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.163.99.4.2.15.1"/>
        <code code="35090-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Patient Hx"/>
        <title>Medical Imaging Results and Reports (with entries)</title>
        <text>
            <table border="1">
                <tbody>
                    <tr>
                        <th>Procedure</th>
                        <th>Results</th>
                        <th>Date</th>
                        <th>Reason</th>
                    </tr>
                    <tr>
                        <td>Chest x-ray</td>
                        <td>Nothing unusual could be observed. X-ray image is
attached.</td>
                        <td>July 14, 2004</td>
                        <td>Patient reports soreness in chest following fall from
horse.</td>
                    </tr>
                </tbody>
            </table>
        </text>
        <entry typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.3.14"/>
            <!--MEDICAL IMAGING RESULT & REPORT OBSERVATION-->
            ....
        </entry>
    </section>
</component>
```

Figure 31: Medical Imaging Results & Reports [with entries] entry example

5.15 MEDICATIONS [19013-2]

This section provides details on the medications that are relevant to the Request for Service and may have an effect on the treatment of the patient. This should include all current medications, all usual medications and past medication regimens relevant to the topic of the referral.

Medications Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.16(closed)]`

Table 49: Medications Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	N/A

A Medications (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3574].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3575].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3576] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.16"` [CONF:3576.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="19013-2"` Medications (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3577].
5) **SHALL** contain exactly one [1..1] **`title`**`="Medications"` [CONF:3578] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3578.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3579].

Section template with Coded Entries Optional (Level 2 or 3)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.16.1(closed)]`

Table 50: Medications [with entries] Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	Medication Activity

A Medications [with entries] (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3580].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3581].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3582] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.16.1"` [CONF:3582.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="19013-2"` Medications (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3583].
5) **SHALL** contain exactly one [1..1] **`title`**`="Medications [with entries]"` [CONF:3584] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3584.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3585].
7) **MAY** contain zero or more [0..*] **`entry`** [CONF:3586] such that each,
   a) **SHALL** contain exactly one [1..1] Medication Activity `(2.16.840.1.113883.3.163.99.4.3.16)` [CONF:3586.1].

The following XML example outlines how to use the Medications [with entries] template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.163.99.4.2.16.1"/>
        <code code="19013-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="History of Medication Use"/>
        <title>Medications and Prescriptions - Medication List [with entries]</title>
        <text>
            <list>
                <item>Amoxicillin 100mg PO BID</item>
            </list>
        </text>
        <entry typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.3.16" />
            <!-- Medication Activity-->
            ….
        </entry>
    </section>
</component>
```

Figure 32: Medications [with entries] entry example

5.16 PATHWAY SPECIFIC CRITERIA [PATHWAYCRITERIA]

This section includes the questions and answers provided by the referral source provider based on the specific request for service pathway.

Pathway Specific Criteria Template Definitions

Section template with Coded Entries Required (Level 3)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.1.1(closed)]`

Table 51: Pathway Specific Criteria [entries required] Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	Pathway Specific Criteria Observation

A Pathway Specific Criteria [entries required] (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3405].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3406].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3407] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.1.1"` [CONF:3407.12].
4) **SHALL** contain exactly one [1..1] **`code`**`="PWCRITERIA"` Pathway Specific Criteria (CodeSystem: SectionType-CA-Pending 2.16.840.1.113883.3.3068.10.6.2) [CONF:3408].
5) **SHALL** contain exactly one [1..1] **`title`**`="Pathway Specific Criteria [with entries]"` [CONF:3409] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:3409.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:3410].

7) **SHALL** contain one or more (or a `nullFlavor` value) [1..*] **`entry`** [CONF:3411] such that each,
   a) **SHALL** contain exactly one [1..1] Pathway Specific Criteria Observation (`2.16.840.1.113883.3.163.99.4.3.1`) [CONF:3411.1].

The following XML example outlines how to use the Pathway Specific Criteria [entries required] template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.163.99.4.2.1.1"/>
        <code code="PWCRITERIA" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Care process or plan"/>
        <title>Pathway specific Criteria [Entries Required]</title>
        <text>
            <list>
                <item>Pain on motion (e.g. walking, bending): Severe </item>
                <item>Pain at rest (e.g. while sitting, lying down, or causing sleep
disturbance): Mild</item>
            </list>
        </text>
        <entry>
            <templateId root="2.16.840.1.113883.3.163.99.4.3.1"/>
            <!-- Pathway Specific Observation -->
            ….
        </entry>
        <entry>
            <templateId root="2.16.840.1.113883.3.163.99.4.3.1"/>
            <!-- Pathway Specific Observation -->
            ….
        </entry>
    </section>
</component>
```

Figure 33: Pathway Specific Criteria [entries required] entry example

5.17 SOCIAL HISTORY & RISK FACTORS [29762-2]

This section contains data defining the patient's occupational, personal (e.g. lifestyle), social, and environmental history and health risk factors. Social history can have significant influence on a patient's physical, psychological and emotional health and wellbeing so should be considered in the development of a complete record.

Social History & Risk Factors Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.6(closed)]`

Table 52: Social History & Risk Factors Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	N/A

A Social History & Risk Factors (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3457].

2) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3458].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **templateId** [CONF:3459] such that each,
   a) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.3.163.99.4.2.6" [CONF:3459.12].
4) **SHALL** contain exactly one [1..1] **code**="29762-2" Social History (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3460].
5) **SHALL** contain exactly one [1..1] **title**="Social History & Risk Factors" [CONF:3461] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **code** element [CONF:3461.32].
6) **SHALL** contain exactly one [1..1] **text** [CONF:3462].

Section template with Coded Entries Optional (Level 2 or 3)

[Section: templateId 2.16.840.1.113883.3.163.99.4.2.6.1(closed)]

Table 53: Social History & Risk Factors [with entries] Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alberta eReferral Clinical Attachment	Social History & Risk Factor Observation

A Social History & Risk Factors [with entries] (Section) element:

1) **SHALL** contain exactly one [1..1] **@classCode**="DOCSECT" document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3463].
2) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3464].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **templateId** [CONF:3465] such that each,
   a) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.3.163.99.4.2.6.1" [CONF:3465.12].
4) **SHALL** contain exactly one [1..1] **code**="29762-2" Social History (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3466].
5) **SHALL** contain exactly one [1..1] **title**="Social History & Risk Factors [with entries]" [CONF:3467] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **code** element [CONF:3467.32].
6) **SHALL** contain exactly one [1..1] **text** [CONF:3468].
7) **MAY** contain zero or more [0..*] **entry** [CONF:3469] such that each,
   a) **SHALL** contain exactly one [1..1] Social History & Risk Factor Observation (2.16.840.1.113883.3.163.99.4.3.5) [CONF:3469.1].

The following XML example outlines how to use the Social History & Risk Factors [with entries] template:

```
<component typeCode="COMP" contextConductionInd="true">
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.163.99.4.2.6.1"/>
        <code code="29762-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Social History"/>
        <title>Social History &amp;amp; Risk Factors [with entries]</title>
        <text>
            <table border='1'>
                <thead>
                    <tr><th>Social History</th><th>Comments</th><th>Date
Range</th></tr>
                </thead>
                <tbody>
                    <tr><td>Smoking</td><td>1/2 pack per day</td><td>? -
1996</td></tr>
                    <tr><td>Alcohol Use</td><td>1-2 drinks per week</td><td></td></tr>
                </tbody>
            </table>
        </text>
        <entry typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.3.5"/>
            <!-- Social History & Risk Factor Observation-->
           ....
        </entry>
    </section>
</component>
```

Figure 34: Social History & Risk Factors [with entries] entry example

6.0 SUBSECTION TEMPLATES

This chapter contains the Subsection Templates referenced by one or more of the Section Templates of these specifications. These templates describe the purpose of each subsection and the subsection-level constraints.

Subsection Templates are always used by Section templates and will not be included separately from the parent section in a document.

The structure of a subsection is the same as a section template structure.

Each Template contains the following:

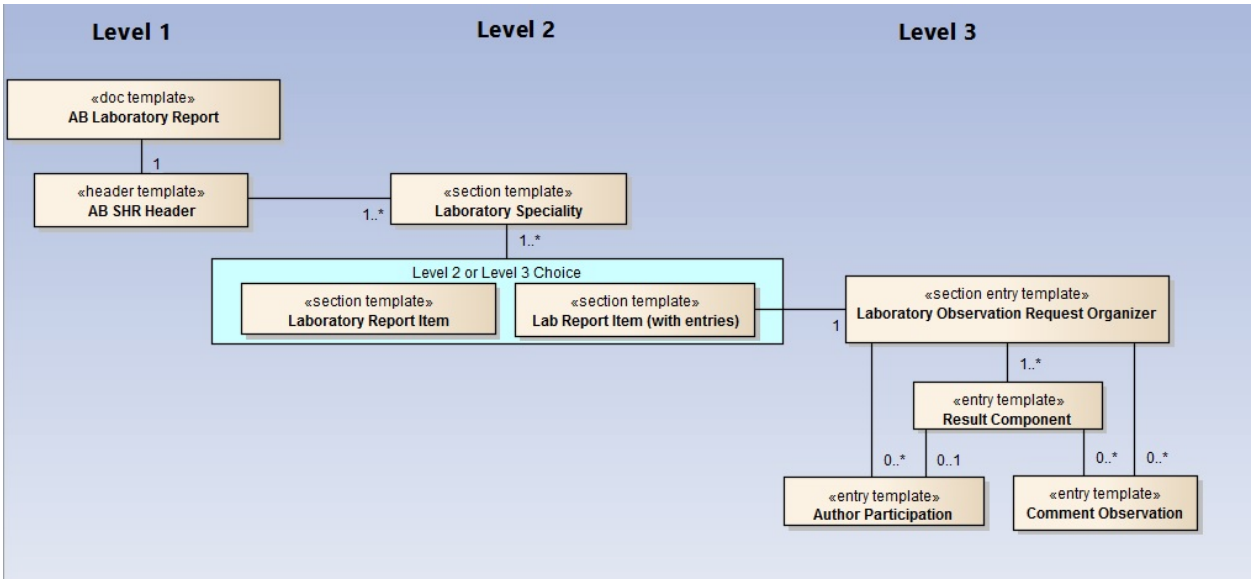
- Subsection code
- Template metadata (e.g., `templateId`, etc.)
- Subsection title
- Requirements for a text element
- Description and explanatory narrative
- Section Entry Templates names and IDs for referenced templates (required and optional)

Please refer to the Section Templates Chapter for details about the code, title, narrative text and entries elements.

6.1 LABORATORY REPORT ITEM

This section provides the details pertaining to the laboratory observations. It includes observation request information such as the lab test(s) ordered, specimen collection date and ordering provider as well as the observation result information such as the lab test(s) performed and resulting values. Lab Report Item section headings reference the lab test codes.

The Laboratory Report Item templates are sub-sections to the Laboratory Specialty section template which identifies the type of lab results being reported (e.g. Microbiology). The diagram below illustrates the Level 2 section and sub-section relationships.



For General Laboratory, the Laboratory Report Item sub-section heading may pertain to a Sodium test (i.e. 2947-0), a Complete Blood Count (i.e. 58410-2) or a Cholesterol test (i.e. 14647-2) to name a few.

For Microbiology, the lab report item may pertain to a Stool Culture (i.e. 625-4).

For Blood Bank, the lab report item may pertain to Blood Typing and Antibody Screen (i.e. 34532-2).

For Anatomical Pathology, the lab report item may pertain to the Surgical Pathology Report (i.e. 11529-5). In addition, guidance within the pan-Canadian Laboratory Messaging and Nomenclature Specification as well as the IHE Anatomical Pathology Structure Reporting guidelines suggest the following section headings:

LOINC Code	Section Name
22634-0	Clinical Information
22635-7	Macroscopic Observation
22637-3	Microscopic Observation
46059-2	Diagnosis
46450-3	Procedure Steps

Laboratory Report Item Template Definitions

Section template without Coded Entries (Level 2)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.18(closed)]`

Table 54: Laboratory Report Item Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Laboratory Specialty	N/A

A Laboratory Report Item (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:4492].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:4493].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:4494] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.18"` [CONF:4494.12].
4) **SHALL** contain exactly one [1..1] **`code`**, which **SHALL** be selected from ValueSet pCLOCD 2.16.840.1.113883.3.3068.10.8.1 **DYNAMIC** [CONF:4495].
5) **SHALL** contain exactly one [1..1] **`title`** [CONF:4496] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:4496.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:4497].
   a) **MAY** contain an attachment as encapsulated data [CONF:4497.1]. See Table 87: Encapsulated Data File Types.

Section template with Coded Entries Optional (Level 2 or 3)

`[Section: templateId 2.16.840.1.113883.3.163.99.4.2.18.1(closed)]`

Table 55: Laboratory Report Item [with entries] Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Laboratory Specialty	Laboratory Observation Request Organizer

A Laboratory Report Item [with entries] (`Section) element:`

1) **SHALL** contain exactly one [1..1] **`@classCode`**`="DOCSECT"` document section (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:4498].
2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:4499].
3) **SHALL** contain exactly one [1..1] **`templateId`** [CONF:4500] such that it,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.2.18.1"` [CONF:4500.12].
4) **SHALL** contain exactly one [1..1] **`code`**, which **SHALL** be selected from ValueSet ObservationOrderableLabType 2.16.840.1.113883.2.20.3.164 **DYNAMIC** [CONF:4501].
5) **SHALL** contain exactly one [1..1] **`title`** [CONF:4502] such that it,
   a) **MAY** contain content that differs from the suggested text as long as it **SHALL NOT** conflict with the meaning intended by the fixed content of the **`code`** element [CONF:4502.32].
6) **SHALL** contain exactly one [1..1] **`text`** [CONF:4503].
7) **SHALL** contain at least one [1..*] **`entry`** [CONF:4504] such that each,
   a) **SHALL** contain exactly one [1..1] Laboratory Observation Request Organizer `(2.16.840.1.113883.3.163.99.4.3.17)` [CONF:4504.1].

The following XML example outlines how to use the Laboratory Report Item [with entries] template:

```
<component contextConductionInd="true" typeCode="COMP">
    <!-- Laboratory Report Item [with entries] [AH] -->
    <section classCode="DOCSECT" moodCode="EVN">
        <templateId root="2.16.840.1.113883.3.163.99.4.2.14.1"/>
        <code code="58410-2" codeSystem="2.16.840.1.113883.3.3068.10.8.1"
codeSystemName="pCLOCD" displayName="Complete Blood Count">
            <translation code="CBC" codeSystem="2.1.1.1" codeSystemName="Local"
displayName="Complete Blood Count">
                <originalText>Complete Blood Count</originalText>
            </translation>
        </code>
        <title>Complete Blood Count [with entries]</title>
        <text>
            <table border="1" width="100%">
                <tbody>
                    <tr>
                        <td>Hemoglobin A (120-150)</td>
                        <td>113.0</td>
                        <td>g/L</td>
                    </tr>
                    <tr>
                        <td>WBC (4.0-10.0)</td>
                        <td>11.0</td>
                        <td>giga/L</td>
                    </tr>
                    <tr>
                        <td>RBC (3.8-4.8)</td>
                        <td>3.25</td>
                        <td>tera/L</td>
                    </tr>
                </tbody>
            </table>
        </text>
        <entry typeCode="COMP" contextConductionInd="true">
            ....
        </entry>
    </section>
</component>
```

Figure 35: Laboratory Report Item [with entries] entry example

7.0 SECTION ENTRY TEMPLATES

This chapter contains the Section-Entry Templates referenced by one or more of the Section Templates of these specifications. These templates contain the structured entry constraints that are required for the applicable section. Note that the Section-Entry Templates are presented in alphabetical order rather than usage.

Section Entry Templates are always allowed in sections.

Each Section Entry Template's description contains the following information:

- Key template metadata (*e.g.*, `templateId`, *etc.*);
- Description and explanatory narrative;
- Entry Templates names and IDs for referenced templates (required and optional)
- Required CDA acts, participants and vocabularies; and
- Optional CDA acts, participants and vocabularies.

7.1 ALERTS & ADVANCE DIRECTIVES OBSERVATION

`[Observation: templateId 2.16.840.1.113883.3.163.99.4.3.4(closed)]`

Table 56: Alerts & Advance Directives Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alerts & Advance Directives [with entries]	Attachment Comment Observation

The Alert & Advanced Directives Observation template is the entry point for alerts and advanced directives and includes the elements needed to describe an alert or the meta-data regarding the advanced directive such as the start/end dates, verification information, custodian information and either the actual text of the advanced directive or an attachment reference including (or referencing) the applicable advanced directive document. This template also enables the inclusion of an attachment and comments relevant to an alert.

Table 57: Alerts & Advance Directives Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3587		`@typeCode`	M:1..1	
3588		`templateId`	O:0..*	II
3589		`observation`	R:1..1	
3590		`@classCode`	M:1..1	
3591		`@moodCode`	M:1..1	
3592	**Record ID** Record ID associated with the Alert or	`id`	M:1..1	II

CONF	Business Name & Description	Element Name	E&C	Element Data Type
	Advance Directive.			
3593	**Alert/Advance Directive Type** Categorization of the Alert or Advance Directive.	code	M:1..1	CD
3594	**Alert/Advance Directive Text** If the Alert or Advance Directive has been captured as text within the Source system, this element SHALL contain the text of the Alert/Advance Directive.	text	R:1..1	ED
3595	**Alert/Advance Directive Status** The status of the Alert or Advance Directive (Active or Complete).	statusCode	M:1..1	CS
3596	**Start Date/End Date** The effective or start date associated with the Alert or Advance Directive.	effectiveTime	R:1..1	IVL_TS
3598	**Attachment** If the Alert or Advanced Directive has been attached to the patient's chart, this element SHALL contain the attachment. An attachment always SHALL be present if Alert/Advanced Directive Text is not present.	entryRelationship (Attachment)	R:0..*	
3599	**Comments** Additional textual information regarding the Alert or Advance Directive as captured in the EMR. (E.g. "have discussed with patient and NOK or guardian").	entryRelationship (Comment Observation)	O:0..*	
3600	**Custodian** The name and optional identifiers for the person or organization that is the responsible custodian for the Alert or Advanced Directive.	participant	R:0..*	
3601		@typeCode	M:1..1	
3602		@contextControlCode	O:1..1	
3603	**Custodian Role**	participantRole	R:0..1	
3604		@classCode	M:1..1	
3605	**Custodian Telecom**	telecom	R:0..1	TEL
3606	**Custodian Address**	addr	R:0..1	AD
3607	**Custodian Person/Organization**	playingEntity	R:0..1	
3608		@classCode	M:1..1	
3609		@determinerCode	M:1..1	
3610	**Custodian's name**	name	R:0..1	PN

An Alerts & Advance Directives Observation (`Observation`) element:

1) **SHALL** contain exactly one [1..1] **`@typeCode`**="`COMP`" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3587].
2) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3588] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**="`2.16.840.1.113883.3.163.99.4.3.4`" [CONF:3588.12].
3) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`observation`** [CONF:3589].

a) **SHALL** contain exactly one [1..1] **@classCode**="OBS" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3590].
b) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3591].
c) **SHALL** contain exactly one [1..1] **id** [CONF:3592].
d) **SHALL** contain exactly one [1..1] **code**, which **SHALL** be selected from ValueSet AdvanceDirectiveType 2.16.840.1.113883.3.3068.10.8.6 **STATIC** [CONF:3593].
e) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **text** [CONF:3594].
f) **SHALL** contain exactly one [1..1] **statusCode**, which **SHALL** be selected from ValueSet x_ActStatusActiveComplete 2.16.840.1.113883.1.11.19890 **STATIC** [CONF:3595] such that it,
    i) **SHALL** be constrained to either Active or Completed status codes [CONF:3595.34].
g) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **effectiveTime** [CONF:3596] such that it,
    i) **SHALL** contain exactly one [1..1] **low** value to indicate the Start Date/Time and **MAY** contain zero or one [0..1] **high** values to indicate the End Date/Time [CONF:3596.50].
h) **SHALL** contain zero or more if available [0..*] **entryRelationship** [CONF:3598] such that each,
    i) **SHALL** contain exactly one [1..1] Attachment (2.16.840.1.113883.3.163.99.4.4.6) [CONF:3598.1].
i) **MAY** contain zero or more [0..*] **entryRelationship** [CONF:3599] such that each,
    i) **SHALL** contain exactly one [1..1] Comment Observation (2.16.840.1.113883.3.163.99.4.4.3) [CONF:3599.1].
j) **SHALL** contain zero or more if available [0..*] **participant** [CONF:3600].
    i) **SHALL** contain exactly one [1..1] **@typeCode**="CST" custodian (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:3601].
    ii) **MAY** contain zero or one [1..1] **{CDAR2}** **@contextControlCode**="OP" overriding propagating (CodeSystem: ContextControl 2.16.840.1.113883.5.1057) [CONF:3602].
    iii) **SHALL** contain zero or one if available [0..1] **participantRole** [CONF:3603].
        (1) **SHALL** contain exactly one [1..1] **@classCode**="ASSIGNED" assigned (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:3604].
        (2) **SHALL** contain zero or one if available [0..1] **telecom** [CONF:3605] such that it,
            (a) **SHALL**, when present, conform to the Telecom (TEL) pan-Canadian Data Type data type constraint template (2.16.840.1.113883.3.3068.10.5.2) [CONF:3605.5].
        (3) **SHALL** contain zero or one if available [0..1] **addr** [CONF:3606] such that it,
            (a) **SHALL**, when present, conform to the Address (AD) pan-Canadian Data Type data type constraint template (2.16.840.1.113883.3.3068.10.5.1) [CONF:3606.5].
        (4) **SHALL** contain zero or one if available [0..1] **playingEntity** [CONF:3607].
            (a) **SHALL** contain exactly one [1..1] **@classCode**="PSN" person (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3608].
            (b) **SHALL** contain exactly one [1..1] **@determinerCode**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3609].
            (c) **SHALL** contain zero or one if available [0..1] **name** [CONF:3610].

The following XML example outlines how to use the Alerts & Advance Directives Observation template:

```
<entry typeCode="COMP" contextConductionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.3.4"/>
    <!-- Advance Directives Observation -->
    <observation classCode="OBS" moodCode="EVN">
        <id extension="1" root="1.2.3.4"/>
        <code code="71388002"  displayName="Other Directive"
codeSystem="2.16.840.1.113883.6.96"
            codeSystemName="SNOMED-CT">
            <originalText>Registered Organ Donor</originalText>
        </code>
        <text>
            Advance Directive: Organ Donor
            BC Registry of Motor Vehicles
            1/27/2004
            Registered Organ Donor
        </text>
        <statusCode code="active"/>
        <effectiveTime value="20040127"/>
        <!-- Custodian -->
        <participant typeCode="CST" contextControlCode="OP">
            <participantRole classCode="ASSIGNED">
                <addr></addr>
                <telecom></telecom>
                <playingEntity classCode="PSN" determinerCode="INSTANCE">
                    <name use="L">
                        <prefix>Mrs.</prefix>
                        <given>Eve</given>
                        <given>E.</given>
                        <family>Everywoman</family>
                    </name>
                </playingEntity>
            </participantRole>
        </participant>
        <!-- Comments -->
        <entryRelationship typeCode="SUBJ" contextConductionInd="true"
inversionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.3"/>  <!-- Comment
Observation -->
          ….
        </entryRelationship>
        <!-- Attachment or Reference -->
        <entryRelationship typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.6"/> <!-- Attachment -->
          ….
        </entryRelationship>
    </observation>
</entry>
```

Figure 36: Alerts & Advance Directives Observation entry example

7.2 ALLERGY OBSERVATION

`[Act: templateId 2.16.840.1.113883.3.163.99.4.3.9(closed)]`

Table 58: Allergy Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Allergies [with entries]	Comment Observation

Directly Used by Template(s)	Directly Contains Template(s)
	Reaction Observation Severity Observation

The Allergy Observation template enables the communication of whether an allergy (or intolerance) exists or is thought not to exist.

These obserations are wrapped in an Allergy Problem Act, or "Concern" act, which includes the status of the observation, the date and time it was documented as well as a persistent Record ID from the originating system. This Act will contain information about the agent or allergen as well as the associated reaction.

Allergen and Allergen Group Codes

While the agent believed to be the cause of an allergy (or, in some cases, adverse reaction) is often implicit in the code used to represent the associated alert observation (*e.g*. "allergy to penicillin"), it **SHOULD** also be asserted explicitly as an entity. Due the limitations of the underlying CDA information model, these agents are represented as a `manufacturedMaterial` entity in the allergy observation – whether or not the agent is in fact manufactured or naturally occurring. The agent responsible for an allergy or adverse reaction is not always a manufactured material (for example food allergies), nor is it necessarily consumed.

The following constraints reflect limitations in the base CDA R2 specification, and should be used to represent any type of responsible agent.

- If the Allergen is a Drug (as identified by the Reaction Type Code), the Allergen Code and Allergen Group Code **SHALL** conform to the Medication Identification requirements as outlined in the Medication Activity template.
- If the Allergen is not a Drug, then the allergen Code **MAY** be coded using any recognized coding system.
  - If the source system does contain a code for the Allergen from a recognized coding system then the Allergen Code element **SHALL** be repeated for each recognized code system populated.
  - The receiving system **MAY** support receipt of coded Allergens using alternative recognized coding systems.

Allergy Clinical Status Code Comments

Allergies with a clinical status of 'Erroneous' are considered to be inactive, with the added provision that they should no longer be displayed in the patient's allergy list. If the status is ‘Refuted’ then this should generally be displayed since there may be other data sources that continue to show the allergy status to be active

If the status field is blank then readers should likely exercise caution in interpreting the allergy as likely pertinent.

Allergies Not Reviewed versus No Allergies

It is important to differentiate between affirmatively stating that a patient has no known allergies versus either not including allergies in the record (for example a request for service document where the allergies are not considered relevant to the service) or asserting that allergies were not reviewed and are unknown.

Allergies not reviewed

If the allergies are not reviewed and the sending system does not have any allergy records then a note to that effect should be included in the section Text as shown below. The Sending System **MAY** also send this information in the encounter notes.

```
<section>
   <code code="008" codeSystem=" 2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Allergies & Intolerances List"/>
   <title> Allergies & Intolerances List </title>
   <text>
      <paragraph>Allergies not reviewed</paragraph>
   </text>
</section>
```

Figure 37: Example "Allergies not reviewed"

Allergies Reviewed, None Identified

If the allergies are reviewed and none are identified then a note to that effect should be included in the section Text as shown below. The Sending System **MAY** also send this information in the encounter notes.

```
<section>
   <code code="008" codeSystem=" 2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Allergies & Intolerances List"/>
   <title> Allergies & Intolerances List </title>
   <text>
      <paragraph>Allergies reviewed and none identified</paragraph>
   </text>
</section>
```

Figure 38: Example "Allergies Reviewed & None Identified"

If the sending provider has created a record in the Reaction List the following **MAY** be sent to indicate a lack of allergies identified including the date that the lack of allergies is documented.

```
   <entry typeCode="COMP">
     <act moodCode="EVN" classCode="ACT">
       <id extension="123" root="2.16.840.1.113883.3.1818.10.2.10.1"/>
       <code nullFlavor="NA"/>

<!-- Allergen Code -->
       <participant typeCode="CSM" contextControlCode="OP">
          <participantRole classCode="MANU">
            <playingEntityChoice classCode="MMAT" determinerCode="KIND">
              <code nullFlavor="OTH" displayName="No known allergies"
               codeSystem="2.16.840.1.113883.6.96"
               codeSystemName="snomed-CT"/>
            </playingEntityChoice>
          </participantRole>
        </participant>

<!-- Reported Comment -->
        <entryRelationship typeCode="COMP">
          <observation classCode="OBS" moodCode="EVN">
            <code code="48767-8" codeSystem=" 2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Reported Comment"/>
            <value xsi:type="ST">Jane Doe, Mother, reports that patient has no known
allergies.</value>
          </observation>
        </entryRelationship>

<!-- Clinical Status -->
        <entryRelationship typeCode="COMP">
          <observation classCode="OBS" moodCode="EVN">
            <code code="ALLCLINSTS" codeSystem="2.16.840.1.113883.3.1818.10.2.8.1"
codeSystemName="AEDAMS ObservationType" displayName="Allergy Clinical Status Code"/>
            <value xsi:type="CD" code="C"
codeSystem="2.16.840.1.113883.3.1818.10.2.8.2" codeSystemName="AEDAMS
AllergyClinicalStatus" displayName="Confirmed"/>
          </observation>
        </entryRelationship>

<!-- Documented Date -->
        <entryRelationship typeCode="COMP">
          <observation classCode="OBS" moodCode="EVN">
            <code code="DOCDATE" codeSystem="2.16.840.1.113883.3.1818.10.2.8.1"
codeSystemName="AEDAMS ObservationType" displayName="DocumentedDate"/>
            <effectiveTime value="20120201"/>
          </observation>
        </entryRelationship>
      </observation>
    </entry>
```

Figure 39: Example "Allergies Reviewed & None Identified – structured data"

Allergies not included in document

If the sending provider decides to not include allergies in a document regardless of if they have been captured in the source system; then the source system **SHALL NOT** include an Allergy Section in the document.

A receiving system processing a document that does not have an Allergies & Intolerances section **SHALL NOT** assume that there are no allergies for the patient; only that the Author of the document did not choose to include this information.

Table 59: Allergy Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3611		@typeCode	M:1..1	
3612		templateId	O:0..*	II
3613	**Allergy Problem Act**	act	R:1..1	
3614		@classCode	M:1..1	
3615		@moodCode	M:1..1	
3616	**Record ID**	id	R:1..1	II
3618	**Allergy/Intolerance Status** The status of the Allergy/Intolerance.	statusCode	R:1..1	CS
3619	**Report/Documented Date** The date when the allergy or adverse reaction was recorded on the patient chart.	effectiveTime	R:1..1	IVL_TS
3620	**Allergy/Intolerance Observation Details**	entryRelationship	R:1..1	
3621		@typeCode	M:1..1	
3622		observation	R:1..1	
3623		@classCode	M:1..1	
3624		@moodCode	M:1..1	
3625	**Onset Date & Resolved Date** The effective date/time of the allergy or intolerance.	effectiveTime	R:1..1	IVL_TS
3626	**Adverse Event Type Code** Identifies the Allergen category (Drug, Food & Environment) as well as the category of the reaction (Allergy or Intolerance).	code	R:1..1	CD
3628	**Allergen**	participant	R:1..1	
3629		@typeCode	M:1..1	
3630		@contextControlCode	O:1..1	
3631	**Allergen Detail**	participantRole	O:0..*	
3632		@classCode	M:1..1	
3633		playingEntity	O:0..1	
3634		@classCode	M:1..1	
3635		@determinerCode	M:1..1	
3636	**Coded Allergen**	code	R:1..1	CE
3637	**Free Text Allergen**	name	R:1..1	PN
3638	**Allergen Group** Identification of the group of drugs to which the specific drug identified in the Allergen Code or Allergen Name field belongs (e.g. Penicillin for Drug Amoxicillin). • Required if Reaction Type Code is “DALG”, “DINT” or “DNAINT”.	entryRelationship	R:1..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3639		@typeCode	M:1..1	
3640		observation	M:1..1	
3641		@classCode	M:1..1	
3642		@moodCode	M:1..1	
3643		code	M:1..1	CD
3644	**Allergen Group Value**	value	M:1..1	CD
3645	**Comment** Information regarding the source and timing of the reported reaction. For example: name of person reporting the allergy, the relationship of the reporter to the patient (e.g. mother) and any other comments regarding reliability of the reporting.	entryRelationship (Comment Observation)	O:0..1	
3646	**Reaction** Coded identification of the specific reaction(s) that is experienced by a patient when exposed to the Allergen (e.g. Hives, anaphylaxis) including the severity of the specific reaction.	entryRelationship (Reaction Observation)	O:0..1	
3647	**Allergy/Intolerance Severity** This indicates the overall severity of a patient's reaction to the Allergen as identified in the Allergen Code & Name fields. • If Severity is unknown then NullFlavor "UNK" SHALL be sent <code nullFlavor="UNK"/>.	entryRelationship (Severity Observation)	R:1..1	
3648	**Allergy Clinical Status** This indicates the verification status for the allergy (e.g. confirmed, refuted).	entryRelationship	R:1..1	
3649		@typeCode	M:1..1	
3650		observation	R:1..1	
3651		@classCode	M:1..1	
3652		@moodCode	M:1..1	
3653	**Clinical Status Observation Code**	code	R:1..1	CD
3654	**Free Text Clinical Status**	text	R:1..1	ED
3655	**Coded Clinical Status**	value	R:1..1	CD

An Allergy Observation (`Act`) `element:`

1) **SHALL** contain exactly one [1..1] **`@typeCode`**`="COMP"` component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3611].
2) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3612] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.3.9"` [CONF:3612.12].
3) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`act`** [CONF:3613].
   a) **SHALL** contain exactly one [1..1] **`@classCode`**`="ACT"` act (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3614].

b) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3615].
c) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **id** [CONF:3616].
d) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **statusCode**, which **SHALL** be selected from ValueSet x_ActStatusActiveComplete 2.16.840.1.113883.1.11.19890 **STATIC** [CONF:3618] such that it,
   i) **SHALL** be constrained to either Active or Completed status codes [CONF:3618.34].
e) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **effectiveTime** [CONF:3619].
f) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **entryRelationship** [CONF:3620].
   i) **SHALL** contain exactly one [1..1] **@typeCode**="COMP" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3621].
   ii) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **{CDAR2}** **observation** [CONF:3622].
      (1) **SHALL** contain exactly one [1..1] **@classCode**="OBS" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3623].
      (2) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3624].
      (3) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **effectiveTime** [CONF:3625] such that it,
         (a) **SHALL** contain exactly one [1..1] **low** value to indicate the Start Date/Time and **MAY** contain zero or one [0..1] **high** values to indicate the End Date/Time [CONF:3625.50].
      (4) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **code**, which **SHOULD** be selected from ValueSet ReactionTypeCode 2.16.840.1.113883.3.3068.10.8.18 **DYNAMIC** [CONF:3626].
      (5) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **participant** [CONF:3628].
         (a) **SHALL** contain exactly one [1..1] **@typeCode**="CSM" consumable (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:3629].
         (b) **MAY** contain zero or one [1..1] **{CDAR2}** **@contextControlCode**="OP" overriding propagating (CodeSystem: ContextControl 2.16.840.1.113883.5.1057) [CONF:3630].
         (c) **MAY** contain zero or more [0..*] **{CDAR2}** **participantRole** [CONF:3631].
            (i) **SHALL** contain exactly one [1..1] **@classCode**="MANU" manufactured product (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:3632].
            (ii) **MAY** contain zero or one [0..1] **{CDAR2}** **playingEntity** [CONF:3633].
               1. **SHALL** contain exactly one [1..1] **@classCode**="MMAT" manufactured material (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3634].
               2. **SHALL** contain exactly one [1..1] **@determinerCode**="KIND" kind (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3635].
               3. **SHALL** contain exactly one (or a nullFlavor value) [1..1] **code**, which **SHALL** be selected from ValueSet AllergenEntityCode 2.16.840.1.113883.3.3068.10.8.9 **STATIC** [CONF:3636].
               4. **SHALL** contain exactly one (or a nullFlavor value) [1..1] **name** [CONF:3637].
      (6) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **entryRelationship** [CONF:3638].
         (a) **SHALL** contain exactly one [1..1] **@typeCode**="COMP" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3639].
         (b) **SHALL** contain exactly one [1..1] **observation** [CONF:3640].

(i) **SHALL** contain exactly one [1..1] **@classCode**="OBS" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3641].
(ii) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3642].
(iii) **SHALL** contain exactly one [1..1] **code**="ALRGRP" allergen group observation (CodeSystem: ActCode 2.16.840.1.113883.5.4) [CONF:3643].
(iv) **SHALL** contain exactly one [1..1] **value**, which **SHALL** be selected from ValueSet ClinicalDrug 2.16.840.1.113883.2.20.3.29 **DYNAMIC** [CONF:3644].

(7) **MAY** contain zero or one [0..1] **entryRelationship** [CONF:3645] such that it,
(a) **SHALL** contain exactly one [1..1] Comment Observation (2.16.840.1.113883.3.163.99.4.4.3) [CONF:3645.1].

(8) **MAY** contain zero or one [0..1] **entryRelationship** [CONF:3646] such that it,
(a) **SHALL** contain exactly one [1..1] Reaction Observation (2.16.840.1.113883.3.163.99.4.4.13) [CONF:3646.1].

(9) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **entryRelationship** [CONF:3647] such that it,
(a) **SHALL** contain exactly one [1..1] Severity Observation (2.16.840.1.113883.3.163.99.4.4.9) [CONF:3647.1].

(10) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **entryRelationship** [CONF:3648].
(a) **SHALL** contain exactly one [1..1] **@typeCode**="SUBJ" subject (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3649].
(b) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **{CDAR2}** **observation** [CONF:3650].
(i) **SHALL** contain exactly one [1..1] **@classCode**="OBS" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3651].
(ii) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3652].
(iii) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **code**="CLINSTAT" Clinical Status (CodeSystem: ObservationType-CA-Pending 2.16.840.1.113883.3.3068.10.6.3) [CONF:3653].
(iv) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **text** [CONF:3654].
(v) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **value**, which **SHALL** be selected from ValueSet AllergyIntoleranceStatusCode 2.16.840.1.113883.2.20.3.211 **DYNAMIC** [CONF:3655].

The following XML example outlines how to use the Allergy Observation template:

```
<entry typeCode="COMP" contextConductionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.3.9"/>
    <!--Allergy and Intolerance Observation-->
    <act classCode="ACT" moodCode="EVN">
        <id extension="1" root="1.2.3.4"/>
        <code nullFlavor="NA"/>
        <statusCode code="active"/>
        <effectiveTime value="20120201"/>
        <entryRelationship typeCode="COMP" contextConductionInd="true">
            <observation classCode="OBS" moodCode="EVN">
                <code code="FA" displayName="Food Allergy"
codeSystem="2.16.840.1.113883.5.4"
                    codeSystemName="HL7 ActCode"/>
                <effectiveTime>
                    <low value="20110101"/>
                </effectiveTime>
                <participant typeCode="CSM" contextControlCode="OP">
                    <participantRole classCode="MANU">
                        <playingEntity classCode="MMAT" determinerCode="INSTANCE">
                            <code code="256349002" displayName="Peanut - dietary
(substance)"
                                codeSystem="2.16.840.1.113883.6.96"
                                codeSystemName="SNOMED CT"/>
                        </playingEntity>
                    </participantRole>
                </participant>
                <entryRelationship typeCode="COMP" contextConductionInd="true">
                    <templateId root="2.16.840.1.113883.3.163.99.4.4.13"/> <!--
Reaction Observation -->
                   ….
                </entryRelationship>
                <entryRelationship typeCode="COMP" contextConductionInd="true">
                    <templateId root="2.16.840.1.113883.3.163.99.4.4.9"/> <!--
Severity Observation -->
                   ….
                </entryRelationship>
                <entryRelationship typeCode="SUBJ" contextConductionInd="true"
inversionInd="true">
                    <templateId root="2.16.840.1.113883.3.163.99.4.4.3"/> <!-- Comment
Observation -->
                   ….
                </entryRelationship>
                <entryRelationship typeCode="SUBJ" contextConductionInd="true">
                    <observation classCode="OBS" moodCode="EVN">
                        <code code="CLINSTAT"
codeSystem="2.16.840.1.113883.3.1818.10.6.2" codeSystemName="ObservationType-CA-
Pending"/>
                        <value xsi:type="CD" code="active"
codeSystem="2.16.840.1.113883.2.20.3.211"
codeSystemName="AllergyIntoleranceStatusCode"/>
                    </observation>
                </entryRelationship>
            </observation>
        </entryRelationship>
    </act>
</entry>
```

Figure 40: Allergy Observation entry example

7.3 CARE HISTORY EVENT

[Observation: templateId 2.16.840.1.113883.3.163.99.4.3.6(closed)]

Table 60: Care History Event Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Care History [with entries]	Comment Observation Outcome Observation Qualifier Observation Reason Observation

The Care History Event template is used to exchange history of care or interventions that have been performed on the patient. The term "Intervention" is used in the Care History section to indicate "Treatment", "Procedure", "Investigation" or other type of act that is being communicated.

Table 61: Care History Event Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3656		@typeCode	M:1..1	
3657		@contextConductionInd	M:1..1	
3658		templateId	O:0..*	II
3659		procedure	R:1..1	
3660		@classCode	M:1..1	
3661		@moodCode	M:1..1	
3662	**Record ID** The internal identifier of the Care Event record.	id	M:1..1	II
3663	**Care Event Code/Name** The code associated with the Care Event including the coding system used and the display name associated with the code by the coding system.	code	R:1..1	CD
3664	**Care Event Name** The name or short description for the Care Event. If the Care Event Code is NullFlavor, this element SHALL contain a Name or Short Description of the Care Event as entered by the provider.	text	R:1..*	ED
3665	**Care Event Status** The status of the Care Event.	statusCode	R:1..1	CS
3666	**Care Event Start and End Date/Time** The start date/time (and end date/time, if available) that the Care Event occurred.	effectiveTime	R:1..1	IVL_TS
3668	**Care Event Reason** The Reason or indication for performing the Care Event.	entryRelationship (Reason Observation)	R:0..1	
3669	**Care Event Qualifier** Qualifiers relevant to the Care Event such as laterality, approach, method, meta data, references etc.	entryRelationship (Qualifier Observation)	O:0..*	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
	Qualifiers are communicated using the Observation structure allowing for free text or coded qualifiers as well as signatures.			
3670	**Care Event Comment** Comments or supporting information relevant to the Care Event that is not already included in the other data elements. Comments are communicated using the Observation structure allowing for free text or coded comments as well as signatures.	`entryRelationship (Comment Observation)`	O:0..*	
3671	**Care Event Outcome / Results** The results or observations from the Care Event. Results are communicated using the Observation structure allowing them to be links (to attachments or result records), free text or coded.	`entryRelationship (Outcome Observation)`	O:0..*	
3672	**Follow-up Encounter** Care Event Follow-up includes any follow-up information following an event including any encounters (with date and location), comments, and instructions.	`entryRelationship`	O:0..*	
3673		`@typeCode`	M:1..1	
3674		`encounter`	M:1..1	
3675		`@classCode`	M:1..1	
3676		`@moodCode`	M:1..1	
3677	**Follow-up Date** The date/time by which follow up diagnostic services are expected to have been provided.	`effectiveTime`	R:1..1	IVL_TS
3678	**Follow-up Encounter Comments**	`entryRelationship`	R:0..1	
3679		`@typeCode`	M:1..1	
3680		`observation`	R:1..1	
3681		`@classCode`	M:1..1	
3682		`@moodCode`	M:1..1	
3683	**Code identifying Observation type**	`code`	M:1..1	CD
3684	**Follow-up Comments** Comments or instructions for follow-up (e.g. reason for follow-up, follow-up in 6 months to check pacemaker).	`text`	O:0..1	ED

A Care History Event (`Observation) element:`

1) **SHALL** contain exactly one [1..1] **`@typeCode`**`="COMP"` component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3656].
2) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:3657].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3658] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.3.6"` [CONF:3658.12].
4) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`procedure`** [CONF:3659].

a) **SHALL** contain exactly one [1..1] **@classCode**="PROC" procedure (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3660].
b) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3661].
c) **SHALL** contain exactly one [1..1] **id** [CONF:3662].
d) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **code**, which **SHOULD** be selected from ValueSet Procedure 2.16.840.1.113883.3.3068.10.8.11 **DYNAMIC** [CONF:3663].
e) **SHALL** contain one or more (or a nullFlavor value) [1..*] **text** [CONF:3664].
f) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **statusCode**, which **SHALL** be selected from ValueSet x_ActStatusActiveComplete 2.16.840.1.113883.1.11.19890 **STATIC** [CONF:3665] such that it,
    i) **SHALL** be constrained to either Active or Completed status codes [CONF:3665.34].
g) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **effectiveTime** [CONF:3666] such that it,
    i) **SHALL** contain exactly one [1..1] **low** value to indicate the Start Date/Time and **MAY** contain zero or one [0..1] **high** values to indicate the End Date/Time [CONF:3666.50].
h) **SHALL** contain zero or one if available [0..1] **entryRelationship** [CONF:3668] such that it,
    i) **SHALL** contain exactly one [1..1] Reason Observation (2.16.840.1.113883.3.163.99.4.4.7) [CONF:3668.1].
i) **MAY** contain zero or more [0..*] **entryRelationship** [CONF:3669] such that each,
    i) **SHALL** contain exactly one [1..1] Qualifier Observation (2.16.840.1.113883.3.163.99.4.4.12) [CONF:3669.1].
j) **MAY** contain zero or more [0..*] **entryRelationship** [CONF:3670] such that each,
    i) **SHALL** contain exactly one [1..1] Comment Observation (2.16.840.1.113883.3.163.99.4.4.3) [CONF:3670.1].
k) **MAY** contain zero or more [0..*] **{CDAR2}** **entryRelationship** [CONF:3671] such that each,
    i) **SHALL** contain exactly one [1..1] Outcome Observation (2.16.840.1.113883.3.163.99.4.4.15) [CONF:3671.1].
l) **MAY** contain zero or more [0..*] **entryRelationship** [CONF:3672].
    i) **SHALL** contain exactly one [1..1] **@typeCode**="COMP" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3673].
    ii) **SHALL** contain exactly one [1..1] **encounter** [CONF:3674].
        (1) **SHALL** contain exactly one [1..1] **@classCode**="ENC" encounter (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3675].
        (2) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3676].
        (3) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **effectiveTime** [CONF:3677] such that it,
            (a) **MAY** be a partial date conforming to the TS data type constraints [CONF:3677.62].
        (4) **SHALL** contain zero or one if available [0..1] **entryRelationship** [CONF:3678].
            (a) **SHALL** contain exactly one [1..1] **@typeCode**="COMP" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3679].
            (b) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **{CDAR2}** **observation** [CONF:3680].
                (i) **SHALL** contain exactly one [1..1] **@classCode**="OBS" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3681].
                (ii) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3682].

(iii) **SHALL** contain exactly one [1..1] **code** [CONF:3683].

(iv) **MAY** contain zero or one [0..1] **text** [CONF:3684].

The following XML example outlines how to use the Care History Event template:

```
<entry typeCode="COMP" contextConductionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.3.6"/>
    <procedure classCode="PROC" moodCode="EVN">
        <id extension="1" root="1.2.3.4"/>
        <code code="418903008" codeSystem="2.16.840.1.113883.6.96"
codeSystemName="SNOMED-CT " displayName="Left ventriculogram"/>
        <text>Coronary angiogram and left ventriculogram</text>
        <statusCode code="complete"/>
        <effectiveTime value="20130313"/>
        <!-- Care Event Reason  -->
        <entryRelationship typeCode="RSON" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.7"/>  <!-- Reason
Observation -->
            ….
        </entryRelationship>
        <!-- Care Event Comment -->
        <entryRelationship typeCode="SUBJ" contextConductionInd="true"
inversionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.3"/> <!-- Comment
Observation -->
            ….
        </entryRelationship>
        <!-- Outcome Observation with attachment -->
        <entryRelationship typeCode="SUBJ" contextConductionInd="true"
inversionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.15"/> <!-- Outcome
Observation -->
            ….
        </entryRelationship>
        <!-- Follow-up Encounter Comments -->
        <entryRelationship typeCode="SUBJ" contextConductionInd="true"
inversionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.3"/>
            ….
        </entryRelationship>
    </procedure>
</entry>
```

Figure 41: Care History Event entry example

7.4 CARE PLAN EVENT

[Observation: templateId 2.16.840.1.113883.3.163.99.4.3.10(closed)]

Table 62: Care Plan Event Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Care Plan [with entries]	Author Participation Comment Observation Outcome Observation Performer Participation Reason Observation

The Care Plan Event template is used to exchange future orders or activities that are planned to be performed on the patient.

Table 63: Care Plan Event Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3686		@typeCode	M:1..1	
3687		@contextConductionInd	M:1..1	
3688		templateId	R:1..1	II
3689		observation	R:1..1	
3690		@classCode	M:1..1	
3691		@moodCode	M:1..1	
3692	**Record ID**	id	M:1..1	II
3693	**Care Plan Activity Code**	code	R:1..1	CD
3694	**Care Plan Activity Name / Type** The title, name or short description for the activity/order when it is not coded. For example, “Physiotherapy”.	text	R:1..1	ED
3695	**Care Plan Activity Date/Time** The date (and time if available) that the order was placed or that the activity is to be performed.	effectiveTime	M:1..1	IVL_TS
3696	**Care Plan Activity Status** The status of the activity/order (e.g. Complete).	statusCode	R:0..1	CS
3697	**Care Plan Activity Priority** The activity/order of the priority (e.g. STAT).	priorityCode	R:0..1	CE
3698	**Care Plan Activity Priority Notes** A note or comment regarding the priority of the activity/order.	entryRelationship	R:0..1	
3699		@typeCode	M:1..1	
3700		observation	R:1..1	
3701		@classCode	M:1..1	
3702		@moodCode	M:1..1	
3703	**Activity Priority Notes Code**	code	M:1..1	CD
3704	**Free Text Activity Priority Notes**	text	R:1..1	ED
3705	**Care Plan Activity Reason** The Reason or indication for the Activity/Order.	entryRelationship (Reason Observation)	R:0..*	
3706	**Care Plan Activity Comments** Comments or supporting information relevant to the activity/order.	entryRelationship (Comment Observation)	R:0..*	
3707	**Care Plan Activity Ordering Provider** The author of the activity/order or ordering provider.	author (Author Participation)	R:1..*	
3708	**Care Plan Activity Performer** The identification of the person or organization that is expected to fulfill the activity/order.	performer (Performer Participation)	R:1..*	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3709	**Care Plan Activity Outcome** The report, results or outcome of the activity/order.	`entryRelationship (Outcome Observation)`	R:0..1	

A Care Plan Event (`Observation`) `element:`

1) **SHALL** contain exactly one [1..1] **`@typeCode`**`="COMP"` component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3686].
2) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:3687].
3) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`templateId`** [CONF:3688] such that it,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.3.10"` [CONF:3688.12].
4) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`observation`** [CONF:3689].
   a) **SHALL** contain exactly one [1..1] **`@classCode`**`="OBS"` observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3690].
   b) **SHALL** contain exactly one [1..1] **`@moodCode`**`="RQO"` request (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3691].
   c) **SHALL** contain exactly one [1..1] **`id`** [CONF:3692].
   d) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`code`** [CONF:3693].
   e) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`text`** [CONF:3694].
   f) **SHALL** contain exactly one [1..1] **`effectiveTime`** [CONF:3695] such that it,
      i) **SHALL** contain exactly one [1..1] **`low`** value to indicate the Start Date/Time and **MAY** contain zero or one [0..1] **`high`** values to indicate the End Date/Time [CONF:3695.50].
      ii) **MAY** be a partial date conforming to the TS data type constraints [CONF:3695.62].
   g) **SHALL** contain zero or one if available [0..1] **`statusCode`**, which **SHALL** be selected from ValueSet ActStatus 2.16.840.1.113883.1.11.159331 **STATIC {CDAR2}** [CONF:3696].
   h) **SHALL** contain zero or one if available [0..1] **`priorityCode`** [CONF:3697].
   i) **SHALL** contain zero or one if available [0..1] **`entryRelationship`** [CONF:3698].
      i) **SHALL** contain exactly one [1..1] **`@typeCode`**`="COMP"` component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3699].
      ii) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`observation`** [CONF:3700].
         (1) **SHALL** contain exactly one [1..1] **`@classCode`**`="OBS"` observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3701].
         (2) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3702].
         (3) **SHALL** contain exactly one [1..1] **`code`**`="OrderPriorityNotes"` Order Priority Notes (CodeSystem: ObservationType-CA-Pending 2.16.840.1.113883.3.3068.10.6.3) [CONF:3703].
         (4) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`text`** [CONF:3704].
   j) **SHALL** contain zero or more if available [0..*] **`entryRelationship`** [CONF:3705] such that each,
      i) **SHALL** contain exactly one [1..1] Reason Observation `(2.16.840.1.113883.3.163.99.4.4.7)` [CONF:3705.1].
   k) **SHALL** contain zero or more if available [0..*] **`entryRelationship`** [CONF:3706] such that each,
      i) **SHALL** contain exactly one [1..1] Comment Observation `(2.16.840.1.113883.3.163.99.4.4.3)` [CONF:3706.1].

l) **SHALL** contain one or more (or a `nullFlavor` value) [1..*] **`author`** [CONF:3707] such that each,
   i) **SHALL** contain exactly one [1..1] Author Participation (`2.16.840.1.113883.3.163.99.4.4.4`) [CONF:3707.1].

m) **SHALL** contain one or more (or a `nullFlavor` value) [1..*] **`performer`** [CONF:3708] such that each,
   i) **SHALL** contain exactly one [1..1] Performer Participation (`2.16.840.1.113883.3.163.99.4.4.11`) [CONF:3708.1].

n) **SHALL** contain zero or one if available [0..1] **`entryRelationship`** [CONF:3709] such that it,
   i) **SHALL** contain exactly one [1..1] Outcome Observation (`2.16.840.1.113883.3.163.99.4.4.15`) [CONF:3709.1].

The following XML example outlines how to use the Care Plan Event template:

```
<entry typeCode="COMP" contextConductionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.3.10"/>
    <!-- Care Plan Event -->
    <observation classCode="OBS" moodCode="RQO">
        <id extension="1" root="1.2.3.4"/>
        <code code="1232" codeSystem="2.16.840.1.113883.6.1" codeSystemName="tbd"
displayName="GI Consult"/>
        <text>GI Consult</text>
        <statusCode code="Active"/>
        <effectiveTime value="20130218"/>
        <priorityCode code="Routine"></priorityCode>
        <!--Performer Participation -->
        <performer typeCode="PRF">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.11"/>
            <!--Performer Participation -->
           ….
        </performer>
        <!-- Priority Notes Observation -->
        <entryRelationship typeCode="RSON" contextConductionInd="true">
            <observation classCode="OBS" moodCode="EVN">
                <code code="OrderPirorityNotes" displayName="Order Priority Notes"
codeSystem="2.16.840.1.113883.3.1818.10.6.99992"
                    codeSystemName="ObservateionType-CA-Pending" />
                <text>Priority is routine; however, patient is scheduled for extended
travel starting July 2013;
                    please schedule before this date if possible.</text>
            </observation>
        </entryRelationship>
        <!-- Reason Observation -->
        <entryRelationship typeCode="RSON" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.7"/>
            ….
        </entryRelationship>
        <!-- Comment Observation -->
        <entryRelationship typeCode="SUBJ" contextConductionInd="true"
inversionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.3"/>
            ….
        </entryRelationship>
    </observation>
</entry>
```

Figure 42: Care Plan Event entry example

7.5 DEMOGRAPHICS & ADMINISTRATIVE INFORMATION OBSERVATION

`[Observation: templateId 2.16.840.1.113883.3.163.99.4.3.2(closed)]`

Table 64: Demographics & Administrative Information Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Demographics & Administrative Information [with entries]	N/A

The Demographics & Administrative Information Observation template describes additional demographic and administrative information that is relevant to the document and is not part of the CDA document header. This template is a generic observation template that may include any number of coded or textual demographic and administrative observations.

Table 65: Demographics & Administrative Information Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3711		`@typeCode`	M:1..1	
3712		`templateId`	M:1..1	II
3713		`observation`	M:1..1	
3714		`@classCode`	M:1..1	
3715		`@moodCode`	M:1..1	
3716	**Record ID**	`id`	M:1..1	II
3718	**Information Text** The textual description of the observation question.	`text`	M:1..1	ED
3719	**Value** The observed value.	`value`	M:1..1	ANY
3720	**Effective Time** The effective time of the observation. I.e. either when the observation was made, or when the information in the observation is relevant.	`effectiveTime`	R:1..1	IVL_TS

A Demographics & Administrative Information Observation (`Observation) element:`

1) **SHALL** contain exactly one [1..1] **`@typeCode`**`="COMP"` component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3711].
2) **SHALL** contain exactly one [1..1] **`templateId`** [CONF:3712] such that it,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.3.2"` [CONF:3712.12].
3) **SHALL** contain exactly one [1..1] **`observation`** [CONF:3713].
   a) **SHALL** contain exactly one [1..1] **`@classCode`**`="OBS"` observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3714].
   b) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3715].
   c) **SHALL** contain exactly one [1..1] **`id`** [CONF:3716].
   d) **SHALL** contain exactly one [1..1] **`text`** [CONF:3718].
   e) **SHALL** contain exactly one [1..1] **`value`** [CONF:3719].

f) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`effectiveTime`** [CONF:3720] such that it,
   i) **MAY** be a partial date conforming to the TS data type constraints [CONF:3720.62].

The following XML example outlines how to use the Demographics & Administrative Information Observation template:

```
<entry typeCode="COMP" contextConductionInd="true">
   <templateId root="2.16.840.1.113883.3.163.99.4.3.2"/>
   <!-- Demographics & Administrative Information Observation -->
      <observation classCode="OBS" moodCode="EVN">
       <code code="52539-4" codeSystem="2.16.840.1.113883.6.1"
       codeSystemName="LOINC"
       displayName="History of Family Member Diseases"/>
       <text>Previous Postal Code</text>
       <value xsi:type="ST">M1M 1M1</value>
      </observation>
</entry>
```

Figure 43: Demographics & Administrative Information Observation entry example

7.6 ENCOUNTER HISTORY EVENT

`[Encounter: templateId 2.16.840.1.113883.3.163.99.4.3.3(closed)]`

Table 66: Encounter History Event Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Encounter History [with entries]	Attachment Comment Observation Provider Participation Reason Observation

The Encounter History Event template describes the interactions between the patient and clinicians. Interactions include in-person encounters, telephone conversations, and email exchanges.

Encounter Note

There is a requirement for the encounter note or comment to support the following attributes:

- More than one comment per encounter;
- Different authors (student, Medical Office Administator (MOA), responsible provider) for each encounter comment;
- Comments may be structured into sections (*e.g.* SOAP) or free text; and
- Comments may be coded (*e.g.* vital signs).

The Encounter Comment is designed as a related observation to the encounter. This allows the comment to be coded or free text and includes the author(s) or informant for the comment.

It is anticipated that each encounter may contain multiple comments; however, each comment will be limited to a single author – the person responsible for the comment. Where there are multiple providers (*e.g.* MOA, Student and Provider) who are contributing to the comment the sending system must either split the comment into each author's content, sending a separate comment attributed to each author, or it must identify a primary or responsible author for the comment.

Whilst capturing the person making each statement is appropriate, it may create an unwieldy and difficult to read document if all data are typed or printed out with authors, codes and dates. The sending system should use the CDA Level 2 human readable structure to ensure that the information in the Encounter Comment is appropriately formatted to be interpretable. The receiving system should ensure that Encounter Comment is captured and displayed appropriately.

Table 67: Encounter History Event Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3721		`@typeCode`	M:1..1	
3722		`@contextConductionInd`	M:1..1	
3723		`templateId`	R:1..1	II
3724		`encounter`	R:1..1	
3725		`@classCode`	M:1..1	
3726		`@moodCode`	M:1..1	
3727	**Encounter ID** Identification of the encounter (including assigning authority) Used to link encounters to other sections (e.g. problem list).	`id`	M:1..1	II
3728	**Encounter Start and End Date/Time** Start and End date/time of the encounter.	`effectiveTime`	M:1..1	IVL_TS
3729	**Encounter Location** Location of the encounter.	`participant`	R:1..1	
3730		`@typeCode`	M:1..1	
3731		`@contextControlCode`	O:1..1	
3732		`participantRole`	O:0..*	
3733		`@classCode`	M:1..1	
3734	**Location identifier**	`id`	R:0..1	II
3735	**Encounter Provider** ID and Name of provider responsible for the encounter.	`participant (Provider Participation)`	R:1..*	
3736	**Encounter Reason** The reasons or indications for the Encounter. This may be represented in the following formats: • Link to the Problem List. • A code (e.g. SNOMED code of suspected problem) • A free text string.	`entryRelationship (Reason Observation)`	R:0..*	
3737	**Encounter Note**	`entryRelationship`	O:0..*	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
	Coded or free text notes captured in the EMR including any contextual information regarding the service from the Health Service Provider. Includes the Encounter Note Signature of the encounter note author.	(Comment Observation)		
3738	**Encounter Attachments** Link to attachments which may be associated with this encounter.	entryRelationship (Attachment)	O:0..*	

An Encounter History Event (Encounter) element:

1) **SHALL** contain exactly one [1..1] **@typeCode**="COMP" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3721].
2) **SHALL** contain exactly one [1..1] **@contextConductionInd** [CONF:3722].
3) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **templateId** [CONF:3723] such that it,
   a) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.3.163.99.4.3.3" [CONF:3723.12].
4) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **{CDAR2}** **encounter** [CONF:3724].
   a) **SHALL** contain exactly one [1..1] **@classCode**="ENC" encounter (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3725].
   b) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3726].
   c) **SHALL** contain exactly one [1..1] **id** [CONF:3727].
   d) **SHALL** contain exactly one [1..1] **effectiveTime** [CONF:3728] such that it,
      i) **SHALL** contain exactly one [1..1] **low** value to indicate the Start Date/Time and **MAY** contain zero or one [0..1] **high** values to indicate the End Date/Time [CONF:3728.63].
      ii) **MAY** be a partial date conforming to the TS data type constraints [CONF:3728.62].
   e) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **participant** [CONF:3729].
      i) **SHALL** contain exactly one [1..1] **@typeCode**="LOC" location (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:3730].
      ii) **MAY** contain zero or one [1..1] **{CDAR2}** **@contextControlCode**="OP" overriding propagating (CodeSystem: ContextControl 2.16.840.1.113883.5.1057) [CONF:3731].
      iii) **MAY** contain zero or more [0..*] **{CDAR2}** **participantRole** [CONF:3732].
         (1) **SHALL** contain exactly one [1..1] **@classCode**="ROL" (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:3733].
         (2) **SHALL** contain zero or one if available [0..1] **id** [CONF:3734].
   f) **SHALL** contain one or more (or a nullFlavor value) [1..*] **participant** [CONF:3735] such that each,
      i) **SHALL** contain exactly one [1..1] Provider Participation (2.16.840.1.113883.3.163.99.4.4.10) [CONF:3735.1].
   g) **SHALL** contain zero or more if available [0..*] **entryRelationship** [CONF:3736] such that each,
      i) **SHALL** contain exactly one [1..1] Reason Observation (2.16.840.1.113883.3.163.99.4.4.7) [CONF:3736.1].
   h) **MAY** contain zero or more [0..*] **entryRelationship** [CONF:3737] such that each,
      i) **SHALL** contain exactly one [1..1] Comment Observation (2.16.840.1.113883.3.163.99.4.4.3) [CONF:3737.1].
   i) **MAY** contain zero or more [0..*] **entryRelationship** [CONF:3738] such that each,

i) **SHALL** contain exactly one [1..1] Attachment (2.16.840.1.113883.3.163.99.4.4.6) [CONF:3738.1].

The following XML example outlines how to use the Encounter History Event template:

```
<entry typeCode="COMP" contextConductionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.3.3"/>
    <!-- Encounter Event -->
    <encounter classCode="ENC" moodCode="EVN">
        <id extension="1" root="2.16.840.1.113883.3.163.2.10.12" />
        <effectiveTime xsi:type="IVL_TS">
            <low value="201102141200"/>
            <high value="201102141230"/>
        </effectiveTime>
        <!-- Encounter Location -->
        <participant typeCode="LOC" contextControlCode="OP">
            <participantRole classCode="SDLOC">
                <id extension="A" root="2.16.840.1.113883.3.163.10.2.10.19" />
            </participantRole>
        </participant>
        <!-- Encounter Provider -->
        <participant typeCode="PRF" contextControlCode="OP">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.10"/>
            ….
        </participant>
        <!-- Encounter Reason -->
        <entryRelationship typeCode="RSON" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.7"/>  <!-- Reason
Observation -->
            ….
        </entryRelationship>
        <!-- Encounter Notes -->
        <entryRelationship typeCode="SUBJ" contextConductionInd="true"
inversionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.3"/> <!-- Comment
Observation -->
            ….
        </entryRelationship>
        <!-- Attachment or Reference -->
        <entryRelationship typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.6"/> <!-- Attachment -->
            ….
        </entryRelationship>
    </encounter>
</entry>
```

Figure 44: Encounter History Event entry example

7.7 IMMUNIZATION OBSERVATION

[Observation: templateId 2.16.840.1.113883.3.163.99.4.3.12(closed)]

Table 68: Immunization Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Immunizations [with entries]	N/A

The Immunization Observation template describes immunization substance administrations that have actually occurred or are intended to occur. Immunization Activities in "INT" mood are reflections of immunizations a clinician intends a patient to receive. Immunization Activities in "EVN" mood reflect immunizations actually received.

Table 69: Immunization Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3739		`@typeCode`	M:1..1	
3740		`@contextConductionInd`	M:1..1	
3741		`templateId`	R:1..1	II
3742		`observation`	R:1..1	
3743		`@classCode`	M:1..1	
3744		`@moodCode`	M:1..1	
3745	**Record ID** Identifier of the immunization record.	`id`	R:0..1	II
3746	**Vaccine Code** The code of the immunization that was administered.	`code`	M:1..1	CD
3747	**Vaccine Text Description** The textual description of the observation question.	`text`	M:1..1	ED
3748	**Vaccine Status** The Vaccine Status is whether or not immunizations are up to date with the patient.	`statusCode`	R:1..1	CS
3749	**Immunization Date** The date that the immunization was administered.	`effectiveTime`	R:1..1	IVL_TS

An Immunization Observation (`Observation`) element:

1) **SHALL** contain exactly one [1..1] **`@typeCode`**="`COMP`" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3739].
2) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:3740].
3) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`templateId`** [CONF:3741] such that it,
   a) **SHALL** contain exactly one [1..1] **`@root`**="`2.16.840.1.113883.3.163.99.4.3.12`" [CONF:3741.12].
4) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`observation`** [CONF:3742].
   a) **SHALL** contain exactly one [1..1] **`@classCode`**="`OBS`" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3743].
   b) **SHALL** contain exactly one [1..1] **`@moodCode`**="`EVN`" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3744].
   c) **SHALL** contain zero or one if available [0..1] **`id`** [CONF:3745].
   d) **SHALL** contain exactly one [1..1] **`code`**, which **SHOULD** be selected from ValueSet AlbertaVaccineCode 2.16.840.1.113883.3.163.99.4.8.6 **DYNAMIC** [CONF:3746].
   e) **SHALL** contain exactly one [1..1] **`text`** [CONF:3747].

f) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`statusCode`**, which **SHALL** be selected from ValueSet x_ActStatusActiveComplete 2.16.840.1.113883.1.11.19890 **STATIC** [CONF:3748] such that it,
   i) **SHALL** be constrained to either `Active` or `Completed` status codes [CONF:3748.34].
g) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`effectiveTime`** [CONF:3749] such that it,
   i) **MAY** be a partial date conforming to the TS data type constraints [CONF:3749.62].

The following XML example outlines how to use the Immunization Observation template:

```
<entry typeCode="COMP" contextConductionInd="true">
   <!-- Immunization Observation -->
   <templateId root="2.16.840.1.113883.3.163.99.4.3.12"/>
   <observation classCode="OBS" moodCode="EVN">
      <id extension="1" root="1.2.3.4"/>
      <code code="396425006" codeSystem="2.16.840.1.113883.6.96"
       codeSystemName="SNOMED-CT" displayName="Influenza virus vaccine"/>
      <text>Influenza virus vaccine, IM</text>
      <statusCode code="Complete"/>
      <effectiveTime value="200911"/>
   </observation>
</entry>
```

Figure 45: Immunization Observation entry example

7.8 LABORATORY OBSERVATION

`[Observation: templateId 2.16.840.1.113883.3.163.99.4.3.13(closed)]`

Table 70: Laboratory Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Laboratory Results & Reports [with entries]	Attachment Comment Observation Performer Participation

The Laboratory Observation template defines the format for the results of observations generated by laboratories. The scope includes observations such as hematology, chemistry, serology, virology, toxicology, microbiology, and pathology observations. The section often includes notable results such as abnormal values or relevant trends, and could contain all results for the period of time being documented.

Laboratory results are typically generated by laboratories providing analytic services in areas such as chemistry, hematology, serology, histology, cytology, Anatomical pathology, microbiology, and/or virology. These observations are based on analysis of specimens obtained from the patient and submitted to the laboratory.

Scanned / Attached Laboratory Results & Reports

Many clinics receive laboratory reports in paper format either directly or through a fax system. These reports are attached to the patient's medical record as image attachments with minimal discrete data

available. Refer to the Attachments template for details on the collection of meta data for encapsulated data reports.

Results Information

The format and structure of laboratory result information is very varied because there are many types of laboratory tests available. Common types of result data that are supported include coded, text, quantity measures, and encapsulated data or attachments.

If results are coded, they could be coded using any number of code systems including SNOMED and specialized clinical scales. Whilst it is important for the sending system to include any information regarding the coding system used for the laboratory result, it is not necessary for the receiving system to support the specific coding system used. The receiving system will use the code value, display name and supporting elements (*e.g.* reference ranges, abnormality flags) to appropriately file and render the results.

For example, an Anatomical Pathology report where the result value may be sent as:

```
<value code="414794006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="snomed-CT"
displayName="myeloproliferative disorder"/>
```

Figure 46: Example Anatomical Pathology Report Result value

Reference Ranges

These specifications provide two mechanisms to communicate reference ranges through the Reference Range Text and Reference Range Value elements. The `text` element is intended to enable the communication of a human readable view of the reference range while the `value` element is intended to enable the communication of the reference in machine processable fashion.

In either case, the Reference Range Interpretation Type Is used to indicate how the observed result compares to the applicable reference range (*e.g*. high or low).

Result Notes

As a consequence of the variability of data in healthcare and localization of lab result testing, some data is commonly sent as part of the Result Notes. The Result Notes element is included to support the communication of any unstructured information relevant to the interpretation of the result.

Test Procedure Coding

There are thousands of possible procedures that can be performed by laboratories. The coding systems used to identify the procedure that is being ordered and the procedure that was actually performed by the laboratory are critical to being able to appropriately interpret the results received. Historically, many laboratories used locally defined coding systems to identify procedures and variants or procedures (for example, based on method of testing). Internationally the LOINC (Logical Observation Identifiers Names and Codes - http://loinc.org/) standard has been recognized to be used for this purpose. In Canada the Infoway Standards Collaborative has created a Canadian implementation of the LOINC standard referred

to as pCLOCD (pan Canadian Laboratory Observation Code Database or pan-Canadian LOINC Observation Code Database). The pCLOCD was created using the LOINC records and attributes that specifically meet Canadian laboratory ordering and reporting requirements. In conjunction with Regenstrief, the LOINC records have been translated into French. This enables the pCLOCD to be published and maintained in both official languages. Currently, the pCLOCD includes records that cover most laboratory domains and that pertain to laboratory testing on humans and non-humans. It is being further developed to include clinical terms that best suit the Electronic Health Record and Medication Management. (http://loinc.org/adopters/canada-health-infoway-inc-inforoute-sante-du-canada-inc.html/)

The AEDAMS specification recommends the use of the pCLOCD codes to communicate the test procedure code.

To support the consistent implementation of pCLOCD, consideration should be given to implementing an appropriate mapping tool such as, for example, the Saskatchewan Automated Mapping Assistant (SAMA). SAMA is designed to enable mapping between regional/local Laboratory Information System (LIS) test codes to the pCLOCD standard.

Table 71: Laboratory Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3826		@typeCode	M:1..1	
3827		templateId	O:0..*	II
3828		observation	R:1..1	
3829	**Result Observation Record ID** Unique and persistent identifier for the Result record (i.e. Accession Number).	id	R:1..1	II
3830	**Result Observation Code** Code identifying the laboratory test or procedure being reported.	code	R:1..1	CD
3831	**Result Name** Name identifying the laboratory test or procedure being reported.	text	R:0..1	ED
3832	**Result Date/Time** Date (and optional time) that the test result was recorded by the Laboratory system.	effectiveTime	R:0..1	IVL_TS
3833	**Result Status** The status of the laboratory results (e.g. Preliminary, Final, Corrected). For valid values, see ResultStatus.	statusCode	R:1..1	CS
3834	**Result Value** The result value. This element may be in various complex formats or data types depending on the test or procedure being reported.	value	R:1..*	ANY
3835	**Interpretation Code** Code indicating the interpretation of the results; also known as the Abnormal flag.	interpretationCode	R:0..*	CE
3836	**Reference Range**	referenceRange	R:0..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
	The range within which the results are interpreted.			
3837		@typeCode	M:1..1	
3838	**Observation Range**	observationRange	O:0..*	
3839		@classCode	M:1..1	
3840		@moodCode	M:1..1	
3841	**Reference Range Interpretation Type** Coded interpretation of the result against the reference range applicable to the test subject (e.g. normal, high, low, etc.)	code	R:0..1	CD
3842	**Reference Range Text** Textual form (for display) of the reference range applicable to the subject of this observation, within which the result is interpreted.	text	R:0..1	ED
3843	**Reference Range Value** Structured form (for processing) of the reference range applicable to the subject of this observation, within which the result is interpreted.	value	R:0..1	ANY
3844	**Resulting Organization** The ID and Name of the performing laboratory organization.	performer (Performer Participation)	R:0..1	
3845	**Result Notes** Comments or notes attached to the results. This includes any interpretive comments. See Observations discussion document.	entryRelationship (Comment Observation)	O:0..*	
3846	**Result Attachments** Attachments pertinent to the laboratory result. Examples include an attachment containing a scanned image of the order, and attachment including a radiological image with the result.	entryRelationship (Attachment)	O:0..*	

A Laboratory Observation (`Observation`) element:

1) **SHALL** contain exactly one [1..1] **`@typeCode`**="`COMP`" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3826].
2) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3827] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**="`2.16.840.1.113883.3.163.99.4.3.13`" [CONF:3827.12].
3) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`observation`** [CONF:3828].
   a) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`id`** [CONF:3829].
   b) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`code`**, which **SHOULD** be selected from ValueSet pCLOCD 2.16.840.1.113883.3.3068.10.8.1 **DYNAMIC** [CONF:3830].
   c) **SHALL** contain zero or one if available [0..1] **`text`** [CONF:3831].
   d) **SHALL** contain zero or one if available [0..1] **`effectiveTime`** [CONF:3832].
   e) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`statusCode`**, which **SHALL** be selected from ValueSet ActStatus 2.16.840.1.113883.1.11.159331 **STATIC {CDAR2}** [CONF:3833].
   f) **SHALL** contain one or more (or a `nullFlavor` value) [1..*] **`value`** [CONF:3834].

g) **SHALL** contain zero or more if available [0..*] **`interpretationCode`**, which **SHALL** be selected from ValueSet ObservationInterpretation 2.16.840.1.113883.2.20.3.78 **STATIC {CDAR2}** [CONF:3835].

h) **SHALL** contain zero or one if available [0..1] **`referenceRange`** [CONF:3836].

i) **SHALL** contain exactly one [1..1] **`@typeCode`**="REFV" reference (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3837].

ii) **MAY** contain zero or more [0..*] **{CDAR2}** **`observationRange`** [CONF:3838].

(1) **SHALL** contain exactly one [1..1] **`@classCode`**="OBS" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3839].

(2) **SHALL** contain exactly one [1..1] **`@moodCode`**="EVN.CRT" event criterion (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3840].

(3) **SHALL** contain zero or one if available [0..1] **`code`**, which **SHALL** be selected from ValueSet ObservationInterpretationNormality 2.16.840.1.113883.1.11.10206 **STATIC {CDAR2}** [CONF:3841].

(4) **SHALL** contain zero or one if available [0..1] **`text`** [CONF:3842].

(5) **SHALL** contain zero or one if available [0..1] **`value`** [CONF:3843].

i) **SHALL** contain zero or one if available [0..1] **`performer`** [CONF:3844] such that it,

i) **SHALL** contain exactly one [1..1] Performer Participation (`2.16.840.1.113883.3.163.99.4.4.11`) [CONF:3844.1].

j) **MAY** contain zero or more [0..*] **{CDAR2}** **`entryRelationship`** [CONF:3845] such that each,

i) **SHALL** contain exactly one [1..1] Comment Observation (`2.16.840.1.113883.3.163.99.4.4.3`) [CONF:3845.1].

k) **MAY** contain zero or more [0..*] **{CDAR2}** **`entryRelationship`** [CONF:3846] such that each,

i) **SHALL** contain exactly one [1..1] Attachment (`2.16.840.1.113883.3.163.99.4.4.6`) [CONF:3846.1].

The following XML example outlines how to use the Laboratory Observation template:

```
<entry typeCode="COMP" contextConductionInd="true"> <!-- Laboratory Observation -->
    <templateId root="2.16.840.1.113883.3.163.99.4.3.13"/>
    <observation classCode="OBS" moodCode="RQO">
        <id root="TBD" extension="AN123"/>
        <code code="717-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Hgb"/>
        <text>Lab Test Result</text>
        <statusCode code="completed"/>
        <effectiveTime value="20120412"/>
        <value xsi:type="INT" value="123"/>
        <interpretationCode nullFlavor="NA"/>
        <performer typeCode="PRF">
            <assignedEntity classCode="ASSIGNED">
                <id root="2.1.1.3.4.5.6" extension="1234567"/>
            </assignedEntity>
        </performer>
        <!-- Result Notes -->
        <entryRelationship typeCode="SUBJ" contextConductionInd="true"
inversionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.3"/> <!-- Comment
Observation -->
            ….
        </entryRelationship>
        <!-- Result Attachment -->
        <entryRelationship typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.6"/> <!-- Attachment -->
            <observationMedia classCode="OBS" moodCode="EVN">
                <id extension="1" root="1.2.3.4"/>
                <value xsi:type="ED" mediaType="application/pdf">
                    <reference value="http://www.anywhere.com/folder1/Report.pdf"/>
                </value>
            </observationMedia>
        </entryRelationship>
        <!-- Result Reference Range -->
        <referenceRange>
            <observationRange>
                <value
                    xsi:type="IVL_PQ">
                    <low
                        value="4.3"
                        unit="10+3/ul"/>
                    <high
                        value="10.8"
                        unit="10+3/ul"/>
                </value>
            </observationRange>
        </referenceRange>
    </observation>
</entry>
```

Figure 47: Laboratory Observation entry example

7.9 LABORATORY OBSERVATION REQUEST ORGANIZER

`[Organizer: templateId 2.16.840.1.113883.3.163.99.4.3.17(closed)]`

Table 72: Laboratory Observation Request Organizer Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Laboratory Report Item [with entries]	Author Participation Comment Observation Result Component Result Organizer

The Lab Observation Request Organizer template defines the lab order information and serves as the grouper for the lab observation results. This maps to the OBR segment content in HL7v2 messaging. Content includes the lab test(s) ordered, the filler order number and associations to ordering provider and any notes pertaining to the order (i.e. NTE segment).
For General Laboratory, the lab test ordered (i.e. ObservationRequest.code) may pertain to many types of observation requests. For example, it could pertain to a Complete Blood Count ordered (i.e. 58410-2), a Sodium test (i.e. 2957-0), or Cholesterol level (i.e. 14647-2).

For Microbiology, the lab test ordered may pertain to the culture ordered (e.g. 625-4 Stool Culture; 630-4 Urine Culture).

For Blood Bank, the lab test ordered may pertain to a blood typing request (e.g. 34532-2 Blood Type and Indirect Antibody Screen).

Entry templates are not used for Anatomical Pathology.

Table 73: Laboratory Observation Request Organizer Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
4505		@typeCode	M:1..1	
4506		templateId	O:0..*	II
4507		organizer	R:1..1	
4508		@classCode	M:1..1	
4509		@moodCode	M:1..1	
4510	**Test Order Identifier** Contains a lab generated unique order identifying number. This maps from OBR-3 Filler Order Number in HL7v2.	id	M:1..1	II
4511	**Test Order Type** The identifier code for the requested observation upon which the results are reported. This maps from OBR-4 Order Code in HL7v2.	code	M:1..1	CD
4512	**Test Status** The status of the order. This maps from OBR-25 Order Status in HL7v2.	statusCode	R:1..1	CS
4513	**Test Effective Date** The effective date/time of the test	effectiveTime	Not Supported	
4514	**Ordering Provider** The provider who ordered the lab tests. This maps from OBR-16 in HL7v2.	author (Author Participation)	O:0..*	
4515	**Order Comments**	component (Comment	O:0..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
		`Observation)`		
4517	**Result Organizer**	`component (Result Organizer)`	R:0..*	
4518	**Result Component**	`component (Result Component)`	R:0..*	

A Laboratory Observation Request Organizer (`Organizer) element:`

1) **SHALL** contain exactly one [1..1] **`@typeCode`**`="COMP"` component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:4505].
2) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:4506] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.3.17"` [CONF:4506.12].
3) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`organizer`** [CONF:4507].
   a) **SHALL** contain exactly one [1..1] **`@classCode`**`="CLUSTER"` cluster (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:4508].
   b) **SHALL** contain exactly one [1..1] **`@moodCode`**`="RQO"` request (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:4509].
   c) **SHALL** contain exactly one [1..1] **`id`** [CONF:4510].
   d) **SHALL** contain exactly one [1..1] **`code`**, which **SHALL** be selected from ValueSet ObservationOrderableLabType 2.16.840.1.113883.2.20.3.164 **DYNAMIC** [CONF:4511].
   e) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`statusCode`**, which **SHALL** be selected from ValueSet ActStatus 2.16.840.1.113883.1.11.159331 **STATIC** [CONF:4512].
   f) **MAY** contain zero or more [0..*] **`author`** [CONF:4514] such that each,
      i) **SHALL** contain exactly one [1..1] Author Participation `(2.16.840.1.113883.3.163.99.4.4.4)` [CONF:4514.1].
   g) **MAY** contain zero or one [0..1] **`component`** [CONF:4515] such that it,
      i) **SHALL** contain exactly one [1..1] Comment Observation `(2.16.840.1.113883.3.163.99.4.4.3)` [CONF:4515.1].
   h) **SHALL** contain zero or more if available [0..*] **`component`** [CONF:4517] such that each,
      i) **SHALL** contain exactly one [1..1] Result Organizer `(2.16.840.1.113883.3.163.99.4.4.14)` [CONF:4517.1].
   i) **SHALL** contain zero or more if available [0..*] **`component`** [CONF:4518] such that each,
      i) **SHALL** contain exactly one [1..1] Result Component `(2.16.840.1.113883.3.163.99.4.4.8)` [CONF:4518.1].

The following XML example outlines how to use the Laboratory Observation Request Organizer template:

```
<organizer classCode="BATTERY" moodCode="RQO">
    <!-- Laboratory Observation Request Organizer -->
    <templateId root='2.16.840.1.113883.3.163.99.4.2.17'/>
    <id root="TBD" extension="AN123"/>
    <code code="58410-2" codeSystem="2.16.840.1.113883.3.3068.10.8.1"
codeSystemName="pCLOCD" displayName="CBC">
        <translation code="CBC" codeSystem="2.1.1.1" codeSystemName="Local"
displayName="Complete Blood Count">
            <originalText>Complete Blood Count</originalText>
        </translation>
    </code>
    <statusCode code="completed"/>
    <!-- Ordering Provider -->
    <author typeCode="AUT" contextControlCode="OP">
        <time value="20140324"/>
        <assignedAuthor classCode="ASSIGNED">
            <id extension="022222" root="2.16.840.1.113883.11.13130"/>
            <code code="MD" codeSystem="2.16.840.1.113883.5.111"
codeSystemName="RoleCode" displayName="Medical Doctor"/>
            <assignedPerson classCode="PSN" determinerCode="INSTANCE">
                <name>
                    <prefix>Dr.</prefix>
                    <given>L</given>
                    <family>Provider</family>
                </name>
            </assignedPerson>
        </assignedAuthor>
    </author>
    <!--Comment Observation-->
    <component typeCode="COMP">
        <observation classCode="OBS" moodCode="EVN">
            <templateId root="2.16.840.1.113883.3.1818.10.4.3"/>
            <code code="48767-8" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Annotation Comment"/>
            <value xsi:type="ST">Comments to LAB:  Pre-Dialysis. Fax to Satellite
Unit.</value>
        </observation>
    </component>
    <component typeCode="COMP">
       ...
    </component>
    <component typeCode="COMP">
        ...
    </component>
    <component typeCode="COMP">
    ...
    </component>
</organizer>
```

Figure 48: Laboratory Observation Request Organizer entry example

7.10 MEDICAL HISTORY OBSERVATION

`[Observation: templateId 2.16.840.1.113883.3.163.99.4.3.7(closed)]`

Table 74: Medical History Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)

Directly Used by Template(s)	Directly Contains Template(s)
Medical History [with entries]	N/A

The Medical History Observation template defines the format for past conditions or diagnoses that may have been observed for the patient.

Table 75: Medical History Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3854		`@typeCode`	M:1..1	
3855		`@contextConductionInd`	M:1..1	
3856		`templateId`	R:1..1	II
3857		`observation`	R:1..1	
3858		`@classCode`	M:1..1	
3859		`@moodCode`	M:1..1	
3860	**Record ID** Unique and persistent Identifier of the observation record.	`id`	R:0..1	II
3861	**Observation Code** The code identifying medical history event being communicated.	`code`	M:1..1	CD
3862	**Observation Text** The textual description of the observation question. This element is required if Observation Code is not provided.	`text`	M:1..1	ED
3863	**Observation Value** The observed value/question response.	`value`	M:1..1	ANY
3864	**Observation Effective Time** The effective time of the observation. I.e. either when the observation was made, or when the information in the observation is relevant.	`effectiveTime`	R:1..1	IVL_TS

A Medical History Observation (`Observation`) element:

1) **SHALL** contain exactly one [1..1] **`@typeCode`**="`COMP`" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3854].
2) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:3855].
3) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`templateId`** [CONF:3856] such that it,
   a) **SHALL** contain exactly one [1..1] **`@root`**="`2.16.840.1.113883.3.163.99.4.3.7`" [CONF:3856.12].
4) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`observation`** [CONF:3857].
   a) **SHALL** contain exactly one [1..1] **`@classCode`**="`OBS`" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3858].
   b) **SHALL** contain exactly one [1..1] **`@moodCode`**="`EVN`" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3859].
   c) **SHALL** contain zero or one if available [0..1] **`id`** [CONF:3860].
   d) **SHALL** contain exactly one [1..1] **`code`**, which **SHOULD** be selected from ValueSet sctProducedure 2.16.840.1.113883.3.3068.10.8.3 **DYNAMIC** [CONF:3861].

e) **SHALL** contain exactly one [1..1] **`text`** [CONF:3862].
f) **SHALL** contain exactly one [1..1] **`value`** [CONF:3863].
g) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`effectiveTime`** [CONF:3864] such that it,
   i) **MAY** be a partial date conforming to the TS data type constraints [CONF:3864.62].

The following XML example outlines how to use the Medical History Observation template:

```
<entry typeCode="COMP" contextConductionInd="true">
   <templateId root="2.16.840.1.113883.3.163.99.4.3.7"/>
   <!-- Medical History Observation -->
   <observation classCode="OBS" moodCode="EVN">
      <id extension="1" root="1.2.3.4"/>
      <code code="27885002" codeSystem="2.16.840.1.113883.6.96"
       codeSystemName="SNOMED" displayName="Atrioventricular block (disorder)"/>
      <text>Complete heart block</text>
      <effectiveTime value="200911"/>
      <value xsi:type="ST">Syncope with pacemaker insertion for 3rd degree heart
       block.</value>
   </observation>
</entry>
```

Figure 49: Medical History Observation entry example

7.11 MEDICAL IMAGING RESULT & REPORT OBSERVATION

`[Observation: templateId 2.16.840.1.113883.3.163.99.4.3.14(closed)]`

Table 76: Medical Imaging Result & Report Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Medical Imaging Results & Reports [with entries]	Attachment Comment Observation Reason Observation

The Medical Imaging Observation template defines the format for the results of observations generated by imaging procedures. The scope includes observations such as x-ray, ultrasound, CT, MRI, angiography, echocardiography and nuclear medicine observations. The section often includes notable results such as abnormal values or relevant trends, and could contain all results for the period of time being documented.

Imaging results are typically generated by a clinician reviewing the output of an imaging procedure, such as where a cardiologist reports the left ventricular ejection fraction based on the review of a cardiac echocardiogram.

The Image Procedure Code element is used to identify the specific procedure that was performed on the patient. If the source system does not contain a code for the procedure, then the Image Procedure Code element **SHALL** be the `NullFlavor` 'OTH' and the Image Procedure Name element **SHALL** be populated.

The receiving system **SHALL** support receipt of coded imaging procedure results. If the receiving system cannot process the `codeSystem` for the Image procedure Code, then the receiving system **SHALL** capture the procedure as a free text entry and **SHALL** store the received code information with the record.

Table 77: Medical Imaging Result & Report Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3772		`@typeCode`	M:1..1	
3773		`@contextConductionInd`	M:1..1	
3774		`templateId`	R:1..1	II
3775		`observation`	R:1..1	
3776		`@classCode`	M:1..1	
3777		`@moodCode`	M:1..1	
3778	**Record ID** Unique identifier for the procedure findings/interpretation/report.	`id`	M:1..1	II
3779	**Image Procedure Code** Code identifying the imaging procedure being reported.	`code`	R:1..1	CD
3780	**Image Procedure Name** Name identifying the imaging procedure being reported. If the Imaging Code is NullFlavor, this element SHALL contain a Name or Short Description of the procedure as known by the source system.	`text`	R:0..1	ED
3781	**Imaging Date** The date that the medical imaging procedure was performed.	`effectiveTime`	O:0..1	IVL_TS
3782	**Indication or Reason for procedure** Reason for the imaging diagnostic procedure(s). This may be represented in the following formats: • Link to the Problem List. • A code (e.g. SNOMED code of suspected problem) • A free text string.	`entryRelationship (Reason Observation)`	O:0..*	
3783	**Imaging Attachments** Any attached files. This includes any external document references and external imaging files.	`entryRelationship (Attachment)`	O:0..*	
3784	**Result Notes** Documentation of the radiology procedure, findings, interpretation, and impression.	`entryRelationship (Comment Observation)`	O:0..*	

A Medical Imaging Result & Report Observation (`Observation`) element:

1) **SHALL** contain exactly one [1..1] **`@typeCode`**`="COMP"` component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3772].
2) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:3773].
3) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`templateId`** [CONF:3774] such that it,

a) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.3.163.99.4.3.14" [CONF:3774.12].

4) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **{CDAR2}** **observation** [CONF:3775].
5) **SHALL** contain exactly one [1..1] **@classCode**="OBS" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3776].
6) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3777].
7) **SHALL** contain exactly one [1..1] **id** [CONF:3778].
8) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **{CDAR2}** **code**, which **SHOULD** be selected from ValueSet ImagingProcedureObservationType 2.16.840.1.113883.3.3068.10.8.16 **DYNAMIC** [CONF:3779].
9) **SHALL** contain zero or one if available [0..1] **text** [CONF:3780].
10) **MAY** contain zero or one [0..1] **{CDAR2}** **effectiveTime** [CONF:3781].
11) **MAY** contain zero or more [0..*] **{CDAR2}** **entryRelationship** [CONF:3782] such that each,
    a) **SHALL** contain exactly one [1..1] Reason Observation (2.16.840.1.113883.3.163.99.4.4.7) [CONF:3782.1].
12) **MAY** contain zero or more [0..*] **{CDAR2}** **entryRelationship** [CONF:3783] such that each,
    a) **SHALL** contain exactly one [1..1] Attachment (2.16.840.1.113883.3.163.99.4.4.6) [CONF:3783.1].
13) **MAY** contain zero or more [0..*] **{CDAR2}** **entryRelationship** [CONF:3784] such that each,
    a) **SHALL** contain exactly one [1..1] Comment Observation (2.16.840.1.113883.3.163.99.4.4.3) [CONF:3784.1].

The following XML example outlines how to use the Medical Imaging Result & Report Observation template:

```
<entry typeCode="COMP" contextConductionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.3.14"/>
    <!--MEDICAL IMAGING RESULT & REPORT OBSERVATION-->
    <observation classCode="OBS" moodCode="EVN">
        <id extension="1" root="1.2.3.4"/>
        <code code="399208008" codeSystem="2.16.840.1.113883.2.20.3.260"
codeSystemName="SNOMED-CT" displayName="Radiographic procedure of chest "/>
        <text>Chest Xray</text>
        <effectiveTime value="20040714"/>
        <!-- Reason Observation -->
        <entryRelationship typeCode="RSON" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.7"/>
            ….
        </entryRelationship>
        <!-- Comment Observation -->
        <entryRelationship typeCode="SUBJ" contextConductionInd="true"
inversionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.3"/>
            ….
        </entryRelationship>
        <!-- Attachment or Reference -->
        <entryRelationship typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.6"/> <!-- Attachment -->
            ….
        </entryRelationship>
    </observation>
</entry>
```

Figure 50: Medical Imaging Result & Report Observation entry example

7.12 MEDICATION ACTIVITY

`[SubstanceAdministration: templateId 2.16.840.1.113883.3.163.99.4.3.16(open)]`

Table 78: Medication Activity Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Medications [with entries]	Comment Observation Medication Identification Reason Observation Unbound Observation

The Medication Activity template defines the structure and format rules to enable the communication of medications including current medications and medication history. The Medication Activity template includes references other templates to identify the drug and the treatment course details. In addition, Medication Record may also be linked to the Problem List to describe the indication(s) or reason(s) for the Medication.

Medication List Record

The Medication Entry template includes the identification of the Medication List Record and the specific drug or medication that is the subject of the record including the strength of the Drug. This template is designed to be flexible to support the variability of information available in the five identified use cases as well as the types of available coding systems.

The Medication Entry template may be used to support medication list management and reconciliation. It includes a Record Type to indicate if the medication is a long term (e.g. chronic, continuous or usual medication) or short term; as well as a date of the last review of the medication. The sending system may filter the medications sent based on the Record status (Active/Complete); the Type (Long term/short term) depending on the requirements of the document (e.g. an episodic document).

The record may be also be communicated alone as a summary of the medications that the patient is or has used without the detail or the prescription.

Record Status

The Record Status element distinguishes if the medication record is active or complete. The Record Status is used to determine if the medication is current and should be included in the Current Medications Section of a document and may be used to filter and sort medications within the EMR. This is also of importance when using graphs to display various types of information when medication use is displayed.

If the Record Type is set to “Short Term”, then the Record Status may be automatically changed to Completed when there are no longer active prescriptions. I.e. all prescriptions have an end date, or duration that is complete.

If the Record Type is set to “Long Term”, then the Status should remain Active until manually changed to Completed by the provider. Consequently, it is valid for a long term medication to be considered active, and to appear on the current medications list, even if there are no active prescriptions.

Medication Effective Time

Medication timing is complex. This template requires that there be a substanceAdministration/effectiveTime valued with a time interval, representing the start and stop dates. Additional effectiveTime elements are optional, and can be used to represent frequency and other aspects of more detailed dosing regimens.

Table 79: Medication Activity Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
4333		`@typeCode`	M:1..1	
4334		`@contextConductionInd`	M:1..1	
4335		`templateId`	M:1..1	II
4336	**Medication Record**	`substanceAdministration`	R:1..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
4337		@classCode	M:1..1	
4338		@moodCode	M:1..1	
4339	**Record ID**	id	M:1..1	II
4340		code	M:1..1	CD
4341	**Record Status**	statusCode	M:1..1	CS
4342	**Duration** A number in the prescription denoting how long a medication is to be administered based on a specific dosage specification. This is an alternative approach to specifying start and stop dates (e.g. 10 days).	effectiveTime	M:1..1	SXCM_TS
4343	**Frequency** A code describing the interval between dosages and use of a particular medication, and the repeating frequency with which the dosage is to be administered or the use repeated (e.g. every 2 hours).	effectiveTime	R:0..1	SXCM_TS
4344	**Number of Repeats**	repeatNumber	R:0..1	IVL_INT
4345	**Route** A Coded value in the prescription denoting the primary method by which a medication is to be administered to the patient (e.g. sublingual).	routeCode	R:0..1	CE
4346	**Approach Side** Coded value for the anatomic site where medication is intended to be administered (e.g. left eye).	approachSiteCode	R:0..1	CD
4347	**Dose** Dose amount of medication intended to be consumed during a single administration. The Dose Amount data type supports a single dose or a range of doses with a high/low value (e.g. 1-2 tsp, 10mg).	doseQuantity	R:0..1	IVL_PQ
4281	**Drug Form** Drug form from the drug database when DIN is provided else the formas entered by the provider (e.g. tablet).	administrationUnitCode	O:0..1	CE
4348	**Drug Information** The specific drug and drug strength that is the subject of the Medication List record.	consumable (Medication Identification)	R:0..1	
4349	**Record Type** An indicator that identifies if this medication record is a “usual medication” (i.e. part of a usual medication list) or if it is short term (i.e. one-time / acute).	entryRelationship (Unbound Observation)	R:1..1	
4350	**Reason/Indication** The reasons or indications for the Medication Event.	entryRelationship (Reason Observation)	R:1..1	
4351	**Medication Record Comments** Notes or comments that the EMR provider may capture related to the medication	entryRelationship (Comment Observation)	O:0..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
	record. This may include notes regarding interactions with other drugs, allergies or conditions as well as notes during medication reconciliation.			

A Medication Activity (`SubstanceAdministration) element:`

1) **SHALL** contain exactly one [1..1] **`@typeCode`**`="COMP"` component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:4333].
2) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:4334].
3) **SHALL** contain exactly one [1..1] **`templateId`** [CONF:4335] such that it,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.3.16"` [CONF:4335.12].
4) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`substanceAdministration`** [CONF:4336].
5) **SHALL** contain exactly one [1..1] **`@classCode`**`="SBADM"` substance administration (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:4337].
6) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:4338].
7) **SHALL** contain exactly one [1..1] **`id`** [CONF:4339].
8) **SHALL** contain exactly one [1..1] **`code`**`="DRUG"` drug therapy (CodeSystem: ActCode 2.16.840.1.113883.5.4) [CONF:4340].
9) **SHALL** contain exactly one [1..1] **`statusCode`**, which **SHALL** be selected from ValueSet x_ActStatusActiveComplete 2.16.840.1.113883.1.11.19890 **STATIC** [CONF:4341].
10) **SHALL** contain exactly one [1..1] **`effectiveTime`** [CONF:4342].
11) **SHALL** contain zero or one if available [0..1] **`effectiveTime`** [CONF:4343].
12) **SHALL** contain zero or one if available [0..1] **`repeatNumber`** [CONF:4344].
13) **SHALL** contain zero or one if available [0..1] **`routeCode`**, which **SHOULD** be selected from ValueSet PINRouteOfAdministrationCode 2.16.840.1.113883.3.163.99.4.8.3 **STATIC** [CONF:4345].
14) **SHALL** contain zero or one if available [0..1] **`approachSiteCode`** [CONF:4346].
15) **SHALL** contain zero or one if available [0..1] **`doseQuantity`** [CONF:4347].
16) **MAY** contain zero or one [0..1] **`administrationUnitCode`**, which **SHALL** be selected from ValueSet PINDosageFormCode 2.16.840.1.113883.3.163.99.4.8.5 **STATIC** [CONF:4281].
17) **SHALL** contain zero or one if available [0..1] **`consumable`** [CONF:4348] such that it,
   a) **SHALL** contain exactly one [1..1] Medication Identification `(2.16.840.1.113883.3.163.99.4.4.18)` [CONF:4348.1].
18) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`entryRelationship`** [CONF:4349] such that it,
   a) **SHALL** contain exactly one [1..1] Unbound Observation `(2.16.840.1.113883.3.163.99.4.4.2)` [CONF:4349.1].
19) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`entryRelationship`** [CONF:4350] such that it,
   a) **SHALL** contain exactly one [1..1] Reason Observation `(2.16.840.1.113883.3.163.99.4.4.7)` [CONF:4350.1].
20) **MAY** contain zero or one [0..1] **`entryRelationship`** [CONF:4351] such that it,

a) **SHALL** contain exactly one [1..1] Comment Observation (2.16.840.1.113883.3.163.99.4.4.3) [CONF:4351.1].

The following XML example outlines how to use the Medication Activity template:

```
<entry typeCode="COMP" contextConductionInd="true">
    <!-- Medication Activity -->
    <templateId root="2.16.840.1.113883.3.1818.10.3.18" />
    <substanceAdministration classCode="SBADM" moodCode="EVN">
        <id extension="BC20120201RXA-1452388BN"
root="2.16.840.1.113883.3.1818.10.10.3"/>
        <code code="DRUG" codeSystem="2.16.840.1.113883.5.4" displayName="Drug
Therapy"/>
        <!-- Active Medication -->
        <statusCode code="active"/>
```

Figure 51: Medication Activity entry example

7.13 PATHWAY SPECIFIC CRITERIA OBSERVATION

[Observation: templateId 2.16.840.1.113883.3.163.99.4.3.1(closed)]

Table 80: Pathway Specific Criteria Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Pathway Specific Criteria [entries required]	N/A

The Pathway Specific Criteria Observation template defines the format for pathway specific questions and answers provided by the referral source provider based on the specific request for service pathway. This template uses a generic observation template that may include any number of coded or textual pathway observations.

Table 81: Pathway Specific Criteria Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3750		@typeCode	M:1..1	
3751		@contextConductionInd	M:1..1	
3752		templateId	R:1..1	II
3753		observation	R:1..1	
3754		@classCode	M:1..1	
3755		@moodCode	M:1..1	
3756	**Record ID** Identifier of the observation question and answer pair.	id	R:0..1	II
3757	**Observation Code** The code identifying the type of observation being communicated.	code	R:1..1	CD
3758	**Observation Text** The textual description of the observation question. This element is required if Observation Code is not provided.	text	R:1..1	ED

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3759	**Observation Value** The observed value/question response.	`value`	M:1..1	ANY
3760	**Observation Effective Time** The effective time of the observation. I.e. either when the observation was made, or when the information in the observation is relevant.	`effectiveTime`	O:0..1	IVL_TS

A Pathway Specific Criteria Observation (`Observation`) element:

1) **SHALL** contain exactly one [1..1] **`@typeCode`**="`COMP`" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3750].
2) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:3751].
3) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`templateId`** [CONF:3752] such that it,
   a) **SHALL** contain exactly one [1..1] **`@root`**="`2.16.840.1.113883.3.163.99.4.3.1`" [CONF:3752.12].
4) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`observation`** [CONF:3753].
   a) **SHALL** contain exactly one [1..1] **`@classCode`**="`OBS`" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3754].
   b) **SHALL** contain exactly one [1..1] **`@moodCode`**="`EVN`" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3755].
   c) **SHALL** contain zero or one if available [0..1] **`id`** [CONF:3756].
   d) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`code`**, which **SHOULD** be selected from ValueSet AlbertaReferralPathwayQuestion 2.16.840.1.113883.3.163.99.4.8.1 **DYNAMIC** [CONF:3757].
   e) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`text`** [CONF:3758].
   f) **SHALL** contain exactly one [1..1] **`value`** [CONF:3759].
   g) **MAY** contain zero or one [0..1] **`effectiveTime`** [CONF:3760].

The following XML example outlines how to use the Pathway Specific Criteria Observation template:

```
<entry typeCode="COMP" contextConductionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.3.1"/>
    <!-- Pathway Specific Observation -->
    <observation classCode="OBS" moodCode="EVN">
        <id extension="1" root="1.2.3.4"/>
        <code code="100.01"  displayName="Pain on motion"
            codeSystem="1.2.3.4" codeSystemName="AEDAMS Pathway Questions"/>
        <text>Pain on motion (e.g. walking, bending)</text>
        <effectiveTime value="20130101"/>
        <value xsi:type="ST">Severe</value>
    </observation>
</entry>
```

Figure 52: Pathway Specific Criteria Observation entry example

7.14 PROBLEM & CONDITION OBSERVATION

`[Observation: templateId 2.16.840.1.113883.3.163.99.4.3.8(closed)]`

Table 82: Problem & Condition Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Active Problems & Conditions [with entries]	Author Participation Comment Observation Date Observation Secondary Code (Unbound) Unbound Observation

The Problem and Condition Observation template defines the format for an unstructured list of problems that a clinician has noted in the patient's chart.

Diagnosis Coding

The World Health Organization's (WHO) International Classification of Diseases (ICD) is a primarily administrative coding scheme. ICD9 codes are predominantly used to code diagnoses for administrative billing purposes while ICD10 (ICD10-CA in Canada) is used for administrative secondary reporting. Procedural codes used in these context, such as the Current Procedural Terminology® (e.g. CPT9) and the Canadian Classification of Health Interventions (CCI), are also primarily administrative in intent. Where coding for clinical purposes, SNOMED CT® is the coding system of choice identified by a consensus of standards setting organizations, other specifications and the Infoway Standards Collaborative. Moreover, vendors are increasingly establishing support for SNOMED CT® within their EMRs, particularly for clinical coding of diagnoses (as well as a broad range of other clinical concepts).

The direction recommended is consequently to separate the coding of diagnosis for billing purposes and for clinical purposes into two separate elements.

Problem / Condition Code will be used exclusively for clinical codification of the diagnosis. The only supported coding system for this element in the specification will be SNOMED CT®.

Secondary Code will be used exclusively for billing codification of the diagnosis. The only supported coding system for this element in the specification will be ICD-9.

- Diagnosis Name `<value>` **SHALL** be populated when neither the Diagnosis Code `<code>` nor the Diagnosis Billing Code is provided and **SHALL** be used to identify the diagnosis as a free-text diagnosis.
- The Diagnosis Name **MAY** also be populated when the diagnosis is coded if the source system captures a free text diagnosis name in addition to the `<displayName>` associated with the `<code>` in the `<codeSystem>`.

The cardinality of all three fields is R:1..1, indicating that if the information is available in the source system, then it **SHALL** be populated. For example:

- If the diagnosis is coded in SNOMED, Diagnosis Code is required to be populated and if it is not coded in SNOMED a `NullFlavor` of "UNK" (Unknown) **SHALL** be sent.
- If the diagnosis is coded in ICD-9, Diagnosis Secondary Code is required to be populated and if it is not coded in ICD-9 a `NullFlavor` of "UNK" (Unknown) **SHALL** be sent.

Diagnosing Provider

The Diagnosing Provider is required to be populated if captured by the source system. If it is not populated, the receiving system **SHOULD NOT** assume that the author of the diagnosis record is the Diagnosing Provider.

Problem Status

The Problem Status **SHALL** be Active or Complete.

There was some consideration given to extending the Problem Status element to support concepts such as confirmed, tentative, excluded, under consideration, refuted, and deleted. However, after further analysis, the recommendation is to limit the values of the Problem Status to Active/Inactive and that these other concepts may be captured as an encounter note.

Table 83: Problem & Condition Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3334		`@typeCode`	M:1..1	
3335		`@contextConductionInd`	M:1..1	
3336		`templateId`	O:0..*	II
3337	**Active Problem or Condition**	`observation`	R:1..1	
3338	**Record ID** The internal identifier of the Problem/Condition record. This ID allows the linking of problems/conditions to each other as well as to other elements in the patient's chart (e.g. prescriptions).	`id`	O:0..*	II
3339	**Problem / Condition Code** The SNOMED CT concept code associated with the problem or condition.	`code`	R:1..1	CD
3340	**Onset Date** Onset date/time.	`effectiveTime`	R:0..1	IVL_TS
3341	**Problem / Condition Name** The name or short description for the problem or condition.	`value`	R:0..1	CD
3342	**Problem Status** The status of the Problem or Condition.	`statusCode`	R:0..1	CS
3343	**Diagnosing Provider (id)**	`author (Author`	R:1..*	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
	Identify of the Provider who has diagnosed the problem or condition.	Participation)		
3344	**Problem/Condition Secondary Code** The Secondary Alternate code associated with the Problem/Condition.	entryRelationship (Secondary Code (Unbound))	R:1..1	
3345	**Problem/Condition Diagnosis Date** Date (and time if available) that the diagnosis of the problem or condition of the problem was made.	entryRelationship (Date Observation)	R:0..1	
3346	**Problem/Condition Note** Free text notes relevant to the diagnosis as well as the identification of the provider responsible for the note.	entryRelationship (Comment Observation)	O:0..*	
3347	**Symptoms** Coded or free text list of symptoms as documented by the provider.	entryRelationship (Unbound Observation)	R:0..*	

A Problem & Condition Observation (Observation) element:

1) **SHALL** contain exactly one [1..1] **@typeCode**="COMP" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3334].
2) **SHALL** contain exactly one [1..1] **@contextConductionInd** [CONF:3335].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **templateId** [CONF:3336] such that each,
   a) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.3.163.99.4.3.8" [CONF:3336.12].
4) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **{CDAR2}** **observation** [CONF:3337].
   a) **MAY** contain zero or more [0..*] **{CDAR2}** **id** [CONF:3338].
   b) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **code**, which **SHALL** be selected from ValueSet ActDiagnosisCode 2.16.840.1.113883.2.20.3.7 **STATIC** [CONF:3339].
   c) **SHALL** contain zero or one if available [0..1] **effectiveTime** [CONF:3340] such that it,
      i) **MAY** be a partial date conforming to the TS data type constraints [CONF:3340.62].
   d) **SHALL** contain zero or one if available [0..1] **value**, which **SHALL** be selected from ValueSet DiagnosisValuePrimary 2.16.840.1.113883.2.20.3.40 **DYNAMIC** [CONF:3341] such that it,
      i) **SHALL** be populated when neither the Problem/Condition Code **code** or the Problem/Condition Secondary Code {ADD-TEMPLATE-REF} are provided and **SHALL** be used to identify the problem/condition as a free-text diagnosis; **MAY** be included when the problem/condition is coded if the sending system captures a free text name in addition to the **displayName** associated with the code [CONF:3341.141].
   e) **SHALL** contain zero or one if available [0..1] **statusCode**, which **SHALL** be selected from ValueSet x_ActStatusActiveComplete 2.16.840.1.113883.1.11.19890 **STATIC** [CONF:3342] such that it,
      i) **SHALL** be constrained to either Active or Completed status codes [CONF:3342.34].
   f) **SHALL** contain one or more (or a nullFlavor value) [1..*] **author** [CONF:3343] such that each,
      i) **SHALL** contain exactly one [1..1] Author Participation (2.16.840.1.113883.3.163.99.4.4.4) [CONF:3343.1].
   g) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **entryRelationship** [CONF:3344] such that it,

i) **SHALL** contain exactly one [1..1] Secondary Code (Unbound) (2.16.840.1.113883.3.163.99.4.4.5) [CONF:3344.1].

h) **SHALL** contain zero or one if available [0..1] **entryRelationship** [CONF:3345] such that it,

i) **SHALL** contain exactly one [1..1] Date Observation (2.16.840.1.113883.3.163.99.4.4.1) [CONF:3345.1].

i) **MAY** contain zero or more [0..*] **entryRelationship** [CONF:3346] such that each,

i) **SHALL** contain exactly one [1..1] Comment Observation (2.16.840.1.113883.3.163.99.4.4.3) [CONF:3346.1].

j) **SHALL** contain zero or more if available [0..*] **entryRelationship** [CONF:3347] such that each,

i) **SHALL** contain exactly one [1..1] Unbound Observation (2.16.840.1.113883.3.163.99.4.4.2) [CONF:3347.1].

The following XML example outlines how to use the Problem & Condition Observation template:

```
<entry typeCode="COMP" contextConductionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.3.1"/>
    <!-- Pathway Specific Observation -->
    <observation classCode="OBS" moodCode="EVN">
        <id extension="2" root="1.2.3.4"/>
        <code code="100.02"  displayName="Pain at rest"
            codeSystem="1.2.3.4" codeSystemName="AEDAMS Pathway Questions">
        </code>
        <text>Pain at rest (e.g. while sitting, lying down, or causing sleep
disturbance)</text>
        <effectiveTime value="20130101"/>
        <value xsi:type="ST">Mild</value>
    </observation>
</entry>
```

Figure 53: Problem & Condition Observation entry example

7.15 SOCIAL HISTORY & RISK FACTOR OBSERVATION

[Observation: templateId 2.16.840.1.113883.3.163.99.4.3.5(closed)]

Table 84: Social History & Risk Factor Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Social History & Risk Factors [with entries]	N/A

The Social History and Risk Factor Observation template defines the format for a structured list of social history observations or risk factors that have been observed on the patient.

Table 85: Social History & Risk Factor Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3761		@typeCode	M:1..1	
3762		@contextConductionInd	M:1..1	
3763		templateId	R:1..1	II
3764		observation	R:1..1	
3765		@classCode	M:1..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3766		@moodCode	M:1..1	
3767	**Record ID** Unique and persistent Identifier of the observation record.	id	R:0..1	II
3768	**Observation Code** The code identifying the type of observation being communicated.	code	R:1..1	CD
3769	**Observation Text** The textual description of the observation question. This element is required if Observation Code is not provided.	text	R:1..1	ED
3770	**Observation Value** The observed value/question response.	value	M:1..1	ANY
3771	**Observation Effective Time** The effective time of the observation. I.e. either when the observation was made, or when the information in the observation is relevant.	effectiveTime	R:1..1	IVL_TS

A Social History & Risk Factor Observation (Observation) element:

1) **SHALL** contain exactly one [1..1] **@typeCode**="COMP" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3761].
2) **SHALL** contain exactly one [1..1] **@contextConductionInd** [CONF:3762].
3) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **templateId** [CONF:3763] such that it,
   a) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.3.163.99.4.3.5" [CONF:3763.12].
4) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **{CDAR2}** **observation** [CONF:3764].
   a) **SHALL** contain exactly one [1..1] **@classCode**="OBS" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3765].
   b) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3766].
   c) **SHALL** contain zero or one if available [0..1] **id** [CONF:3767].
   d) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **code**, which **SHOULD** be selected from ValueSet ClientSocialBehaviourCode 2.16.840.1.113883.2.20.3.260 **DYNAMIC** [CONF:3768].
   e) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **text** [CONF:3769].
   f) **SHALL** contain exactly one [1..1] **value** [CONF:3770].
   g) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **effectiveTime** [CONF:3771] such that it,
      i) **MAY** be a partial date conforming to the TS data type constraints [CONF:3771.62].

The following XML example outlines how to use the Social History & Risk Factor Observation template:

```
<entry typeCode="COMP" contextConductionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.3.5"/>
    <!-- Social History & Risk Factor Observation-->
    <observation classCode="OBS" moodCode="EVN">
        <id extension="1" root="1.2.3.4"/>
        <code code="108333003" codeSystem="2.16.840.1.113883.2.20.3.260"
            codeSystemName="SNOMED-CT" displayName="Smoking AND/OR drinking habits"/>
        <text>How much is smoked?</text>
        <statusCode code="Active"/>
        <effectiveTime>
            <low value="1996"/>
        </effectiveTime>
        <value xsi:type="ST">1/2 pack per day</value>
    </observation>
</entry>
```

Figure 54: Social History & Risk Factor Observation entry example

8.0 ENTRY TEMPLATES

This chapter contains the Entry Templates referenced by one or more of the Section-Entry Templates of these consolidated CDA specifications. These templates are reusable sections of the implementation guide that are called from the Section-Entry Templates as required. They contain the structured entry constraints for specific clinical statements or functions. Entry Templates may be called from Section-Entry Templates, or from other Entry Templates.

Note that the Entry Templates are presented in alphabetical order; templates are not grouped by possible containing templates.

Entry Templates are always allowed in sections.

Each Entry Templates description contains the following information:

- Key template metadata (*e.g.*, `templateId`, *etc.*);
- Description and explanatory narrative;
- Entry Templates names and IDs for referenced templates (required and optional);
- Required CDA acts, participants and vocabularies; and
- Optional CDA acts, participants and vocabularies.

8.1 ATTACHMENT

`[Observation: templateId 2.16.840.1.113883.3.163.99.4.4.6(closed)]`

Table 86: Attachment Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alerts & Advance Directives Observation Encounter History Event Laboratory Observation Medical Imaging Result & Report Observation Outcome Observation Result Component	Author Participation

The Attachments template is used to reference any external file within the context of a part of the patient's record (e.g. advanced directives, lab results, x-ray images). There are many use cases where clinical content may not be incorporated discretely into the EMR system, but linked to the relevant record through the attachment mechanism.

When an external file is attached to the patient's medical record there are certain meta-data regarding that file that must be captured and communicated with the file to ensure that the context of the external file in relation to the medical record is maintained.

The Attachment itself may be embedded into the CDA document; or, more commonly referenced as an external document located within the message wrapper, a recognized file system, or at a web location.

When the attachment is embedded into the CDA document, the Attachment template is used to transmit the binary large object (blob) data as encapsulated data. This may include word processing documents, images, video, audio, waveforms, and other multimedia attachments.

Encapsulated data may be referenced as an external file or directly incorporated into the CDA document. If it is referenced it may be referenced either externally or internally to a message package that may be used to carry the document. In the former case the reference would be to a web URL or to a file in a contextually relevant file system directory. In the latter case, the blob may be packaged along with the document in the transport message.

In all cases, a reference to the encapsulated data is contained in the CDA document. All file types are supported using a reference subject to specific restrictions identified at the document template level.

File Types

The following file types are supported by the AEDAMS Specification as embedded attachments or as attachments included in the Message Wrapper. Any file type may be referenced.

Table 87: Encapsulated Data File Types

Format Type	Format	Code (MIME Type)
Word Processing/ Narrative Formats	Adobe® Portable Document Format (PDF) (As defined in RFC 3778)	application/pdf
	Hypertext Markup Language (As defined in in RFC 2854)	text/html
	Microsoft® Word	application/msword
	Plain Text (As defined in RFC 2046 and RFC 3676)	text/plain
	Rich Text Format (RTF) Text	text/rtf
	Extensible Markup Language (As defined in RFC 3023)	text/xml
Graphic / Image Formats	Graphics Interchange Format (GIF) Image (As defined in RFC 2045 and RFC 2046)	image/gif
	Tag Image File (TIF) Format Image (As defined in RFC 3302)	image/tiff
	Joint Photographic Experts Group (JPEG) Image (As defined in RFC 2045 and RFC 2046)	image/jpeg
	Portable Network Graphics (PNG) Image (As defined in RFC 2083)	image/png
Other Formats	ZIP archive files (note that ZIP archives contain other files in accordinace with the ZIP specification)	application/zip

Guidance for Embedding versus Referencing Encapsulated Data

At this time these specifications are silent on whether attachments should be embedded or referenced. Further work on practical file size limits, if any, or other design drivers that may emerge from early pilot implementations may influence this position in future. At this time implementers are advised to use their judgment and the applicable client / implementation requirements.

The following specific guidance and constraints for the various attachment communication mechanisms apply:

Embedded

Embedded attachments **SHALL** be from a list of valid MIME types and `mediaTypes`.

If the content is compressed (the compression attribute is present), if the content is an image, or if the content is an 'application' file (first part of the mediaType) (e.g. mediaType="application/pdf", "image/png" respectively), then the content must be base 64-encoded. Otherwise, the content will be sent as directly embedded text or XML. Uncompressed HTML must be XHTML compliant.

```
<!-- Example attachment embedded in document -->

<text mediaType="text/html" language="fr-CA">
     <html> . . . </html>
</text>
or
<text mediaType="text/rtf" representation="B64">
       e1xydGY...
</text>
```

Figure 55: Example attachment embedded in document

Included in Message Wrapper

In the event the document is transported by way of a structured electronic message and the attachment is also in the message, then an Xpath is used to reference the location of the attachment in the message wrapper.

A PDF document contained in the message wrapper would be specified using xpath as follows:

```
<!-- Example attachment reference to message wrapper -->

<text mediaType="application/pdf" language="en-CA">
    <reference value="Message.attachmentText(1)"/>
</text>
```

Figure 56: Example attachment included in message wrapper

Referenced

A referenced attachment may be located at a web location. The URL for the location of the actual file or document must be defined according to the Internet standard for URLs (refer to "http://tools.ietf.org/html/rfc1738'). For example:

```
<!-- Example attachment reference to a URL -->

<text mediaType=”image/jpg”>
    <reference value=”ftp://anywhere.com/folder1/image1.jpg”/>
</text>

<!—or -->

<text mediaType=”image/jpg”>
    <reference value=”http://www.anywhere.com/folder1/image1.jpg”/>
</text>
```

Figure 57: Example attachment referenced by URL

A referenced attachment may be located at an absolute location within a file system. For example:

```
<!-- Example attachment reference to an absolute file location -->

<text mediaType=”image/jpg”>
    <reference value=”file://localhost/c:/my documents/application
data/ehrdata/image1.jpg”/>
</text>
```

Figure 58: Example attachment referenced by absolute location

In the Conversion Use Case the referenced attachments may be placed in a directory relative to the CDA document containing a patient's information. The following example shows how an attachment may be referenced when it is located in a relative location. For example:

```
<!-- Example attachment reference to a relative file location -->

<text mediaType=”image/jpg”>
    <reference value=”file:../ehrdata/image1.jpg”/>
</text>
```

Figure 59: Example attachment referenced by relative location

The example code in this section and in other sample file(s) typically use simple filenames with relative paths because they are easy to read. However, simple filenames and relative paths can cause problems when files are moved among systems.

The hazard to be avoided can be illustrated as follows: Suppose an Unstructured Document that references a file "ekg.pdf" is transmitted to a receiver who places that Unstructured Document in a directory that already contains an Unstructured Document for another patient, which also references a file "ekg.pdf". Unless provisions are made to rename these files or place them in subdirectories, the sitation

may arise where one file overwrites the other and at least one document may point to an incorrect file. As a result, the use of relative paths and simple filenames can pose a danger to patient safety.

The alternative of providing an absolute URL (Uniform Resource Locator) will fail if the URL is inaccessible; even within a single organization, machine identifiers may be mapped differently at different locations.

Therefore this guide recommends the use of unique names for referenced files. One approach to generating a unique name is to construct it from the globally-unique document id (root and extension) concatenated to a locally unique reference for the external file. The following figure illustrates this technique used with a CDA document that has an id root `2.16.840.1.113883.19` and extension 999021.

```
<reference value="file:ref-2.16.840.1.113883.19-999021-ekg-1.pdf"/>
```

Figure 60: Unique file reference example

Considerations pertaining to Multiple Files and File Packaging

In the event there are several scanned files which constitute a single document, the following consolidation mechanisms are proposed:

- Use of a CDA document type that has a `structuredBody;`
- Use a multi-page/graphic file type such as PDF; or
- "Stitch" the separate images into a single image.

Table 88: Attachment Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3816		`@typeCode`	M:1..1	
3817		`@contextConductionInd`	M:1..1	
3818		`templateId`	O:0..*	II
3819		`observationMedia`	R:1..1	
3820		`@classCode`	M:1..1	
3821		`@moodCode`	M:1..1	
3822	**Attachment Identifier** The identifier of the external document, report, letter or other attachment relevant to the encounter and attached to the encounter.	`id`	M:1..1	II
3823	**Attachment Content or Reference** The attachment content itself or external reference to the content.	`value`	M:1..1	ED
3824	**Attachment Author** Principle author of the attachment. This may be used to filter or search for attachments.	`author (Author Participation)`	O:0..*	

An Attachment (`Observation) element:`

1) **SHALL** contain exactly one [1..1] **`@typeCode`**`="COMP"` component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3816].
2) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:3817].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3818] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.4.6"` [CONF:3818.12].
4) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`observationMedia`** [CONF:3819].
   a) **SHALL** contain exactly one [1..1] **`@classCode`**`="OBS"` observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3820].
   b) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3821].
   c) **SHALL** contain exactly one [1..1] **`id`** [CONF:3822].
   d) **SHALL** contain exactly one [1..1] **`value`** [CONF:3823].
   e) **MAY** contain zero or more [0..*] **{CDAR2}** **`author`** [CONF:3824] such that each,
      i) **SHALL** contain exactly one [1..1] Author Participation `(2.16.840.1.113883.3.163.99.4.4.4)` [CONF:3824.1].

The following XML example outlines how to use the Attachment template:

```
<entryRelationship typeCode="COMP" contextConductionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.4.6"/>
    <!-- Attachment -->
    <observationMedia classCode="OBS" moodCode="EVN">
        <id extension="1" root="1.2.3.4"/>
        <value xsi:type="ED" mediaType="application/pdf">
            <reference value="http://www.anywhere.com/folder1/Report.pdf"/>
        </value>
    </observationMedia>
</entryRelationship>
```

Figure 61: Attachment entry example

8.2 AUTHOR PARTICIPATION

`[Author: templateId 2.16.840.1.113883.3.163.99.4.4.4(closed)]`

Table 89: Author Participation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Attachment Care Plan Event Comment Observation Laboratory Observation Request Organizer Problem & Condition Observation Reaction Observation Reason Observation Result Organizer	N/A

The Author Participation template is a generic template that is referenced by various section or entry templates to enable the consistent communication of an author participation.

The Author Participation template supports communication of the author's name and an optional identifier as well as an `effectiveTime` element. This template **MAY** also be extended to support the author's represented organization if required.

Table 90: Author Participation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3375		`@typeCode`	M:1..1	
3376		`@contextControlCode`	M:1..1	
3377		`templateId`	O:0..*	II
3378	**Authored Date/Time** The date/time at which the authoring activity occurred.	`time`	R:1..1	TS
3379		`assignedAuthor`	M:1..1	
3380		`@classCode`	M:1..1	
3381	**Author Identifier**	`id`	R:1..1	II
3382		`assignedPerson`	M:1..1	
3383		`@classCode`	M:1..1	
3384		`@determinerCode`	M:1..1	
3385	**Author's Name** The author's name.	`name`	R:1..1	PN
3386	**Author's Represented Organization** The organization that is represented by the author may be included if required.	`representedOrganization`	O:0..*	
3387		`@classCode`	M:1..1	
3388		`@determinerCode`	M:1..1	
3389	**Represented Organization's Identifier**	`id`	O:0..*	II
3390	**Represented Organization's Name**	`name`	O:0..*	ON

An Author Participation (`Author`) `element:`

1) **SHALL** contain exactly one [1..1] **`@typeCode`**`="AUT"` author (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:3375].
2) **SHALL** contain exactly one [1..1] **{CDAR2}** **`@contextControlCode`**`="OP"` overriding propagating (CodeSystem: ContextControl 2.16.840.1.113883.5.1057) [CONF:3376].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3377] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.4.4"` [CONF:3377.12].
4) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`time`** [CONF:3378] such that it,
   a) **SHALL** be precise to the day and **SHOULD** be precise to the minute; if precise to the minute, **`value`** **SHALL** include a time zone offset [CONF:3378.18].
5) **SHALL** contain exactly one [1..1] **`assignedAuthor`** [CONF:3379].
   a) **SHALL** contain exactly one [1..1] **`@classCode`**`="ASSIGNED"` assigned (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:3380].

b) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`id`** [CONF:3381] such that it,
   i) **MAY** be a locally assigned identifier, if the **`author`** is a not a Provider [CONF:3381.13].
   ii) **MAY** contain a `NullFlavor` if the **`id`** is not known and the `name` is included [CONF:3381.14].
c) **SHALL** contain exactly one [1..1] **`assignedPerson`** [CONF:3382].

6) **SHALL** contain exactly one [1..1] **`@classCode`**="PSN" person (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3383].
7) **SHALL** contain exactly one [1..1] **`@determinerCode`**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3384].
8) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`name`** [CONF:3385] such that it,
   a) **SHALL**, when present, conform to the Person Name (PN) pan-Canadian Data Type data type constraint template (`2.16.840.1.113883.3.3068.10.5.3`) [CONF:3385.5].
9) **MAY** contain zero or more [0..*] **{CDAR2}** **`representedOrganization`** [CONF:3386].
   a) **SHALL** contain exactly one [1..1] **`@classCode`**="ORG" organization (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3387].
   b) **SHALL** contain exactly one [1..1] **`@determinerCode`**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3388].
10) **MAY** contain zero or more [0..*] **{CDAR2}** **`id`** [CONF:3389].
11) **MAY** contain zero or more [0..*] **{CDAR2}** **`name`** [CONF:3390].

The following XML example outlines how to use the Author Participation template:

```
<author typeCode="AUT" contextControlCode="OP">
    <!-- Author -->
    <templateId root="2.16.840.1.113883.3.163.99.4.4.4"/>
    <time value="20120212"/>
    <assignedAuthor>
        <id root="2.1.1.34" extension="123"/>
    </assignedAuthor>
</author>
```

Figure 62: Author Participation entry example

8.3 COMMENT OBSERVATION

`[Observation: templateId 2.16.840.1.113883.3.163.99.4.4.3(closed)]`

Table 91: Comment Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Alerts & Advance Directives Observation	Author Participation
Allergy Observation	
Care History Event	
Care Plan Event	
Encounter History Event	
Laboratory Observation	
Laboratory Observation Request Organizer	
Medical Imaging Result & Report Observation	
Medication Activity	
Problem & Condition Observation	
Reaction Observation	
Result Component	

Directly Used by Template(s)	Directly Contains Template(s)
Result Organizer	

The Comment Observation template is a generic comment template that may be referenced from different sections or entry templates to support the consistent communication of a comment. Comments are free text data that cannot otherwise be recorded using data elements already defined by this specification. They **SHALL NOT** be used to record information that can be recorded elsewhere. For example, a free text description of the severity of an allergic reaction **SHALL NOT** be recorded in a comment but **SHALL** be communicated through the applicable data element.

The Comment Observation template supports a coded or free text comment, effective time and an author.

Table 92: Comment Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3365		`@typeCode`	M:1..1	
3366		`@contextConductionInd`	M:1..1	
3367		`templateId`	O:0..*	II
3368		`observation`	R:1..1	
3369		`@classCode`	M:1..1	
3370		`@moodCode`	M:1..1	
3371	**Comment Observation Code**	`code`	R:1..1	CD
3372	**Free Text Comment**	`text`	R:1..1	ED
3373	**Comment Effective Time**	`effectiveTime`	R:0..1	IVL_TS
3374	**Observation Author**	`author (Author Participation)`	O:0..*	

A Comment Observation (`Observation) element:`

1) **SHALL** contain exactly one [1..1] **`@typeCode`**`="SUBJ"` subject (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3365].
2) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:3366].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3367] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.4.3"` [CONF:3367.12].
4) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`observation`** [CONF:3368].
   a) **SHALL** contain exactly one [1..1] **`@classCode`**`="OBS"` observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3369].
   b) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3370].
   c) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`code`**`="48767-8"` Annotation Comment (CodeSystem: LOINC 2.16.840.1.113883.6.1) [CONF:3371].
   d) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`text`** [CONF:3372].
   e) **SHALL** contain zero or one if available [0..1] **`effectiveTime`** [CONF:3373] such that it,
      i) **SHALL** contain exactly one [1..1] **`low`** value to indicate the Start Date/Time and **MAY** contain zero or one [0..1] **`high`** values to indicate the End Date/Time [CONF:3373.50].

f) **MAY** contain zero or more [0..*] **{CDAR2}** **author** [CONF:3374] such that each,
   i) **SHALL** contain exactly one [1..1] Author Participation (2.16.840.1.113883.3.163.99.4.4.4) [CONF:3374.1].

The following XML example outlines how to use the Comment Observation template:

```
<entryRelationship typeCode="SUBJ" contextConductionInd="true" inversionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.4.3"/>
    <!-- Comment Observation -->
    <observation classCode="OBS" moodCode="EVN">
        <code code="48767-8" codeSystem="2.16.840.1.113883.6.1"
            codeSystemName="LOINC" displayName="Annotation Comment"/>
        <value xsi:type="ST">This is a test comment</value>
    </observation>
</entryRelationship>
```

Figure 63: Comment Observation entry example

8.4 DATE OBSERVATION

[Observation: templateId 2.16.840.1.113883.3.163.99.4.4.1(closed)]

Table 93: Date Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Problem & Condition Observation	N/A

The Date Observation template is a generic comment template that may be referenced from different section or entry templates to support the consistent communication of a date for an observation.

The Date Observation template supports only an effective time.

Table 94: Date Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3348	**Date Observation**	@typeCode	M:1..1	
3349		@contextConductionInd	M:1..1	
3350		templateId	O:0..*	II
3351		observation	R:1..1	
3352		@classCode	M:1..1	
3353		@moodCode	M:1..1	
3355	**Effective Time**	effectiveTime	O:0..1	IVL_TS

A Date Observation (Observation) element:

1) **SHALL** contain exactly one [1..1] **@typeCode**="SUBJ" subject (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3348].
2) **SHALL** contain exactly one [1..1] **@contextConductionInd** [CONF:3349].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **templateId** [CONF:3350] such that each,

a) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.3.163.99.4.4.1" [CONF:3350.12].

4) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **{CDAR2}** **observation** [CONF:3351].
   a) **SHALL** contain exactly one [1..1] **@classCode**="OBS" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3352].
   b) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3353].
   c) **MAY** contain zero or one [0..1] **{CDAR2}** **effectiveTime** [CONF:3355] such that it,
      i) **SHALL** contain exactly one [1..1] **low** value to indicate the Start Date/Time and **MAY** contain zero or one [0..1] **high** values to indicate the End Date/Time [CONF:3355.50].
      ii) **MAY** be a partial date conforming to the TS data type constraints [CONF:3355.62].

The following XML example outlines how to use the Date Observation template:

```
<entryRelationship typeCode="SUBJ" contextConductionInd="true" inversionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.4.1"/>
    <!-- Date Observation -->
    <observation classCode="OBS" moodCode="EVN">
        <code nullFlavor="NA"/>
        <effectiveTime value="20120201114523-0700"/>
    </observation>
</entryRelationship>
```

Figure 64: Date Observation entry example

8.5 INFORMANT PARTICIPATION

[informant: templateId 2.16.840.1.113883.3.163.99.4.4.16(closed)]

Table 95: Informant Participation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Reaction Observation Reason Observation	N/A

The Informant Participation template is a generic template that is referenced by various section or entry templates to enable the consistent communication of information pertaining to informants (i.e. idnviduals who are providing information on behalf of others).

The Informant Participation template supports the informant's name and an optional identifier.

Table 96: Informant Participation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3942		@typeCode	M:1..1	
3943		@contextControlCode	M:1..1	
3944		templateId	O:0..*	II
3945		assignedEntity	M:1..1	
3946		@classCode	M:1..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3947	**Informant Identifier** The informant's identifier if the informant is an identified person.	id	O:0..1	II
3948		assignedPerson	M:1..1	
3949		@classCode	M:1..1	
3950		@determinerCode	M:1..1	
3951	**Informant's Name**	name	R:1..1	PN

An Informant Participation (informant) element:

1) **SHALL** contain exactly one [1..1] **@typeCode**="INF" informant (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:3942].
2) **SHALL** contain exactly one [1..1] **{CDAR2}** **@contextControlCode**="OP" overriding propagating (CodeSystem: ContextControl 2.16.840.1.113883.5.1057) [CONF:3943].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **templateId** [CONF:3944] such that each,
   a) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.3.163.99.4.4.16" [CONF:3944.12].
4) **SHALL** contain exactly one [1..1] **assignedEntity** [CONF:3945].
   a) **SHALL** contain exactly one [1..1] **@classCode**="ASSIGNED" assigned (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:3946].
   b) **MAY** contain zero or one [0..1] **id** [CONF:3947] such that it,
      i) **MAY** be a locally assigned identifier, if the **author** is a not a Provider [CONF:3947.13].
      ii) **MAY** contain a NullFlavor if the **id** is not known and the name is included [CONF:3947.14].
   c) **SHALL** contain exactly one [1..1] **assignedPerson** [CONF:3948].
      i) **SHALL** contain exactly one [1..1] **@classCode**="PSN" person (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3949].
      ii) **SHALL** contain exactly one [1..1] **@determinerCode**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3950].
      iii) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **name** [CONF:3951] such that it,
         (1) **SHALL**, when present, conform to the Person Name (PN) pan-Canadian Data Type data type constraint template (2.16.840.1.113883.3.3068.10.5.3) [CONF:3951.5].

The following XML example outlines how to use the Informant Participation template:

```
<informant typeCode="INF" contextControlCode="OP">
    <!-- Informant -->
    <templateId root="2.16.840.1.113883.3.163.99.4.4.16"/>
    <assignedEntity>
        <id nullFlavor="NA"/>
    </assignedEntity>
</informant>
```

Figure 65: Informant Participation entry example

8.6 MEDICATION IDENTIFICATION

`[Consumable: templateId 2.16.840.1.113883.3.163.99.4.4.18(closed)]`

Table 97: Medication Identification Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Medication Activity	N/A

The Medication Identification List template defines the structure to identify the specific drug and drug strength that is the subject of the Medication List record as defined in the Medication Observation template.

Amalgamated drug Names

Some systems (e.g. FDB) include the drug strength and form in the name of the drug (e.g. Tylenol 300mg tablet). This specification includes as three distinct fields - Drug Name, Strength and Form. The sending system **SHOULD** include the strength and form in the distinct fields for these values. The Name element **MAY** be populated with just the name (e.g. "Tylenol)", or **MAY** include the strength and form.

Generic Name

The Generic Name is used to communicate the generic ingredients that are included in the drug. This is included as the `<translation>` component of the Drug Code element which may repeat.

In some cases there will be multiple generic named ingredients within the drug; for example, Tylenol 3 has acetaminophen 300mg and codeine 30mg and caffeine as generic ingredients. This element is a string format and there are no requirements for the display of the ingredient name, strength and units of measure; however, it is strongly recommended that the element repeat with each ingredient included in its own repetition. Having this recorded as a single text string causes difficulties for calculating defined daily dose when a medication formulation consists of a combination of different drugs.

This field may be absent if a DIN code is provided as the receiving system may use the DIN code to identify the component generic ingredients.

Table 98: Medication Identification Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
4271		`@typeCode`	M:1..1	
4272		`templateId`	M:1..1	II
4273	**Manufactured Product**	`manufacturedProduct`	R:1..1	
4274		`@classCode`	M:1..1	
4275	**Manufactured Labeled Drug**	`manufacturedLabeledDrug`	R:1..1	
4276		`@classCode`	M:1..1	
4277		`@determinerCode`	M:1..1	
4278	**Drug Code**	`code`	R:1..*	CE

CONF	Business Name & Description	Element Name	E&C	Element Data Type
	Drug Identification code from a recognized coding system. Th Specification will identify a list of recognized coding systems.			
4279	**Drug Name** The name or short description for the drug as entered by the provider. This will accommodate use case where drug is un-coded (free text). This may be a generic name, a specific drug name or a non-formulary name.	`name`	R:1..1	EN

A Medication Identification (`Consumable`) element:

1) **SHALL** contain exactly one [1..1] **`@typeCode`**="`CSM`" consumable (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:4271].
2) **SHALL** contain exactly one [1..1] **`templateId`** [CONF:4272] such that it,
   a) **SHALL** contain exactly one [1..1] **`@root`**="`2.16.840.1.113883.3.163.99.4.4.18`" [CONF:4272.12].
3) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`manufacturedProduct`** [CONF:4273].
   a) **SHALL** contain exactly one [1..1] **`@classCode`**="`MANU`" manufactured product (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:4274].
   b) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`manufacturedLabeledDrug`** [CONF:4275].
      i) **SHALL** contain exactly one [1..1] **`@classCode`**="`MMAT`" manufactured material (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:4276].
      ii) **SHALL** contain exactly one [1..1] **`@determinerCode`**="`KIND`" kind (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:4277].
      iii) **SHALL** contain one or more (or a `nullFlavor` value) [1..*] **`code`**, which **SHALL** be selected from ValueSet ClinicalDrug 2.16.840.1.113883.2.20.3.29 **DYNAMIC** [CONF:4278].
      iv) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`name`** [CONF:4279].

The following XML example outlines how to use the Medication Identification template:

```
<consumable typeCode="CSM">
    <templateId root="2.16.840.1.113883.3.163.99.4.4.18"/>
    <manufacturedProduct classCode="MANU">
        <manufacturedLabeledDrug classCode="MMAT" determinerCode="KIND">

            <code code="0123" codeSystem="2.1.1.1"
                codeSystemName="Health Product Database"/>
            <name>ACETAMINOPHEN 500 mg</name>
        </manufacturedLabeledDrug>
    </manufacturedProduct>
</consumable>
```

Figure 66: Medication Identification entry example

8.7 OUTCOME OBSERVATION

`[Observation: templateId 2.16.840.1.113883.3.163.99.4.4.15(closed)]`

Table 99: Outcome Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Care History Event Care Plan Event	Attachment

The Outcome Observation template is a generic comment template that is referenced by various section or entry templates to enable the consistent communication of an outcome observation. Outcomes are free text or coded observations that are the result of an activity, procedure or event.

The Outcome Observation template supports a coded or free text outcome, effective time and author. The template also supports the inclusion of an attachment (such as a report, image or external file) using the Attachment template.

Table 100: Outcome Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3930		`@typeCode`	M:1..1	
3931		`@contextConductionInd`	M:1..1	
3932		`templateId`	O:0..*	II
3933		`observation`	R:1..1	
3934		`@classCode`	M:1..1	
3935		`@moodCode`	M:1..1	
3936	**Result Record ID** Record identifier for this outcome observation.	`id`	R:0..*	II
3937	**Outcome Observation Code**	`code`	R:1..1	CD
3938	**Free Text Outcome value**	`text`	R:0..1	ED
3939	**Outcome Effective Time**	`effectiveTime`	R:0..1	IVL_TS
3940	**Coded Outcome value**	`value`	R:0..1	CD
3941	**Outcome Attachments** Any attached files. This includes any external document references and external result report files.	`entryRelationship (Attachment)`	O:0..*	

An Outcome Observation (`Observation) element:`

1) **SHALL** contain exactly one [1..1] **`@typeCode`**`="SUBJ"` subject (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3930].
2) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:3931].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3932] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.4.15"` [CONF:3932.12].
4) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`observation`** [CONF:3933].

a) **SHALL** contain exactly one [1..1] **@classCode**="OBS" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3934].
b) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3935].
c) **SHALL** contain zero or more if available [0..*] **id** [CONF:3936].
d) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **code**="OUTCOBS" Outcome Observation Code (CodeSystem: ObservationType-CA-Pending 2.16.840.1.113883.3.3068.10.6.3) [CONF:3937].
e) **SHALL** contain zero or one if available [0..1] **text** [CONF:3938].
f) **SHALL** contain zero or one if available [0..1] **effectiveTime** [CONF:3939] such that it,
    i) **MAY** be a partial date conforming to the TS data type constraints [CONF:3939.62].
g) **SHALL** contain zero or one if available [0..1] **value** [CONF:3940].
h) **MAY** contain zero or more [0..*] **{CDAR2}** **entryRelationship** [CONF:3941] such that each,
    i) **SHALL** contain exactly one [1..1] Attachment (2.16.840.1.113883.3.163.99.4.4.6) [CONF:3941.1].

The following XML example outlines how to use the Outcome Observation template:

```
<entryRelationship typeCode="SUBJ" contextConductionInd="true" inversionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.4.15"/>
    <!-- Outcome Observation -->
    <observation classCode="OBS" moodCode="EVN">
        <id extension="1" root="1.2.3.4"/>
        <code code="OUTCOBS" displayName="Outcome Observation Code"
            codeSystem="2.16.840.1.113883.3.1818.10.6.99992"
            codeSystemName="ObservateionType-CA-Pending" />
        <value xsi:type="ST">Refer to attached report</value>
        <!-- Attachment or Reference -->
        <entryRelationship typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.6"/>
            <!-- Attachment -->
            <observationMedia classCode="OBS" moodCode="EVN">
                <id extension="1" root="1.2.3.4"/>
                <value xsi:type="ED" mediaType="application/pdf">
                    <reference value="http://www.anywhere.com/folder1/Report.pdf"/>
                </value>
            </observationMedia>
        </entryRelationship>
    </observation>
</entryRelationship>
```

Figure 67: Outcome Observation entry example

8.8 PERFORMER PARTICIPATION

[Performer: templateId 2.16.840.1.113883.3.163.99.4.4.11(closed)]

Table 101: Performer Participation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Care Plan Event Laboratory Observation Result Component	N/A

The Performer Participation template is a generic template that is referenced by various section or entry templates to enable the consistent communication of Performer participation.

The Performer Participation template supports the performer's name and identifier as well as the performer's organization's identifier and name. This template also supports an `effectiveTime` element.

Table 102: Performer Participation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3901		`@typeCode`	M:1..1	
3902		`templateId`	O:0..*	II
3903	**Performed Date/Time** The date/time at which the performer performed the activity.	`time`	O:0..*	IVL_TS
3904		`assignedEntity`	O:0..*	
3905	**Performer ID**	`id`	R:0..1	II
3906	**Assigned Person**	`assignedPerson`	O:0..1	
3907		`@classCode`	M:1..1	
3908		`@determinerCode`	M:1..1	
3909	**Assigned Person's Name**	`name`	R:0..1	PN
3910	**Represented Organization**	`representedOrganization`	O:0..1	
3911		`@classCode`	M:1..1	
3912		`@determinerCode`	M:1..1	
3913	**Represented Organization's Identifier**	`id`	R:0..1	II
3914	**Represented Organization's Name**	`name`	R:0..1	ON

A Performer Participation (`Performer`) element:

1) **SHALL** contain exactly one [1..1] **`@typeCode`**="PRF" performer (CodeSystem: ParticipationType 2.16.840.1.113883.5.90) [CONF:3901].
2) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3902] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**="2.16.840.1.113883.3.163.99.4.4.11" [CONF:3902.12].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`time`** [CONF:3903] such that each,
   a) **SHALL** contain exactly one [1..1] **`low`** value to indicate the Start Date/Time and **MAY** contain zero or one [0..1] **`high`** values to indicate the End Date/Time [CONF:3903.50].
   b) **MAY** be a partial date conforming to the TS data type constraints [CONF:3903.62].
4) **MAY** contain zero or more [0..*] **{CDAR2}** **`assignedEntity`** [CONF:3904].
   a) **SHALL** contain zero or one if available [0..1] **`id`** [CONF:3905] such that it,
      i) **MAY** be a locally assigned identifier, if the **`author`** is a not a Provider [CONF:3905.13].
      ii) **MAY** contain a `NullFlavor` if the **`id`** is not known and the `name` is included [CONF:3905.14].
   b) **MAY** contain zero or one [0..1] **{CDAR2}** **`assignedPerson`** [CONF:3906].
      i) **SHALL** contain exactly one [1..1] **`@classCode`**="PSN" person (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3907].

ii) **SHALL** contain exactly one [1..1] **@determinerCode**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3908].

iii) **SHALL** contain zero or one if available [0..1] **name** [CONF:3909] such that it,

(1) **SHALL**, when present, conform to the Person Name (PN) pan-Canadian Data Type data type constraint template (2.16.840.1.113883.3.3068.10.5.3) [CONF:3909.5].

c) **MAY** contain zero or one [0..1] **{CDAR2}** **representedOrganization** [CONF:3910].

i) **SHALL** contain exactly one [1..1] **@classCode**="ORG" organization (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3911].

ii) **SHALL** contain exactly one [1..1] **@determinerCode**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3912].

iii) **SHALL** contain zero or one if available [0..1] **id** [CONF:3913].

iv) **SHALL** contain zero or one if available [0..1] **name** [CONF:3914].

The following XML example outlines how to use the Performer Participation template:

```
<performer typeCode="PRF">
    <templateId root="2.16.840.1.113883.3.163.99.4.4.11"/>
    <!--Performer Participation -->
    <assignedEntity>
        <id extension="333" root="1.2.3.4"/>
        <assignedPerson classCode="PSN" determinerCode="INSTANCE">
            <name>
                <prefix>Dr.</prefix>
                <given>I</given>
                <family>Gastroenterolli</family>
            </name>
        </assignedPerson>
        <representedOrganization classCode="ORG" determinerCode="INSTANCE">
            <id extension="333" root="1.2.3.4"/>
            <name>Gastroenterology Clinic</name>
        </representedOrganization>
    </assignedEntity>
</performer>
```

Figure 68: Performer Participation entry example

8.9 PROVIDER PARTICIPATION

[Participant: templateId 2.16.840.1.113883.3.163.99.4.4.10(closed)]

Table 103: Provider Participation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Encounter History Event	N/A

The Provider Participation template is a generic template that is referenced by various section or entry templates to enable the consistent communication of details pertaining to a Provider.

The Provider Participation template supports the provider's name, address, telecommunications contact information as well as an identifier. The template also supports a "Provider Description" that may be used when a specific provider cannot be named which may be used to indicate a speciality or department.

Table 104: Provider Participation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3888		`@typeCode`	M:1..1	
3889		`@contextControlCode`	O:1..1	
3890		`templateId`	O:0..*	II
3891		`participantRole`	O:0..*	
3892		`@classCode`	M:1..1	
3893	**Provider's Identifier** ID and Name of provider responsible for the encounter.	`id`	R:0..1	II
3894	**Provider's Address** Address for the provider.	`addr`	R:0..1	AD
3895	**Provider's Telecom** Telephone, email or other telecommunications contact information for the provider.	`telecom`	R:0..1	TEL
3896		`playingEntity`	O:0..1	
3897		`@classCode`	M:1..1	
3898		`@determinerCode`	M:1..1	
3899	**Provider's Name**	`name`	R:1..1	PN
3900	**Provider's Description** Description of the provider if no specific named provider is known. For example, the speciality or department.	`desc`	R:1..1	ED

A Provider Participation (`Participant) element:`

1) **SHALL** contain exactly one [1..1] **`@typeCode`**, which **SHALL** be selected from ValueSet ParticipationType 2.16.840.1.113883.1.11.10901 **STATIC** [CONF:3888].
2) **MAY** contain zero or one [1..1] **{CDAR2}** **`@contextControlCode`**`="OP"` overriding propagating (CodeSystem: ContextControl 2.16.840.1.113883.5.1057) [CONF:3889].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3890] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.4.10"` [CONF:3890.12].
4) **MAY** contain zero or more [0..*] **{CDAR2}** **`participantRole`** [CONF:3891].
   a) **SHALL** contain exactly one [1..1] **`@classCode`**`="PROV"` provider (CodeSystem: RoleClass 2.16.840.1.113883.5.110) [CONF:3892].
   b) **SHALL** contain zero or one if available [0..1] **`id`** [CONF:3893].
   c) **SHALL** contain zero or one if available [0..1] **`addr`** [CONF:3894] such that it,
      i) **SHALL**, when present, conform to the Address (AD) pan-Canadian Data Type data type constraint template (`2.16.840.1.113883.3.3068.10.5.1`) [CONF:3894.5].
   d) **SHALL** contain zero or one if available [0..1] **`telecom`** [CONF:3895] such that it,
      i) **SHALL**, when present, conform to the Telecom (TEL) pan-Canadian Data Type data type constraint template (`2.16.840.1.113883.3.3068.10.5.2`) [CONF:3895.5].
   e) **MAY** contain zero or one [0..1] **{CDAR2}** **`playingEntity`** [CONF:3896].
      i) **SHALL** contain exactly one [1..1] **`@classCode`**`="PSN"` person (CodeSystem: EntityClass 2.16.840.1.113883.5.41) [CONF:3897].

ii) **SHALL** contain exactly one [1..1] **@determinerCode**="INSTANCE" instance (CodeSystem: EntityDeterminer 2.16.840.1.113883.5.30) [CONF:3898].
iii) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **name** [CONF:3899].
iv) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **desc** [CONF:3900].

The following XML example outlines how to use the Provider Participation template:

```
<participant typeCode="PRF" contextControlCode="OP">
    <templateId root="2.16.840.1.113883.3.163.99.4.4.10"/>
    <participantRole>
        <id extension="155388" root="2.16.840.1.113883.3.1818.10.2.10.19" />
        <addr use="WP">
            <streetAddressLine>4444 Healthcare Drive</streetAddressLine>
            <city>Calgary</city>
            <state>AB</state>
            <postalCode>A1B 2C3</postalCode>
            <country>CA</country>
        </addr>
        <telecom value="tel: (555) 555-1009" use="WP"/>
        <playingEntity classCode="PSN" determinerCode="INSTANCE">
            <name>
                <prefix>Mr.</prefix>
                <given>Encounter</given>
                <family>Provider</family>
            </name>
        </playingEntity>
    </participantRole>
</participant>
```

Figure 69: Provider Participation entry example

8.10 REACTION OBSERVATION

[Observation: templateId 2.16.840.1.113883.3.163.99.4.4.13(closed)]

Table 105: Reaction Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Allergy Observation	Author Participation Comment Observation Informant Participation Severity Observation

This template represents an undesired symptom, finding or event due to an administered or exposed substance. A reaction can be defined with respect to its severity, and can have been treated by one or more interventions.

Table 106: Reaction Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3915		@typeCode	M:1..1	
3916		@contextConductionInd	M:1..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3917		templateId	O:0..*	II
3918		observation	R:1..1	
3919		@classCode	M:1..1	
3920		@moodCode	M:1..1	
3921	**Record ID** Identified link to a reaction on the reaction list.	id	R:0..1	II
3922	**Reaction Observation Code**	code	R:1..1	CD
3923	**Reaction Name** The name or short description of the specific reaction(s) that is experienced by a patient when exposed (e.g. Hives, anaphylaxis).	text	R:1..1	ED
3924	**Reaction Effective Time** Effective date/time of the reaction.	effectiveTime	R:0..1	IVL_TS
3925	**Coded Reaction value** Coded identification of the specific reaction(s) that is or are experienced by a patient when exposed (e.g. hives, anaphylaxis).	value	R:1..1	CD
3926	**Reaction Severity** Severity of the reaction observed.	entryRelationship (Severity Observation)	R:0..1	
3927	**Reaction Comment** Comments or Observations related to the reaction. Examples of the use of this element include: Free form text describing or supplementing the details of the patient's reaction; Textual description of the time period of the first reaction when an exact date is not known (e.g. adolescence); or Coded Observations.	entryRelationship (Comment Observation)	O:0..1	
3928	**Reaction Author** The documented author of the reaction.	author (Author Participation)	R:0..1	
3929	**Reaction Informant** The informant of the reaction observation (e.g. patient, patient's mother, Dr. Skin).	informant (Informant Participation)	R:0..1	

A Reaction Observation (Observation) element:

1) **SHALL** contain exactly one [1..1] **@typeCode**="SUBJ" subject (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3915].
2) **SHALL** contain exactly one [1..1] **@contextConductionInd** [CONF:3916].
3) **MAY** contain zero or more [0..*] **{CDAR2} templateId** [CONF:3917] such that each,
   a) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.3.163.99.4.4.13" [CONF:3917.12].
4) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **{CDAR2} observation** [CONF:3918].
   a) **SHALL** contain exactly one [1..1] **@classCode**="OBS" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3919].
   b) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3920].

c) **SHALL** contain zero or one if available [0..1] **id** [CONF:3921].

d) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **code**="REACTOBS" Reaction Code (CodeSystem: ObservationType-CA-Pending 2.16.840.1.113883.3.3068.10.6.3) [CONF:3922].

e) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **text** [CONF:3923] such that it,

   i) **SHALL NOT** contain a nullFlavor if **value** contains a NullFlavor [CONF:3923.48].

f) **SHALL** contain zero or one if available [0..1] **effectiveTime** [CONF:3924] such that it,

   i) **SHALL** contain exactly one [1..1] **low** value to indicate the Start Date/Time and **MAY** contain zero or one [0..1] **high** values to indicate the End Date/Time [CONF:3924.50].

g) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **value**, which **SHOULD** be selected from ValueSet ObservationValue 2.16.840.1.113883.3.3068.10.8.21 **DYNAMIC** [CONF:3925] such that it,

   i) **SHALL NOT** contain a nullFlavor if **text** contains a NullFlavor [CONF:3925.47].

h) **SHALL** contain zero or one if available [0..1] **entryRelationship** [CONF:3926] such that it,

   i) **SHALL** contain exactly one [1..1] Severity Observation (2.16.840.1.113883.3.163.99.4.4.9) [CONF:3926.1].

i) **MAY** contain zero or one [0..1] **entryRelationship** [CONF:3927] such that it,

   i) **SHALL** contain exactly one [1..1] Comment Observation (2.16.840.1.113883.3.163.99.4.4.3) [CONF:3927.1].

j) **SHALL** contain zero or one if available [0..1] **author** [CONF:3928] such that it,

   i) **SHALL** contain exactly one [1..1] Author Participation (2.16.840.1.113883.3.163.99.4.4.4) [CONF:3928.1].

k) **SHALL** contain zero or one if available [0..1] **informant** [CONF:3929] such that it,

   i) **SHALL** contain exactly one [1..1] Informant Participation (2.16.840.1.113883.3.163.99.4.4.16) [CONF:3929.1].

The following XML example outlines how to use the Reaction Observation template:

```
<entryRelationship typeCode="COMP" contextConductionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.4.13"/> <!-- Reaction Observation -
->
    <observation classCode="OBS" moodCode="EVN">
        <code nullFlavor="NA"/>
        <text>Mild</text>
        <value xsi:type="CD"
            code="422587007"
            displayName="Nausea"
            codeSystem="2.16.840.1.113883.6.96"
            codeSystemName="SNOMED CT"/>
        <author typeCode="AUT" contextControlCode="OP"><!-- Author -->
            <templateId root="2.16.840.1.113883.3.163.99.4.4.4"/>
           ...
        </author>
        <informant typeCode="INF" contextControlCode="OP"><!-- Informant -->
            <templateId root="2.16.840.1.113883.3.163.99.4.4.16"/>
            ...
        </informant>
        <entryRelationship typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.9"/> <!-- Severity
Observation -->
            ...
        </entryRelationship>
        <entryRelationship typeCode="SUBJ" contextConductionInd="true"
inversionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.3"/> <!-- Comment
Observation -->
           ...
        </entryRelationship>
    </observation>
</entryRelationship>
```

Figure 70: Reaction Observation entry example

8.11 REASON OBSERVATION

`[Observation: templateId 2.16.840.1.113883.3.163.99.4.4.7(closed)]`

Table 107: Reason Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Care History Event Care Plan Event Encounter History Event Medical Imaging Result & Report Observation Medication Activity	Author Participation Informant Participation

The Reason Observation template is a generic template that is referenced by various section or entry templates to enable the consistent communication of a reason or indication as to why a particular observation is required. Reason observations are free text or coded observations that document the rationale for an activity. The Reason Observation template can be used with the id element to reference a problem recorded elsewhere in the document or with a code and value to record the problem type and

problem, or as a free text reason. For example, the indication for a prescription of a painkiller might be a headache that is documented in the Problems Section.

The Reason Observation template supports a coded or free text reasons, effective time, record identifiers as well as an author and informant.

Encounter Reason

There is a requirement to support the encounter reason to be from the Patient or the Provider's perspective. It may also be coded or free text. It is important to distinguish between the sources of the encounter reason (patient/provider) as well as to support both coded and textual views.

This is especially important because the patient's reason, whilst important as this is their perceived reason for the encounter; can very often be inaccurate. For example someone thinks that the chest pain that they are having is a heart attack when it is actually acid reflux. This could "contaminate" the record with data that is not accurately reflecting the true reason for the encounter. The patient's reason for the encounter might best be left in the Subjective portion of the Encounter Comment element. Consequently, the recommendation is to allow for communicating the patient's reason in a format that clearly tags it as such. However, it is still possible for the provider to only include the reason in the encounter comments if that is his/her clinical preference.

It should be noted that Emergency Room records are now required to have patient's stated "Reason" recorded as text whilst physician preference is to have their own coding (e.g. "BP check and med renewal" or "Follow-up after CT") which they may be able to see at a glance the purpose of the visit).

The sending system is responsible for ensuring that the Encounter Reason is clearly identified with the source of the reason (patient or provider).

The Encounter Reason is designed as a related observation to the encounter. This allows the reason to be coded or free text and includes the author or informant of the reason.

Table 108: Reason Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3865	**Reason Observation**	`@typeCode`	M:1..1	
3866		`@contextConductionInd`	M:1..1	
3867		`templateId`	O:0..*	II
3868		`observation`	R:1..1	
3869		`@classCode`	M:1..1	
3870		`@moodCode`	M:1..1	
3871	**Record ID**	`id`	R:1..1	II
3872	**Reason Observation Code**	`code`	R:1..1	CD
3873	**Free Text Reason** Text for the reason when the reason for the	`text`	R:1..1	ED

CONF	Business Name & Description	Element Name	E&C	Element Data Type
	event is not coded.			
3874	**Reason Effective Time**	effectiveTime	R:1..1	IVL_TS
3875	**Coded Reason value** A coded reason for the event. This code may be a clinical reason such as a diagnosis, a symptom or an indication, or it may be an administrative reason.	value	R:1..1	CD
3877	**Reason Author**	author (Author Participation)	O:0..*	
3878	**Reason Informant**	informant (Informant Participation)	O:0..*	

A Reason Observation (Observation) element:

1) **SHALL** contain exactly one [1..1] **@typeCode**="SUBJ" subject (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3865].
2) **SHALL** contain exactly one [1..1] **@contextConductionInd** [CONF:3866].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **templateId** [CONF:3867] such that each,
   a) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.3.163.99.4.4.7" [CONF:3867.12].
4) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **{CDAR2}** **observation** [CONF:3868].
   a) **SHALL** contain exactly one [1..1] **@classCode**="OBS" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3869].
   b) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3870].
   c) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **id** [CONF:3871].
   d) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **code**="REASON" Reason Code (CodeSystem: ObservationType-CA-Pending 2.16.840.1.113883.3.3068.10.6.3) [CONF:3872].
   e) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **text** [CONF:3873].
   f) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **effectiveTime** [CONF:3874] such that it,
      i) **SHALL** contain exactly one [1..1] **low** value to indicate the Start Date/Time and **MAY** contain zero or one [0..1] **high** values to indicate the End Date/Time [CONF:3874.50].
   g) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **value**, which **SHOULD** be selected from ValueSet ReasonObservationValue 2.16.840.1.113883.3.3068.10.8.22 **DYNAMIC** [CONF:3875].
   h) **MAY** contain zero or more [0..*] **{CDAR2}** **author** [CONF:3877] such that each,
      i) **SHALL** contain exactly one [1..1] Author Participation (2.16.840.1.113883.3.163.99.4.4.4) [CONF:3877.1].
   i) **MAY** contain zero or more [0..*] **{CDAR2}** **informant** [CONF:3878] such that each,
      i) **SHALL** contain exactly one [1..1] Informant Participation (2.16.840.1.113883.3.163.99.4.4.16) [CONF:3878.1].

The following XML example outlines how to use the Reason Observation template:

```
<entryRelationship typeCode="RSON" contextConductionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.4.7"/>   <!-- Reason Observation --
>
    <observation classCode="OBS" moodCode="EVN">
        <id extension="1" root="1.2.3.4"/>
        <code code="RSNOBS" displayName="Reason Observation Code"
codeSystem="2.16.840.1.113883.3.1818.10.6.99992"
            codeSystemName="ObservateionType-CA-Pending" />
        <text>Chest pain, 29857009 (SNOMED CT)</text>
        <effectiveTime value="20130218"/>
    </observation>
</entryRelationship>
```

Figure 71: Reason Observation entry example

8.12 RESULT COMPONENT

`[Observation: templateId 2.16.840.1.113883.3.163.99.4.4.8(closed)]`

Table 109: Result Component Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Laboratory Observation Request Organizer Result Organizer	Attachment Comment Observation Performer Participation

The Result Component template defines the observation result details. This maps to each of the OBX segments in HL7v2 messaging. This includes the lab test(s) performed, the result values, the result status, specimen collection information and reference ranges and associations to producing laboratory and any notes pertaining to the result (i.e. NTE segment). Each lab test performed is a separate Result Component.

The Result Component can be used for all laboratory specialties except Anatomical Pathology where this level of discrete data is not captured.

For General Laboratory, the lab test performed (i.e. ObservationEvent.code) may pertain to many types of observations. For example, a Sodium test (e.g. 2947-0) might have a lab test value (i.e. ObservationEvent.value) equal to 145 with units of measure of mmol/L coded using UCUM. A reference range may also be provided (e.g. 133-145 mmol/L = Normal). For a Complete Blood Count, the lab tests performed would pertain to each of the WBC, RBC, Hemoglobin A, etc. with corresponding numeric lab test values and units of measure.

For Microbiology, the lab test performed may pertain to the identification of a microorganism (e.g. 11475-1 Microorganism Identified) with the lab test value referencing a specific microorganism using SNOMED-CT (e.g. 112283007 escherichia coli). The lab test performed may also pertain to the various antimicrobials tested (e.g. 18864-9 Ampicillin) with a blank lab test value but a populated interpretation code such as ‘Susceptible’.

For Blood Bank, the lab test performed may pertain to the blood typing or screening tests (e.g. 34478-8 Blood Group Antibodies Present) with the lab test value populated with 'Negative'.

Table 110: Result Component Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3785		@typeCode	M:1..1	
3786		@contextConductionInd	M:1..1	
3787		templateId	O:0..*	II
3788	**Result Component Observation**	observation	R:1..1	
3789		@classCode	M:1..1	
3790		@moodCode	M:1..1	
3791	**Result Observation Record ID** Unique and persistent identifier for the Result record (i.e. Accession Number).	id	R:1..1	II
3792	**Result Observation Code** Code identifying the laboratory test or procedure being reported. This may differ from the Order Code. This maps from OBX-3.1 in HL7v2.	code	R:1..1	CD
3793	**Result Name** Name identifying the laboratory test or procedure being reported. This maps from OBX-3.2 in HL7v2.	text	R:0..1	ED
3794	**Result Date/Time** Date (and optional time) that the test result was recorded by the Laboratory system. This maps from OBX-14 in HL7v2.	effectiveTime	R:0..1	IVL_TS
3795	**Result Status** The status of the laboratory results. Active shall be sent to indicate non-Final status, while Complete is used to indicate either a Final or Corrected laboratory results. This mpas from OBX-11 in HL7v2.	statusCode	R:1..1	CS
3796	**Result Value** The result value. This element may be in various complex formats or data types depending on the test or procedure being reported. This maps from OBX-5 in HL7v2.	value	R:0..1	ANY
3797	**Interpretation Code** Code indicating the interpretation of the results; also known as the Abnormal flag. This maps from OBX-8 in HL7v2.	interpretationCode	R:0..1	CE
3798	**Reference Range** The range within which the results are interpreted.	referenceRange	R:0..1	
3799		@typeCode	M:1..1	
3800	**Observation Range**	observationRange	O:0..*	
3801		@classCode	M:1..1	
3802		@moodCode	M:1..1	
3803	**Reference Range Interpretation Type** Coded interpretation of the result against the	code	R:0..1	CD

CONF	Business Name & Description	Element Name	E&C	Element Data Type
	reference range applicable to the test subject (e.g. normal, high, low, etc.)			
3804	**Reference Range Text** Textual form (for display) of the reference range applicable to the subject of this observation, within which the result is interpreted.	`text`	R:0..1	ED
3805	**Reference Range Value** Structured form (for processing) of the reference range applicable to the subject of this observation, within which the result is interpreted.	`value`	R:0..1	ANY
3806	**Specimen Collection Information** Date and time of the specimen collection.	`entryRelationship`	R:1..1	
3807		`@typeCode`	M:1..1	
3808	**Collection Procedure**	`procedure`	R:1..1	
3809		`@classCode`	M:1..1	
3810		`@moodCode`	M:1..1	
3811	**Specimen Collection Date** Date and time of the specimen collection. This maps from OBR-7 in HL7v2.	`effectiveTime`	R:1..1	IVL_TS
3812	**Specimen Collection Comments** Any notes documented regarding the specimen collection procedure.	`text`	R:0..1	ED
3813	**Resulting Organization** The ID and Name of the performing laboratory organization. This maps from OBX-15 Producer ID in HL7v2.	`performer (Performer Participation)`	R:0..1	
3814	**Result Notes** Comments or notes attached to the results. This includes any interpretive comments. This maps from NTE segments in HL7v2.	`entryRelationship (Comment Observation)`	O:0..*	
3815	**Result Attachments** Attachments pertinent to the laboratory result. Examples include an attachment containing a scanned image of the order, and attachment including a radiological image with the result.	`entryRelationship (Attachment)`	O:0..*	

A Result Component (`Observation) element:`

1) **SHALL** contain exactly one [1..1] **`@typeCode`**`="COMP"` component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3785].
2) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:3786].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3787] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.4.8"` [CONF:3787.12].
4) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`observation`** [CONF:3788].
5) **SHALL** contain exactly one [1..1] **`@classCode`**`="OBS"` observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3789].

6) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3790].
7) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **id** [CONF:3791].
8) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **{CDAR2}** **code**, which **SHALL** be selected from ValueSet ObservationResultableLabType 2.16.840.1.113883.2.20.3.105 **DYNAMIC** [CONF:3792].
9) **SHALL** contain zero or one if available [0..1] **text** [CONF:3793].
10) **SHALL** contain zero or one if available [0..1] **effectiveTime** [CONF:3794].
11) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **statusCode**, which **SHALL** be selected from ValueSet ActStatus 2.16.840.1.113883.1.11.159331 **STATIC {CDAR2}** [CONF:3795].
12) **SHALL** contain zero or one if available [0..1] **value**, which, when coded, **SHOULD** be selected from ValueSet ObservationValue 2.16.840.1.113883.3.3068.10.8.21 **DYNAMIC {CDAR2}** [CONF:3796].
13) **SHALL** contain zero or one if available [0..1] **interpretationCode**, which **SHALL** be selected from ValueSet ObservationInterpretation 2.16.840.1.113883.2.20.3.78 **STATIC {CDAR2}** [CONF:3797].
14) **SHALL** contain zero or one if available [0..1] **referenceRange** [CONF:3798].
15) **SHALL** contain exactly one [1..1] **@typeCode**="REFV" reference (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3799].
16) **MAY** contain zero or more [0..*] **{CDAR2}** **observationRange** [CONF:3800].
17) **SHALL** contain exactly one [1..1] **@classCode**="OBS" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3801].
18) **SHALL** contain exactly one [1..1] **@moodCode**="EVN.CRT" event criterion (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3802].
19) **SHALL** contain zero or one if available [0..1] **code**, which **SHALL** be selected from ValueSet ObservationInterpretation 2.16.840.1.113883.2.20.3.78 **STATIC {CDAR2}** [CONF:3803].
20) **SHALL** contain zero or one if available [0..1] **text** [CONF:3804].
21) **SHALL** contain zero or one if available [0..1] **value** [CONF:3805].
22) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **entryRelationship** [CONF:3806].
23) **SHALL** contain exactly one [1..1] **@typeCode**="COMP" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3807].
24) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **{CDAR2}** **procedure** [CONF:3808].
25) **SHALL** contain exactly one [1..1] **@classCode**="PROC" procedure (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3809].
26) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3810].
27) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **effectiveTime** [CONF:3811].
28) **SHALL** contain zero or one if available [0..1] **text** [CONF:3812].
29) **SHALL** contain zero or one if available [0..1] **performer** [CONF:3813] such that it,
    a) **SHALL** contain exactly one [1..1] Performer Participation (2.16.840.1.113883.3.163.99.4.4.11) [CONF:3813.1].
30) **MAY** contain zero or more [0..*] **{CDAR2}** **entryRelationship** [CONF:3814] such that each,
    a) **SHALL** contain exactly one [1..1] Comment Observation (2.16.840.1.113883.3.163.99.4.4.3) [CONF:3814.1].
31) **MAY** contain zero or more [0..*] **{CDAR2}** **entryRelationship** [CONF:3815] such that each,
    a) **SHALL** contain exactly one [1..1] Attachment (2.16.840.1.113883.3.163.99.4.4.6) [CONF:3815.1].

The following XML example outlines how to use the Result Component template:

```
<component typeCode="COMP">
    <templateId root="2.16.840.1.113883.3.163.99.4.4.8"/>
    <observation classCode="OBS" moodCode="EVN">
        <!-- Laboratory Component OBX #2 -->
        <id root="TBD" extension="AN123"/>
        <code code="6690-2" codeSystem="2.16.840.1.113883.3.3068.10.8.1"
codeSystemName="pCLOCD" displayName="WBC">
            <translation code="WBC" codeSystem="2.1.1.1" codeSystemName="Local"
displayName="White Blood Count">
                <originalText>White Blood Count</originalText>
            </translation>
        </code>
        <text>WBC</text>
        <statusCode code="completed"/>
        <effectiveTime value="20140204"/>
        <value xsi:type="PQ" value="11.0" unit="giga/L"/>
        <interpretationCode code="A"/>
        <performer typeCode="PRF">
            <assignedEntity classCode="ASSIGNED">
                <id root="TBD" extension="1234567"/>
            </assignedEntity>
        </performer>
        <!-- Result Reference Range -->
        <referenceRange typeCode="REFV">
            <observationRange moodCode="EVN.CRT" classCode="OBS">
                <text>4.0 - 10.0 giga/L</text>
                <value xsi:type="ST" value="120-150 g/L"/>
</observationRange>
        </referenceRange>
    </observation>
</component>
```

Figure 72: Result Component entry example

8.13 RESULT ORGANIZER

`[Organizer: templateId 2.16.840.1.113883.3.163.99.4.4.14(closed)]`

Table 111: Result Organizer Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Laboratory Observation Request Organizer	Author Participation Comment Observation Result Component

The Result Organizer template identifies any lab test batteries that are used to group individual lab observation results. An example is a Complete Blood Count performed with observation results for each test. Each test would be identified in Result Component entries.

Table 112: Result Organizer Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
4470		@typeCode	M:1..1	

CONF	Business Name & Description	Element Name	E&C	Element Data Type
4471		@contextConductionInd	M:1..1	
4472		templateId	M:1..1	II
4473		organizer	R:1..1	
4474		@classCode	M:1..1	
4475		@moodCode	M:1..1	
4477	**Result Battery ID** Unique and persistent identifier for the battery.	id	R:0..1	II
4478	**Result Battery Code** Code identifying the battery being reported. This maps from battery codes reported in OBX-3 in HL7v2.	code	R:1..1	CD
4479	**Result Battery Status** The status of the battery. 'Active' shall be sent to indicate non-Final status, while 'Completed' is used to indicate either a Final or Corrected battery.	statusCode	R:1..1	CS
4480	**Result Battery Author**	author (Author Participation)	O:0..*	
4519	**Result Organizer Comments**	component (Comment Observation)	O:0..1	
4481	**Result Observation**	component (Result Component)	R:1..*	

A Result Organizer (`Organizer`) element:

1) **SHALL** contain exactly one [1..1] **`@typeCode`**="`COMP`" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:4470].
2) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:4471].
3) **SHALL** contain exactly one [1..1] **`templateId`** [CONF:4472] such that it,
   a) **SHALL** contain exactly one [1..1] **`@root`**="`2.16.840.1.113883.3.163.99.4.4.14`" [CONF:4472.12].
4) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`organizer`** [CONF:4473].
   a) **SHALL** contain exactly one [1..1] **`@classCode`** [CONF:4474].
   b) **SHALL** contain exactly one [1..1] **`@moodCode`**="`EVN`" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:4475].
   c) **SHALL** contain zero or one if available [0..1] **`id`** [CONF:4477].
   d) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`code`**, which **SHALL** be selected from ValueSet ObservationResultableLabType 2.16.840.1.113883.2.20.3.105 **DYNAMIC** [CONF:4478].
   e) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **`statusCode`**, which **SHALL** be selected from ValueSet x_ActStatusActiveComplete 2.16.840.1.113883.1.11.19890 **STATIC** [CONF:4479].
   f) **MAY** contain zero or more [0..*] **`author`** [CONF:4480] such that each,
      i) **SHALL** contain exactly one [1..1] Author Participation (`2.16.840.1.113883.3.163.99.4.4.4`) [CONF:4480.1].
   g) **MAY** contain zero or one [0..1] **`component`** [CONF:4519] such that it,

i) **SHALL** contain exactly one [1..1] Comment Observation (`2.16.840.1.113883.3.163.99.4.4.3`) [CONF:4519.1].

h) **SHALL** contain one or more (or a `nullFlavor` value) [1..*] **`component`** [CONF:4481] such that each,

i) **SHALL** contain exactly one [1..1] Result Component (`2.16.840.1.113883.3.163.99.4.4.8`) [CONF:4481.1].

The following XML example outlines how to use the Result Organizer template:

```
<component contextConductionInd="true" typeCode="COMP">
    <templateId root="2.16.840.1.113883.3.163.99.4.4.14"/>
    <!-- Result Organizer -->
    <organizer classCode="BATTERY" moodCode="EVN">
        <code code="58410-2" codeSystem="2.16.840.1.113883.3.3068.10.8.1"
codeSystemName="pCLOCD" displayName="CBC">
            <translation code="CBC" codeSystem="2.1.1.1" codeSystemName="Local"
displayName="Complete Blood Count">
                <originalText>Complete Blood Count</originalText>
            </translation>
        </code>
        <statusCode code="completed"/>
        <!-- Ordering Provider -->
        <author typeCode="AUT" contextControlCode="OP">
            <time value="20140324"/>
            <assignedAuthor classCode="ASSIGNED">
                <id extension="022222" root="2.16.840.1.113883.11.13130"/>
                <code code="MD" codeSystem="2.16.840.1.113883.5.111"
codeSystemName="RoleCode" displayName="Medical Doctor"/>
                <assignedPerson classCode="PSN" determinerCode="INSTANCE">
                    <name>
                        <prefix>Dr.</prefix>
                        <given>L</given>
                        <family>Provider</family>
                    </name>
                </assignedPerson>
            </assignedAuthor>
        </author>
        <!--Comment Observation-->
        <component typeCode="COMP">
            <templateId root="2.16.840.1.113883.3.1818.10.4.3"/>
            <observation classCode="OBS" moodCode="EVN">
                <code code="48767-8" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Annotation Comment"/>
                <value xsi:type="ST">Comments to LAB:  Pre-Dialysis. Fax to Satellite
Unit.</value>
            </observation>
        </component>
        <!-- Result Components -->
        <component typeCode="COMP" contextConductionInd="true">
            <templateId root="2.16.840.1.113883.3.163.99.4.4.8"/>
            <observation classCode="OBS" moodCode="EVN">
                ...
            </observation>
        </component>
    </organizer>
</component>
```

Figure 73: Result Organizer entry example

8.14 SECONDARY CODE (UNBOUND)

`[Observation: templateId 2.16.840.1.113883.3.163.99.4.4.5(closed)]`

Table 113: Secondary Code (Unbound) Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Problem & Condition Observation	N/A

The Secondary Code (Unbound) template is a generic template that is referenced by various section or entry templates to enable the consistent communication of a secondary code. The specification recognizes that there are many coding options for procedures or care events (depending on the scope of practice and jurisdictional requirements of the practitioners) as well as for problems or conditions. Consequently, it is recommended that if the source system has more than one code for an item (such as a procedure, care event, problem or condition) from alternate coding systems it should include all available codes so as to increase the change that a receiving system will recognize and support one of the code systems.

Note that this is NOT intended to reflect a precise mapping between a primary code and a secondary code since the granularity of these codes may be different and hence the meaning of these codes may not be identifical.

An example of this is the situation where both an ICD code as well as a SNOMED CT® are designated for an encounter reason. One code may be classificatory in nature while the other may reflect a more precise clinical, diagnostic statement.

Table 114: Secondary Code (Unbound) Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3391		`@typeCode`	M:1..1	
3392		`@contextConductionInd`	M:1..1	
3393		`templateId`	O:0..*	II
3394		`observation`	R:1..1	
3395		`@classCode`	M:1..1	
3396		`@moodCode`	M:1..1	
3397	**Secondary Unbounded Observation Code**	`code`	M:1..1	CD
3398	**Secondary Code Value** Code from Secondary Coding system.	`value`	M:1..1	CD

A Secondary Code (Unbound) (`Observation`) element:

1) **SHALL** contain exactly one [1..1] **`@typeCode`**="`COMP`" component (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3391].
2) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:3392].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3393] such that each,

a) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.3.163.99.4.4.5" [CONF:3393.12].

4) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **{CDAR2}** **observation** [CONF:3394].
   a) **SHALL** contain exactly one [1..1] **@classCode**="OBS" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3395].
   b) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3396].
   c) **SHALL** contain exactly one [1..1] **code**="SECCODE" Secondary Code Observation (CodeSystem: ObservationType-CA-Pending 2.16.840.1.113883.3.3068.10.6.3) [CONF:3397].
   d) **SHALL** contain exactly one [1..1] **value** [CONF:3398].

The following XML example outlines how to use the Secondary Code (Unbound) template:

```
<entryRelationship typeCode="COMP" contextConductionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.4.5"/>
    <!-- Secondary Code (Unbound) -->
    <observation classCode="OBS" moodCode="EVN">
        <code code="SECCODE" codeSystem="2.16.840.1.113883.3.1818.10.6"
            codeSystemName="ObservationType-CA-Pending"/>
        <value xsi:type="CD" code="I10" codeSystem="2.16.840.1.113883.6.3"
            codeSystemName="ICD-10" displayName="Essential (primary) hypertension"/>
    </observation>
</entryRelationship>
```

Figure 74: Secondary Code (Unbound) entry example

8.15 SEVERITY OBSERVATION

[Observation: templateId 2.16.840.1.113883.3.163.99.4.4.9(closed)]

Table 115: Severity Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Allergy Observation Reaction Observation	N/A

The Severity Observation template is a generic template that is referenced by various section or entry templates to enable the consistent communication of a severity pertaining to another observation. Severity represents the gravity of the problem, such as allergy or reaction, in terms of its actual or potential impact on the patient. The Severity Observation can be associated with an Allergy Observation, Reaction Observation or both. When the Severity Observation is associated directly with an Allergy it characterizes the Allergy. When the Severity Observation is associated with a Reaction Observation it characterizes a Reaction. A person may manifest many symptoms in a reaction to a single substance, and each reaction to the substance can be represented. However, each reaction observation can have only one severity observation associated with it. For example, someone may have a rash reaction observation as well as an itching reaction observation, but each can have only one level of severity.

The Severity Observation template supports communicatoin of both coded and free text severities.

Table 116: Severity Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3879		@typeCode	M:1..1	
3880		@contextConductionInd	M:1..1	
3881		templateId	O:0..*	II
3882		observation	R:1..1	
3883		@classCode	M:1..1	
3884		@moodCode	M:1..1	
3885	**Severity Observation Code**	code	R:1..1	CD
3886	**Free Text Severity**	text	R:0..1	ED
3887	**Coded Severity value**	value	R:0..1	CD

A Severity Observation (Observation) element:

1) **SHALL** contain exactly one [1..1] **@typeCode**="SUBJ" subject (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3879].
2) **SHALL** contain exactly one [1..1] **@contextConductionInd** [CONF:3880].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **templateId** [CONF:3881] such that each,
   a) **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.3.163.99.4.4.9" [CONF:3881.12].
4) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **{CDAR2}** **observation** [CONF:3882].
   a) **SHALL** contain exactly one [1..1] **@classCode**="OBS" observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3883].
   b) **SHALL** contain exactly one [1..1] **@moodCode**="EVN" event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3884].
   c) **SHALL** contain exactly one (or a nullFlavor value) [1..1] **code**="SEV" severity (CodeSystem: ActCode 2.16.840.1.113883.5.4) [CONF:3885].
   d) **SHALL** contain zero or one if available [0..1] **text** [CONF:3886].
   e) **SHALL** contain zero or one if available [0..1] **value**, which **SHALL** be selected from ValueSet AllergyTestValue 2.16.840.1.113883.1.11.19696 **STATIC** [CONF:3887].

The following XML example outlines how to use the Severity Observation template:

```
<entryRelationship typeCode="COMP" contextConductionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.4.9"/>
    <!-- Severity Observation -->
    <observation classCode="OBS" moodCode="EVN">
        <code code="SEV" codeSystem="2.16.840.1.113883.5.4"
            codeSystemName="HL7 ActCode" displayName="Severity"/>
        <value xsi:type="CD" code="MI" codeSystem="2.16.840.1.113883.5.4"
            codeSystemName="HL7 ObservationValue" displayName="mild"/>
    </observation>
</entryRelationship>
```

Figure 75: Severity Observation entry example

8.16 UNBOUND OBSERVATION

`[Observation: templateId 2.16.840.1.113883.3.163.99.4.4.2(closed)]`

Table 117: Unbound Observation Template Context

Directly Used by Template(s)	Directly Contains Template(s)
Medication Activity Problem & Condition Observation	N/A

The Unbound Observation template is a generic comment template that is referenced by various section or entry templates to enable the consistent communication of an observation that is not bound to any specific coding system.

The Unbound Observation template supports a code from any identified coding system to identify the type of observation. The observation value may be coded or free text comment.

Table 118: Unbound Observation Constraints Overview

CONF	Business Name & Description	Element Name	E&C	Element Data Type
3356		`@typeCode`	M:1..1	
3357		`@contextConductionInd`	M:1..1	
3358		`templateId`	O:0..*	II
3359		`observation`	R:1..1	
3360		`@classCode`	M:1..1	
3361		`@moodCode`	M:1..1	
3362	**Unbounded Observation Code**	`code`	R:1..1	CD
3363	**Free Text Observation**	`text`	O:0..1	ED
3364	**Coded Observation**	`value`	O:0..*	CD

An Unbound Observation (`Observation`) element:

1) **SHALL** contain exactly one [1..1] **`@typeCode`**`="SUBJ"` subject (CodeSystem: ActRelationshipType 2.16.840.1.113883.5.1002) [CONF:3356].
2) **SHALL** contain exactly one [1..1] **`@contextConductionInd`** [CONF:3357].
3) **MAY** contain zero or more [0..*] **{CDAR2}** **`templateId`** [CONF:3358] such that each,
   a) **SHALL** contain exactly one [1..1] **`@root`**`="2.16.840.1.113883.3.163.99.4.4.2"` [CONF:3358.12].
4) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`observation`** [CONF:3359].
   a) **SHALL** contain exactly one [1..1] **`@classCode`**`="OBS"` observation (CodeSystem: ActClass 2.16.840.1.113883.5.6) [CONF:3360].
   b) **SHALL** contain exactly one [1..1] **`@moodCode`**`="EVN"` event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) [CONF:3361].
   c) **SHALL** contain exactly one (or a `nullFlavor` value) [1..1] **{CDAR2}** **`code`**`="UNBOUND"` Unbound Observation Code (CodeSystem: ObservationType-CA-Pending 2.16.840.1.113883.3.3068.10.6.3) [CONF:3362].
   d) **MAY** contain zero or one [0..1] **{CDAR2}** **`text`** [CONF:3363].
   e) **MAY** contain zero or more [0..*] **{CDAR2}** **`value`** [CONF:3364].

The following XML example outlines how to use the Unbound Observation template:

```
<entryRelationship typeCode="COMP" contextConductionInd="true">
    <templateId root="2.16.840.1.113883.3.163.99.4.4.2"/> <!--Unbound Observation-->
    <observation classCode="OBS" moodCode="EVN">
        <code code="29546-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="History of Symptoms"/>
        <text>
            Lymphadenopathy, general malaise, fatigue, chest congestion, cough,
decrease in appetite
        </text>
    </observation>
</entryRelationship>
```

Figure 76: Unbound Observation entry example

9.0 DATA TYPES

9.1 OVERVIEW

Data Type Assignment

Each data element in this specification has a data type associate with it. That data type is either the default data type established by the CDA R2 standard or a data type assigned to the element through this specification.

Consider, for example, the `value` attribute in CDA R2 which has been defined using the ANY data type both by CDA as well as within the HL7 Reference Information Model (RIM) on which CDA is broadly based. This data type allows any type of value to be communicated so that, for example, the response to an observation type question can be a date, a scale value, a code, *etc*. In the context of this specification there are instances where the `value` attribute is always intended to communicate a particular type of information. In those cases, wherever feasible, a more specific data type has been designated.

Precedence

Data types in this specification **SHALL** be interpreted in accordance with the following precedence:

- These specifications, particularly any data type templates established and referenced;
- pan-Canadian standards; then
- CDA R2 (which uses HL7 data types R1).

In Scope Data Types

The following table provides a description of the HL7 data types used in this specification:

Table 119: Data Types

Data Type	Name	Description
AD	Postal Address	Mailing and home or office addresses. A sequence of address parts, such as street or post office Box, city, postal code, country. This datatype is of mixed content.
ANY	Any	Defines the basic properties of every data value. This is an abstract type, meaning that no value can be just a data value without belonging to any concrete type. Every concrete type is a specialization of this general abstract DataValue type.
CD	Concept Descriptor	A concept descriptor represents any kind of concept usually by giving a code defined in a code system. A concept descriptor can contain the original text or phrase that served as the basis of the coding and one or more translations into different coding systems. A concept descriptor can also contain qualifiers to describe, e.g., the concept of a "left foot" as a postcoordinated term built from the primary code "FOOT" and the qualifier "LEFT". In exceptional cases, the concept descriptor need not contain a code but only the original text describing that concept.
CE	Coded with	Coded data that consists of a coded value (CV) and, optionally, coded

Data Type	Name	Description
	Equivalents	value(s) from other coding systems that identify the same concept. Used when alternative codes may exist.
CS	Coded Simple Value	Coded data in its simplest form, where only the code is not predetermined. The code system and code system version is fixed by the context in which the CS value occurs. CS is used for coded attributes that have a single HL7-defined value set.
ED	Encapsulated Data	Data that is primarily intended for human interpretation or for further machine processing outside the scope of HL7. This includes unformatted or formatted written language, multimedia data, or structured information in as defined by a different standard.
EN	Entity Name	A name for a person, organization, place or thing. A sequence of name parts, such as first name or family name, prefix, suffix, etc.
II	Instance Identifier	An identifier that uniquely identifies a thing or object. Examples are object identifier for HL7 RIM objects, medical record number, order id, service catalog item id, Vehicle Identification Number (VIN), etc. Instance identifiers are defined based on ISO object identifiers. A globally unique identifier (GUID) will be used as the root for instance identifiers in this application.
IVL	Interval	A set of consecutive values of an ordered base data type. Any ordered type can be the basis of an interval; it does not matter whether the base type is discrete or continuous. If the base data type is only partially ordered, all elements of the interval must be elements of a totally ordered subset of the partially ordered data type.
ON	Organization Name	A name for an organization. A sequence of name parts.
PN	Person Name	A name for a person. A sequence of name parts, such as first name or family name, prefix, suffix, etc. A name part is a restriction of entity name part that only allows those entity name parts qualifiers applicable to person names. Since the structure of entity name is mostly determined by the requirements of person name, the restriction is very minor. This data type is of mixed content.
PQ	Physical Quantity	A dimensioned quantity expressing the result of measuring.
RTO	Ratio	A quantity constructed as the quotient of a numerator quantity divided by a denominator quantity. Common factors in the numerator and denominator are not automatically cancelled out. The data type supports titers (e.g., "1:128") and other quantities produced by laboratories that truly represent ratios.
SC	Character String with Code	A character string that optionally may have a code attached. The text must always be present if a code is present. The code is often a local code.
ST	Character String	The character string data type stands for text data, primarily intended for machine processing (e.g., sorting, querying, indexing, etc.) Used for names, symbols, and formal expressions.
TEL	Telecommunication Address	A telephone number (voice or fax), e-mail address, or other locator for a resource mediated by telecommunication equipment. The address is specified as a Universal Resource Locator (URL) qualified by time specification and use codes that help in deciding which address to use for a given time and purpose.
TS	Timestamp	A quantity specifying a point on the axis of natural time. A point in time is most often represented as a calendar expression. Note: An IVL TS (Interval Timestamp) has to be fully formed, whereas a regular TS can be truncated.

Communication of Coded Data

Coded data is communicated using one of the code-style data types. These data types have been designed to provide for the reliable exchange of coded data by ensuing that not only the code is communicated but other critical data such as the assigning authority, the display text as well as, where applicable, the text that was originally seen by the user.

Original Text and Display Name Components

Within the Code element there is a component `<originalText>` and `<displayName>`. The following provides an explanation of the reason for, and use of, these components.

When using a controlled medical vocabulary there is often the situation where there is a code and a description but within an EMR application it is possible to have a name or synonym displayed that is different than the official description name from the coding system. For example, in ICD-9 there is Osteoarthrosis and allied disorders of the lower leg which is more commonly called osteoarthritis of the knee. Many EMRs have altered the displayed name and descriptions to more closely align with common medical practice and terms. Another reason for altered descriptions is that some are very long like "Osteoarthrosis involving, or with mention of more than one site, but not specified as generalized".

The `<originalText>` component is used to communicate the EMR assigned name/title/description that is displayed to the EMR user at the time of data capture.

The `<displayName>` component is used to communicate the Code System assigned display name for the code selected.

Code System Information

Please see the applicable data type template(s).

9.2 DATA TYPE CONSTRAINT TEMPLATES

9.2.1 Address (AD) pan-Canadian Data Type

`[AD: templateId 2.16.840.1.113883.3.3068.10.5.1(closed)]`

This template establishes specific constraints for the AD data type as follows:

Table 120: Address (AD) pan-Canadian Data Type Constraints Overview

CONF	Business Name & Description	Component Element	E&C	Max Len.	ValueSet
DT-51	Address Type	@use	M:1..1	N/A	x_BasicPostalAddressUse
DT-52	Address Street Lines String of text containing non-coded address information including the street address lines	delimiter	R:1..4	80	
DT-53	City or Township	city	R:0..1	80	
DT-54	Province or State Province or State if free text	state	R:0..1	80	

CONF	Business Name & Description	Component Element	E&C	Max Len.	ValueSet
DT-55	Province or State (Coded) Province or State if coded	coded province/state	O:0..1	N/A	ISO3166-1–CountryCodes
DT-56	Postal Code	postal code	R:0..1	80	
DT-57	Country Country if free text	country	R:0..1	80	
DT-58	Country (Coded) Country if coded	coded country	O:0..1	N/A	ISO3166-2–State/Province
DT-59	Address Part The elements above, except for use, are indicate by using coded address parts	parts	M:1..8	N/A	x_BasicAddressPartType

The following XML example outlines how to use the Address (AD) pan-Canadian Data Type template:

```
<addr use="H">
          <delimiter>2222 Home Street</delimiter>
          <city>Opaskwayak</city>
          <state>MB</state>
          <postalCode>R0B2J0</postalCode>
          <country>CA</country>
 </addr>
```

Figure 77: Address (AD) pan-Canadian Data Type entry example

9.2.2 Coded With Equivalents (CE) pan-Canadian Data Type

`[CE: templateId 2.16.840.1.113883.3.3068.10.5.5(closed)]`

This template establishes specific constraints for the CE data type as follows:

Table 121: Coded With Equivalents (CE) pan-Canadian Data Type Constraints Overview

CONF	Business Name & Description	Component Element	E&C	Max Len.	ValueSet
DT-76	Code	@code	R:1..1	200	
DT-77	Display Name Display name associated with value by the code system.	@displayName	R:0..1	150	
DT-78	Code System	@codeSystem	M:1..1	100	
DT-79	Code System Name	@codeSystemName	O:0..1	20	
DT-80	Code System Version	@codeSystemNameVersion	O:0..1	20	
DT-81	Original Text Text displayed to user at time of data entry.	@originalText	O:0..1	150	

The following XML example outlines how to use the Coded With Equivalents (CE) pan-Canadian Data Type template:

```
<code code="195967001" codeSystem="2.16.840.1.113883.19.6.96"
      codeSystemName="SNOMED CT" displayName="Asthma">
   <translation code="49390" codeSystem="2.16.840.1.113883.19.6.2"
      codeSystemName="ICD9CM" displayName="ASTHMA W/O STATUS ASTHMATICUS"/>
</code>
```

Figure 78: Coded With Equivalents (CE) pan-Canadian Data Type entry example

9.2.3 Concept Descriptor (CD) pan-Canadian Data Type

`[CD: templateId 2.16.840.1.113883.3.3068.10.5.6(closed)]`

This template establishes specific constraints for the CD data type as follows:

Table 122: Concept Descriptor (CD) pan-Canadian Data Type Constraints Overview

CONF	Business Name & Description	Component Element	E&C	Max Len.	ValueSet
DT-82	Code	@code	R:1..1	200	
DT-83	Display Name	@displayName	R:0..1	150	
DT-84	Code System	@codeSystem	M:1..1	100	
DT-85	Code System Name	@codeSystemName	O:0..1	20	
DT-86	Code System Version	@codeSystemName Version	O:0..1	20	
DT-87	Original Text Text displayed to user at time of data entry.	@originalText	O:0..1	150	
DT-88	Qualifier Additional codes that increase the specificity of the the primary code.	@qualifier	R:0..1	N/A	
DT-89	Translation Set of other concept descriptors that translate this concept descriptor into other code systems.	@translation	R:0..1	N/A	

The following XML example outlines how to use the Concept Descriptor (CD) pan-Canadian Data Type template:

```
<code code="396275006" codeSystem="2.16.840.1.113883.19.6.96"
      codeSystemName="SNOMED CT" displayName="Osteoarthritis">
   <originalText>osteoarthritis of the right knee</originalText>
   <translation code="12345" codeSystem="2.16.840.1.113883.19.6.2"
      codeSystemName="ICD9CM" displayName="Osteoarthritis right knee"/>
   <qualifier>
      <name code="363698007" codeSystem="2.16.840.1.113883.19.6.96"
         codeSystemName="SNOMED CT" displayName="finding site"/>
      <value code="6757004" codeSystem="2.16.840.1.113883.19.6.96"
         codeSystemName="SNOMED CT" displayName="right knee"/>
   </qualifier>
</code>
```

Figure 79: Concept Descriptor (CD) pan-Canadian Data Type entry example

9.2.4 Encapsulated Data (ED) pan-Canadian Data Type

`[ED: templateId 2.16.840.1.113883.3.3068.10.5.7(closed)]`

This template establishes specific constraints for the ED data type as follows:

Table 123: Encapsulated Data (ED) pan-Canadian Data Type Constraints Overview

CONF	Business Name & Description	Component Element	E&C	Max Len.	ValueSet
DT-90	Media Type Encoding of the encapsulated data and the method to interpret or render the data.	@mediaType	M:1..1	N/A	MediaType
DT-91	Language For character based information the language property specifies the human language of the text.	@language	R:1..1	N/A	HumanLanguage
DT-92	Compression Indicates whether the raw byte data is compressed, and what compression algorithm was used.	@compression	R:1..1	20	
DT-93	Integrity Check Short binary value representing a cryptographically strong checksum that is calculated over the binary data.	@integrityCheck	O:0..1	20	
DT-94	Reference Telecommunication address (TEL), such as a URL for HTTP or FTP, which will resolve to precisely the same binary data that could as well have been provided as inline data.	@reference	R:1..1	N/A	x_PhoneOrEmailURLScheme
DT-95	Thumbnail Abbreviated rendition of the full data. A thumbnail requires significantly fewer resources than the full data, while still maintaining some distinctive similarity with the full data.	@thumbnail	O:1..1	200	
DT-96	value Encapsulated data itself.	@value	M:1..1	200	

The following XML example outlines how to use the Encapsulated Data (ED) pan-Canadian Data Type template:

```
<text mediaType="image/png" representation="B64"
   integrityCheck="aA5mb7c8TXtu392KMsaSa2MKkAwL5LKAo2d99azAs3MdUdw">
   <reference value="http://example.org/xrays/128s8d9ej229se32s.png">
   <useablePeriod xsi:type="IVL_TS">
      <low value="200007200845"/>
      <high value="200008200845"/>
   </useablePeriod>
   </reference>
   <thumbnail mediaType="image/jpeg" representation="B64">
   MNYD83jmMdomSJUEdmde9j44zmMir6edjzMMIjdMDSsWdIJdksIJR3373jeu83
   6edjzMMIjdMDSsWdIJdksIJR3373jeu83MNYD83jmMdomSJUEdmde9j44zmMir
   ...
   omSJUEdmde9j44zmMiromSJUEdmde9j44zmMirdMDSsWdIJdksIJR3373jeu83
   4zmMir6edjzMMIjdMDSsWdIJdksIJR3373jeu83==
   </thumbnail>
</text>
<text mediaType="application/pdf" representation="B64" compression="GZ">
   omSJUEdmde9j44zmMiromSJUEdmde9j44zmMirdMDSsWdIJdksIJR3373jeu83
   6edjzMMIjdMDSsWdIJdksIJR3373jeu83MNYD83jmMdomSJUEdmde9j44zmMir
   ...
   MNYD83jmMdomSJUEdmde9j44zmMir6edjzMMIjdMDSsWdIJdksIJR3373jeu83
   4zmMir6edjzMMIjdMDSsWdIJdksIJR3373jeu83==
</text>
```

Figure 80: Encapsulated Data (ED) pan-Canadian Data Type entry example

9.2.5 Identifier (II) pan-Canadian Data Type

`[II: templateId 2.16.840.1.113883.3.3068.10.5.4(closed)]`

This template establishes specific constraints for the II data type as follows:

Table 124: Identifier (II) pan-Canadian Data Type Constraints Overview

CONF	Business Name & Description	Component Element	E&C	Max Len.	ValueSet
DT-73	Assigning Authority Name A human readable name or mnemonic for the assigning authority.	@assigningAuthority Name	O:0..1	N/A	
DT-72	Identifier Type	@use	M:1..1	N/A	IdentifierUse
DT-74	Root A unique identifier that guarantees the global uniqueness of the instance identifier. The root alone may be the entire instance identifier.	@root	M:1..1	200	
DT-75	Extension A character string as a unique identifier within the scope of the identifier root.	@extension	M:1..1	20	

The following XML example outlines how to use the Identifier (II) pan-Canadian Data Type template:

```
<id extension="MB20120201RXD-3345639" root="2.16.840.1.113883.3.1818.10.10.5"
assigningAuthorityName="ManitobaHealth"/>
```

Figure 81: Identifier (II) pan-Canadian Data Type entry example

9.2.6 Person Name (PN) pan-Canadian Data Type

`[PN: templateId 2.16.840.1.113883.3.3068.10.5.3(closed)]`

This template establishes specific constraints for the PN data type as follows:

Table 125: Person Name (PN) pan-Canadian Data Type Constraints Overview

CONF	Business Name & Description	Component Element	E&C	Max Len.	ValueSet
DT-64	Person Name Use	@use	M:1..1	N/A	x_BasicPersonNameUse
DT-65	Person Name Title	prefix	O:0..1	50	
DT-66	Person Given Name	first	M:1..*	50	
DT-67	Person Last Name	family	M:1..1	50	
DT-68	Person Name Prefix	prefix	O:0..1	50	
DT-69	Person name Suffix	suffix	O:0..1	50	
DT-70	Person Name part The elements above, except for use, are indicate by using coded name parts	parts	M:2..7	N/A	x_BasicPersonNamePartType
DT-71	Person Name Qualifier Modifier for the name part type. Used to indicate in initials, for example	qualifer	O:0..1	N/A	x_BasicPersonNamePartQualifier

The following XML example outlines how to use the Person Name (PN) pan-Canadian Data Type template:

```
<name>
   <prefix qualifier="AC">Dr. phil. </prefix>
   <given>Regina</given>
   <given>Johanna</given>
   <given>Maria</given>
   <prefix qualifier="NB">Gr&auml;fin </prefix>
   <family qualifier="BR">Hochheim</family>-<family qualifier="SP">Weilenfels</family>
   <suffix qualifier="PR">NCFSA</suffix>
</name>
```

Figure 82: Person Name (PN) pan-Canadian Data Type entry example

9.2.7 Telecom (TEL) pan-Canadian Data Type

`[TEL: templateId 2.16.840.1.113883.3.3068.10.5.2(closed)]`

This template establishes specific constraints for the TEL data type as follows:

Table 126: Telecom (TEL) pan-Canadian Data Type Constraints Overview

CONF	Business Name & Description	Component Element	E&C	Max Len.	ValueSet
DT-60	Telecommunication Address Intent	@use	M:1..1	N/A	x_BasicTelecommunicationsAddressUse
DT-61	Telecommunication Address	@value	M:1..1	40	
DT-62	Telecommunication Address Scheme	@scheme	M:1..1	N/A	
DT-63	Useable Time period Periods of time during which the telecommunication address can be used	@useablePeriod	O:0..1	20	

The following XML example outlines how to use the Telecom (TEL) pan-Canadian Data Type template:

```
<telecom use="H"  value="tel:555-555-5001">
   <useablePeriod xsi:type="IVL_TS">
   <low value="200007200845"/>
   <high value="200008200945"/>
   </useablePeriod>
</telecom>
<telecom use="WP" value="mailto://someone@example.com"/>
```

Figure 83: Telecom (TEL) pan-Canadian Data Type entry example

9.2.8 TimeStamp Interval (IVL_TS) pan-Canadian Data Type

`[IVL_INT: templateId 2.16.840.1.113883.3.3068.10.5.8(closed)]`

This template establishes specific constraints for the IVL_INT data type as follows:

Table 127: TimeStamp Interval (IVL_TS) pan-Canadian Data Type Constraints Overview

CONF	Business Name & Description	Component Element	E&C	Max Len.	ValueSet
DT-97	Low Value Initial or starting date time in a range, inclusive of start date time	@low	M:1..1	20	
DT-98	High Value Ending or final date time in a range, inclusive of ending date time	@high	R:0..1	20	

The following XML example outlines how to use the TimeStamp Interval (IVL_TS) pan-Canadian Data Type template:

```
<effectiveTime>
   <low value="20111231"/>
   <high value="20120930"/>
</effectiveTime>
```

Figure 84: TimeStamp Interval (IVL_TS) pan-Canadian Data Type entry example

10.0 VOCABULARY

10.1 OVERVIEW

This specification aims to provide a sound binding between the document element framework and, for coded elements, an associated Value Set Reference. Each Value Set reference is intended to provide clarity as to the allowable Code System or Systems from which values may be drawn and, where applicable and feasible, to define the set of acceptable code values from that system.

A constrained set of acceptable code values (also known as a reference set) is defined either by declaring the set of codes explicitly by enumerating them ("Extensional" Value Set) or by implicitly describing the set through a quasi set retrieval syntax ("Intentional" Value Set).

For example, the set of Electrocardiogram observations within LOINC® could be expressed as follows:

> Select all non-deprecated LOINC_NUM values from CodeSystem LOINC (`2.16.840.1.113883.6.1`) Version 2.38 / 2011-12-30 where the LOINC CLASS dimension value is "EKG.MEAS".

Figure 85: Example of an "Intentional" Value Set

In some cases no appropriate external Code System may exist or the applicable Code System or Systems are deficient in their ability to express a particular concept. In that case additional code values and descriptions may have been defined.

10.2 CODE SYSTEM AND VALUE SET SELECTION

These specifications lever HL7, Alberta and pan-Canadian specifications whenever possible and applicable. In terms of pan-Canadian specifications, both the Canada Health *Infoway* Standards Colloborative "Master Terminology Worksheet" based value sets as well as the Primary Health Care (PHC) Reference Sets (refSet) are leveraged.

It should be noted that notwithstanding the facts that the PHC refSets are (1) primarily "intended to support implementation of the Draft Pan-Canadian Primary Health Care Electronic Medical Record Content Standard, Version 2.1—Implementation Guide (PHC EMR CS)" [8] and (2) have not been declared as a formal standard at time of publication of this guide, these sets are all based on well estabished and accepted Code Systems such as SNOMED CT®, LOINC®, and the UCUM. Although most of the refSets reflect purpose-specific "subsets" of these Code System, some also include new concepts, within the applicable Canadian Extension framework, that remain to be incorporated into the respective reference terminology or vocabulary system. In addition, they all include preferred English display names. Relevant, for the purpose of this specification, is the fact that the subsetting and extension process was driven by the clinical data requirements in typical day Primary Care Settings, Moreover, the developers of

[8] See https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/primary-health-care-phc-reference-sets.

this specification sought to recommend use of specific PHC refSets solely when said refSets provided appropriate coverage for known concept requirements from the applicable Alberta source or reference specifications.

10.2.1 Diagnostic Imaging

Coding for Diagnostic Imaging (DI) procedures in Alberta varies and includes the following:

- Alberta Health Services providers of DI services use the Common Procedures Examination List (CPEL); this is a provincial set of codes used for workload measurement[9].
- Community providers of DI services use the Schedule of Medical Benefits (SOMB); the associated codes are aligned with the Alberta Health Care Insurance plan.
- Radiology Information Systems (RIS) solutions use various specific/custom codes.

A Diagnostic Imaging Vocabulary Code was was recently submitted to the Health Information Standards Committee for Alberta (HISCA) and was accepted as draft on January 19, 2010. According to HISCA, this set "includes DI Relevant Priors, DI Ultrasound, SNOMED CT procedures list, Relevant Priors and Ultrasound SNOMED CT mapping, Ultrasound SNOMED CT and CPEL mapping, Ultrasound SNOMED CT and SOMB mapping and Ultrasound CT and MIS mapping."

Although the extent of use for SNOMED CT Is not known, this CDA standard proposes SNOMED CT as the preferred code system for identification of DI observations.

10.3 VOCABULARY BINDING

This guide follows HL7 standards and conventions for value set and code system bindings. The text below is intended to summarize key aspects of this approach. In case of discrepancy between this text and the HL7 standard, the latter **SHALL** prevail.

Generally, ***fixed values*** are bound to a specific value from a specific Code Systems while ***coded values*** reference a specific Value Set. Value Sets, conversely, establish a specific set of code values that are individually drawn from one or more Code System.

The following sections summarize the Value Sets and Code Systems referenced by this guide.

For each named Value Set reference this guide provides:

- The applicable Value Set OID which uniquely defines the rules for instantiating this set with valid vocabulary values.
- The designated binding realm (*e.g*. UV=Universal, CA=Canada, *etc.*); this is provided for information only since each Value Set OID references a specific Value Set applicable in a particular Realm context.

[9] Although this is conceptually the same as the "MIS" set of codes required by CIHI workload measurement reporting, the CPEL does represent a distinct, customized Alberta value set..

- The type of binding:
  - **STATIC:** For static bindings the allowed values of the Value Set do not change automatically as new values are added to a Value Set.
  - **DYNAMIC:** With dynamic bindings the intent is to have the allowed values for a coded item automatically change (expand or contract) as the Value Set is maintained over time. This means that for dynamic binding, the binding is to the most current version of the Value Set. In implementations where a terminology server exists and can provide up-to-the-minute access to valid values, this would suit applications which can dynamically update drop down boxes.
- The primary Code System on which the Value Set is based (note that some Value Sets use multiple Code Systems).
- A description for the Value Set; note that for ***intentional*** value sets this description may include information on how the Value Set is formed (see Figure 85 above).

For each named Code System reference this guide provides:

- The applicable Code System OID which identifies this Code System; note that this is the OID actually included in each document (or message) instance to uniquely identify the Code System through which to interpret the code.
- A description of the Code System.
- The name of the custodial authority for the Code System.
- A reference URL (if available).

10.4 REFERENCE TERMINOLOGY BASED CONSIDERATIONS

10.4.1 pan-Canadian LOINC® Observation Code Database (pCLOCD)

This specification makes extensive use of LOINC® codes. Implementers should note that a given LOINC® code may be defined solely within the pCLOCD if it has not yet been successfully promoted to the full Regenstrief LOINC release. Moreover, the pCLOCD also conveys additional guidance (*e.g*. Canadian display name) for in-scope concept codes. When the pCLOCD is the preferred code system then this will be indicated by reference to the pCLOCD Code System's Object Identifer ("2.16.840.1.113883.2.20.5.1"). In the event LOINC is referenced directly through its Code System OID ("2.16.840.1.113883.6.1") Implementers **MAY** refer to the pCLOCD prior to the full LOINC value set to resolve descriptions and/or seek other applicable guidance.

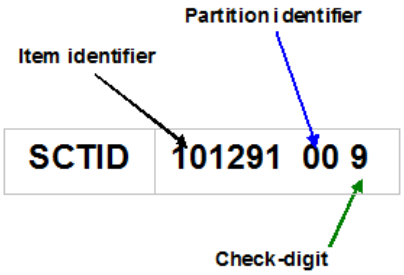
10.4.2 SNOMED CT®

Codes or Concept Identifiers

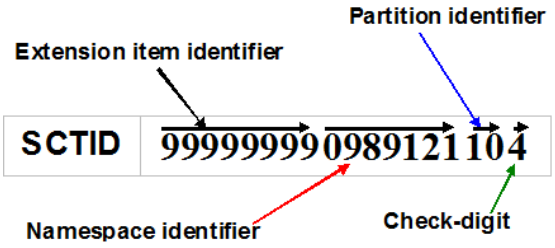
This specification makes use of SNOMED CT® concepts for certain value sets. Implementers should note that some of these concepts may be drawn from an extension (*e.g*. Canadian Extension, Alberta

Extension, *etc*.) rather than from the SNOMED CT® international core. For example, the Primary Health Care reference sets created by Canada Health Infoway and Canadian Institute for Health Information (CIHI) include a number of concepts that are defined solely in the Canadian extension. Therefore, implementers **SHALL** interpret the applicable concept code, also known as a SNOMED CT ID or SCTID, as specified in the ***SNOMED CT Technical Implementation Guide***.

The following figure from the 2013 version of the guide illustrates the applicable formats:



SCTID Short Format – Applicable to components originating from the International Release.



SCTID Long Format – Applicable to components originating from a SNOMED CT Extension.

Figure 86: SNOMED CT® ID (SCTID) Format Illustration

The Namespace identifier for the Canadian extension is "1000087"; therefore SCTID values of the form `nnnnnnnn100087nnn` represent concepts defined through that extension.

Descriptions

Descriptions for SNOMED CT based concepts listed in this guide **SHALL** not be considered normative. In the case of discrepancy between a description shown in this guide and the corresponding description in either the SNOMED CT International Release or the applicable Extension, as the case may be, the latter **SHOULD** prevail.

Please note that radical differences may be an indication of a specification error and should be drawn to the attention of the specification authority for remediation.

10.4.3 The Unified Code for Units of Measure (UCUM)

This specification designates the Unified Code for Units of Measure (UCUM) as the code system for the expression of units of measure. Although UCUM considers itself and is designated by HL7 as a code system, it could more accurately be described as a grammar that defines the expression of valid units. As such it represents an intentional value set that consists of all expressions of units of measure that confirm to the rules stipulated by UCUM. In addition, it should be noted that UCUM is not used in these (or, in fact, many interoperability specifications) as a typical code system linked to a code field; rather it is used in the `unit` component of a quantity based data type.

10.5 EXTERNAL REFERENCES

This implementation guide incorporates certain external vocabularies and/or terminologies and may display specific value sets and/or reference sets from these external sources as a matter of convenience for implementers. The table below summarizes these sources as well as the specific version or date incorporated:

Table 128: Incorporated External Vocabulary or Terminology Sources

Vocabulary / Terminology Source (Publication URL)	Version and/or Date
HL7 RIM Repository http://wiki.hl7.org/index.php?title=%20RIM_Maintenance_and_Tooling_Documentation	Voc1148 (20120324)
Infoway Master Terminology Worksheet https://www.infoway-inforoute.com/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts	R02.04.03 - 20100831
Infoway / CIHI Primary Health Care (PHC) Reference Sets https://www.infoway-inforoute.com/index.php/programs-services/standards-collaborative/pan-canadian-standards/primary-health-care-phc-reference-sets	V1.0 (August 2012 Release)

Implementers should note the following caveats regarding use of these external vocabulary sources in this guide:

- This guide may display specific value set content from the incorporated vocabulary sources. This content (*i.e.* the specific codes and descriptions) incorporated **SHALL** always be considered informative. In case of discrepancy between the content shown in this guide and the original, authoritative source, the latter **SHALL** be deemed correct.
- Although a reference URL may have been provided, this cannot be guaranteed since the applicable custodian organization may change publication policies and/or locations.
- Access to certain value set resources maintained by the Infoway Standards Collaborative requires membership at a certain level. These membership rules and associated costs change from time to time. Implementers should consult directly with the Standards Collaborative for further information. At the time of publication of this guide, membership details, including costs and associated privileges, are available at the following URL:

  https://www.infoway-inforoute.com/index.php/programs-services/standards-collaborative/membership

10.6 VALUESET REFERENCES

The following table summarizes the ValueSet references use in this guide together with applicable binding information:

Table 129: ValueSet References & Bindings

ValueSet OID	ValueSet Name	Binding	
		Realm	Type

ValueSet OID	ValueSet Name	Binding	
		Realm	Type
2.16.840.1.113883.2.20.3.7	ActDiagnosisCode	CA	STATIC
2.16.840.1.113883.1.11.159331	ActStatus	UV	STATIC
2.16.840.1.113883.1.11.1	AdministrativeGender	UV	STATIC
2.16.840.1.113883.3.3068.10.8.6	AdvanceDirectiveType	CA-Pending	STATIC
2.16.840.1.113883.3.163.99.4.8.7	AlbertaDocumentType	CA-AB	STATIC
2.16.840.1.113883.3.163.99.4.8.1	AlbertaReferralPathwayQuestion	CA-AB	DYNAMIC
2.16.840.1.113883.3.163.99.4.8.6	AlbertaVaccineCode	CA-AB	DYNAMIC
2.16.840.1.113883.3.3068.10.8.9	AllergenEntityCode	CA-Pending	STATIC
2.16.840.1.113883.2.20.3.211	AllergyIntoleranceStatusCode	CA	DYNAMIC
2.16.840.1.113883.1.11.19696	AllergyTestValue	UV	STATIC
2.16.840.1.113883.3.3068.10.8.8	CDAHeaderActClass	CA-Pending	STATIC
2.16.840.1.113883.2.20.3.260	ClientSocialBehaviourCode	CA	DYNAMIC
2.16.840.1.113883.2.20.3.29	ClinicalDrug	CA	DYNAMIC
2.16.840.1.113883.2.20.3.40	DiagnosisValuePrimary	CA	DYNAMIC
2.16.840.1.113883.1.11.10870	DocumentType	UV	DYNAMIC
2.16.840.1.113883.2.20.3.48	HealthcareProviderRoleType	CA	DYNAMIC
2.16.840.1.113883.1.11.11526	HumanLanguage	UV	DYNAMIC
2.16.840.1.113883.2.20.3.53	IdentifierUse	CA	STATIC
2.16.840.1.113883.3.3068.10.8.16	ImagingProcedureObservationType	CA-Pending	DYNAMIC
1.0.3166.1	ISO3166-1–CountryCodes	UV	DYNAMIC
1.0.3166.2	ISO3166-2–State/Province	UV	DYNAMIC
2.16.840.1.113883.3.3068.10.8.36	LaboratorySpecialtyCodes	CA-AB	STATIC
2.16.840.1.113883.2.20.3.51	LanguageCode	CA	DYNAMIC
2.16.840.1.113883.1.11.14824	MediaType	UV	STATIC
2.16.840.1.113883.2.20.3.78	ObservationInterpretation	CA	STATIC
2.16.840.1.113883.1.11.10206	ObservationInterpretationNormality	UV	STATIC
2.16.840.1.113883.2.20.3.164	ObservationOrderableLabType	CA	DYNAMIC
2.16.840.1.113883.2.20.3.105	ObservationResultableLabType	CA	DYNAMIC
2.16.840.1.113883.3.3068.10.8.21	ObservationValue	CA-Pending	DYNAMIC
2.16.840.1.113883.2.20.3.88	ParticipationSignature	CA	STATIC
2.16.840.1.113883.1.11.10901	ParticipationType	UV	STATIC
2.16.840.1.113883.3.3068.10.8.1	pCLOCD	CA	DYNAMIC
2.16.840.1.113883.3.163.99.4.8.5	PINDosageFormCode	CA-AB	STATIC
2.16.840.1.113883.3.163.99.4.8.3	PINRouteOfAdministrationCode	CA-AB	STATIC
2.16.840.1.113883.3.3068.10.8.11	Procedure	CA-Pending	DYNAMIC
2.16.840.1.113883.3.3068.10.8.18	ReactionTypeCode	CA-Pending	DYNAMIC
2.16.840.1.113883.3.3068.10.8.22	ReasonObservationValue	CA-Pending	DYNAMIC
2.16.840.1.113883.3.3068.10.8.3	sctProducedure	UV	DYNAMIC
2.16.840.1.113883.1.11.11610	x_ActRelationshipDocument	UV	STATIC
2.16.840.1.113883.1.11.19890	x_ActStatusActiveComplete	UV	STATIC
2.16.840.1.113883.2.20.3.138	x_BasicAddressPartType	CA	STATIC
2.16.840.1.113883.2.20.3.139	x_BasicConfidentialityKind	CA	STATIC
2.16.840.1.113883.2.20.3.140	x_BasicPersonNamePartQualifier	CA	STATIC
2.16.840.1.113883.2.20.3.141	x_BasicPersonNamePartType	CA	STATIC

ValueSet OID	ValueSet Name	Binding	
		Realm	Type
2.16.840.1.113883.2.20.3.142	x_BasicPersonNameUse	CA	STATIC
2.16.840.1.113883.2.20.3.143	x_BasicPostalAddressUse	CA	STATIC
2.16.840.1.113883.2.20.3.144	x_BasicTelecommunicationsAddressUse	CA	STATIC
2.16.840.1.113883.1.11.19741	x_PhoneOrEmailURLScheme	UV	STATIC

ActDiagnosisCode

Table 130: ActDiagnosisCode Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.7 STATIC
Code System(s)	ActCode 2.16.840.1.113883.5.4
Description	N/A
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts

ActStatus

Table 131: ActStatus Definition

ValueSet OID & Binding	2.16.840.1.113883.1.11.159331 STATIC
Code System(s)	ActStatus 2.16.840.1.113883.5.14
Description	Contains the names (codes) for each of the states in the state-machine of the RIM Act class.
Authority	HL7 International
Reference URL	http://www.hl7.org
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
active	ActStatus	active
cancelled	ActStatus	cancelled
completed	ActStatus	completed
held	ActStatus	held
new	ActStatus	new
normal	ActStatus	normal
nullified	ActStatus	nullified
obsolete	ActStatus	obsolete
suspended	ActStatus	suspended
aborted	ActStatus	aborted

AdministrativeGender

Table 132: AdministrativeGender Definition

ValueSet OID & Binding	2.16.840.1.113883.1.11.1 STATIC
Code System(s)	AdministrativeGender 2.16.840.1.113883.5.1

Description	The gender of a person used for adminstrative purposes (as opposed to clinical gender)
Authority	HL7 International
Reference URL	http://www.hl7.org
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
F	AdministrativeGender	Female
M	AdministrativeGender	Male
UN	AdministrativeGender	Undifferentiated

AdvanceDirectiveType

Table 133: AdvanceDirectiveType Definition

ValueSet OID & Binding	2.16.840.1.113883.3.3068.10.8.6 STATIC
Code System(s)	SNOMED-CT 2.16.840.1.113883.6.96
Description	The types of advance directives.
Authority	Infoway Standards Collaborative (once submitted and accepted)
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
52765003	SNOMED-CT	Intubation
61420007	SNOMED-CT	Tube Feedings
71388002	SNOMED-CT	Other Directive
78823007	SNOMED-CT	Life Support
89666000	SNOMED-CT	CPR
225204009	SNOMED-CT	IV Fluid and Support
281789004	SNOMED-CT	Antibiotics
304251008	SNOMED-CT	Resuscitation

AlbertaDocumentType

Table 134: AlbertaDocumentType Definition

ValueSet OID & Binding	2.16.840.1.113883.3.163.99.4.8.7 STATIC
Code System(s)	TBD
Description	The list of valid document types used in Alberta Clinical Documents.
Authority	Alberta Health
Reference URL	http://www.health.alberta.ca/
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
11488-4	LOINC	Consultation note
57133-1	LOINC	Care Referral Note

Code	Code System	Description / Print Name
57170-3	LOINC	Care Referral Note; Cardiovascular Disease
57134-9	LOINC	Care Referral Note; Dentistry
57135-6	LOINC	Care Referral Note; Dermatology
57136-4	LOINC	Care Referral Note; Diabetology
57137-2	LOINC	Care Referral Note; Endocrinology
57138-0	LOINC	Care Referral Note; Gastroenterology
57139-8	LOINC	Care Referral Note; General Medicine
57140-6	LOINC	Care Referral Note; General Surgery
57171-1	LOINC	Care Referral Note; Geriatric Medicine
57179-4	LOINC	Care Referral Note; Obstetrics and Gynecology
57172-9	LOINC	Care Referral Note; Hematology and Oncology
57141-4	LOINC	Care Referral Note; Infectious Disease
57142-2	LOINC	Care Referral Note; Kinesiotherapy
57143-0	LOINC	Care Referral Note; Mental Health
57144-8	LOINC	Care Referral Note; Nephrology
57145-5	LOINC	Care Referral Note; Neurology
57146-3	LOINC	Care Referral Note; Neurosurgery
57173-7	LOINC	Care Referral Note; Nutrition and Dietetics
57147-1	LOINC	Care Referral Note; Occupational Health
57148-9	LOINC	Care Referral Note; Occupational Therapy
57149-7	LOINC	Care Referral Note; Oncology
57150-5	LOINC	Care Referral Note; Ophthalmology
57151-3	LOINC	Care Referral Note; Optometry
57174-5	LOINC	Care Referral Note; Oral surgery
57175-2	LOINC	Care Referral Note; Orthopedic Surgery
57176-0	LOINC	Care Referral Note; Otolaryngology
57152-1	LOINC	Care Referral Note; Pharmacy
57153-9	LOINC	Care Referral Note; Physical Medicine and Rehabilitation
57154-7	LOINC	Care Referral Note; Physical Therapy
57155-4	LOINC	Care Referral Note; Plastic Surgery
57156-2	LOINC	Care Referral Note; Podiatry
57157-0	LOINC	Care Referral Note; Psychiatry
57158-8	LOINC	Care Referral Note; Psychology
57177-8	LOINC	Care Referral Note; Pulmonary Disease
57159-6	LOINC	Care Referral Note; Radiation Oncology
57160-4	LOINC	Care Referral Note; Recreational Therapy
57161-2	LOINC	Care Referral Note; Rehabilitation
57162-0	LOINC	Care Referral Note; Respiratory Therapy
57163-8	LOINC	Care Referral Note; Rheumatology
57164-6	LOINC	Care Referral Note; Social Work
57165-3	LOINC	Care Referral Note; Speech Therapy
57166-1	LOINC	Care Referral Note; Surgery
57167-9	LOINC	Care Referral Note; Thoracic Surgery

Code	Code System	Description / Print Name
57168-7	LOINC	Care Referral Note; Urology
57169-5	LOINC	Care Referral Note; Vascular Surgery
57178-6	LOINC	Care Referral Note; Critical Care Medicine
34133-9	LOINC	Summarization of episode note
18842-5	LOINC	Discharge summarization note
18761-7	LOINC	Transfer summarization note
28622-9	LOINC	Discharge assessment note
28570-0	LOINC	Procedure note
x-CLINNT	SCTEMP	Clinical Note
11524-6	LOINC	Study Report (EKG)
11523-8	LOINC	Study Report (ECG)
34878-9	LOINC	Note (Emergency Medicine)
18749-2	LOINC	Electromyogram Study
28626-0	LOINC	History and Physical Note
34109-9	LOINC	Note
11504-8	LOINC	Surgical Operation Note
11506-3	LOINC	Subsequent Evaluation Note
18748-4	LOINC	Study Report (Diagnostic Imaging)
11529-5	LOINC	Surgical Pathology Study
11502-2	LOINC	Laboratory Report

AlbertaReferralPathwayQuestion

Table 135: AlbertaReferralPathwayQuestion Definition

ValueSet OID & Binding	2.16.840.1.113883.3.163.99.4.8.1 DYNAMIC
Code System(s)	AlbertaPathwayQuestion 2.16.840.1.113883.3.163.99.4.6.2
Description	A list of questions from which specific referal pathway question sets are devised to support eReferral requests.
Authority	Health Information Standards Committee for Alberta (HISCA)
Reference URL	http://www.health.alberta.ca/about/HISCA.html
Code Table Filter	Example codes shown below (Please consult authoritative source for full value set content).

Code	Code System	Description / Print Name
100-001	AlbertaPathwayQuestion	Pain on motion (e.g. walking, bending)
100-002	AlbertaPathwayQuestion	Pain at rest (e.g. while sitting, lying down, or causing sleep disturbance)
100-003	AlbertaPathwayQuestion	Other functional limitations (e.g. putting on shoes, managing stairs, sitting to standing, sexual activity, bathing, cooking, recreation or hobbies)
100-004	AlbertaPathwayQuestion	Abnormal findings on physical exam related to most severaly affected joint (e.g. deformity, instability, leg length difference, restriction of range of motion on exam)
...	...	...

AlbertaVaccineCode

Table 136: AlbertaVaccineCode Definition

ValueSet OID & Binding	2.16.840.1.113883.3.163.99.4.8.6 DYNAMIC
Code System(s)	SNOMED CT 2.16.840.1.113883.6.96, AlbertaVaccineCode 2.16.840.1.113883.3.163.99.4.6.3
Description	This is the list of Alberta vaccine codes. Note that at this time, the list is implemented through a hybrid value set consisting of both SNOMED CT concept codes (including Canadian extension codes established through the Primary Health Care reference set) as well as applicable Alberta codes. This is a due to the fact that the list of vaccines includes concepts that cannot yet be expressed in SNOMED CT. It is anticipated that this hybrid list will remain in place until all needed concepts can be expressed in SNOMED CT, either because missing concepts have been added to the Canadian or Alberta extensions or because concepts have been retired from the list. Implementers should note that different code systems apply depending on whether a concept is expressed using SNOMED CT or using the current Alberta custom code. Please consult the value set table for further details.
Authority	Alberta Health
Reference URL	http://www.health.alberta.ca/
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
333521006	SNOMED-CT	Anthrax vaccine
333532006	SNOMED-CT	Botulism antitoxin vaccine
418268006	SNOMED-CT	Attenuated Bacillus Calmette Guerin
35736007	SNOMED-CT	Cholera vaccine
409579003	SNOMED-CT	Inactivated whole-cell/recombinant-B-subunit cholera vaccine
428214002	SNOMED-CT	Diphtheria vaccine (product)
77048008	SNOMED-CT	Diphtheria antitoxin
125580002	SNOMED-CT	Diphtheria and tetanus toxoids and whole-cell pertussis (product)
DPTP	AlbertaVaccineCode	Diphtheria/whole cell Pertussis/ Tetanus/ IPV
DPTPHib	AlbertaVaccineCode	Diphtheria/whole cell Pertussis/ Tetanus/ IPV/Hib
11304004	SNOMED-CT	Delayed hypersensitivity skin test for diphtheria (procedure)
DT	AlbertaVaccineCode	Diphtheria/Tetanus toxoids (pediatric)
125581003	SNOMED-CT	Diphtheria and tetanus toxoids and acellular pertussis
783704961000087000	SNOMED-CT	Acellular pertussis + diphtheria + inactivated poliomyelitis + recombinant hepatitis B virus + tetanus vaccine (product)
849457151000087101	SNOMED-CT	Diphtheria + tetanus + acellular pertussis + inactivated poliovirus vaccine (product)
778319281000087105	SNOMED-CT	Diphtheria + tetanus + acellular pertussis + inactivated poliomyelitis + haemophilus influenzae b vaccine (product)
689049471000087000	SNOMED-CT	Diphtheria + tetanus + acellular pertussis +

Code	Code System	Description / Print Name
		inactivated poliomyelitis + recombinant hepatitis B virus + recombinant haemophilus influenzae type B vaccine (product)
DT-IPV	AlbertaVaccineCode	Diphtheria/Tetanus/IPV (pediatric)
EZM	AlbertaVaccineCode	E/Z Measles
396425006	SNOMED-CT	Influenza virus vaccine
333702001	SNOMED-CT	Hepatitis A+B vaccine
333707007	SNOMED-CT	Hepatitis A+typhoid vaccine
14745005	SNOMED-CT	Hepatitis A virus vaccine
418747006	SNOMED-CT	Hepatitis b surface antigen immunoglobulin
333680004	SNOMED-CT	Haemophilus influenzae Type b vaccine (product)
551339611000086000	SNOMED-CT	Hepatitis B thimerosal free (product)
34689006	SNOMED-CT	Hepatitis B virus vaccine
HBVD	AlbertaVaccineCode	Hepatitis B for Dialysis
424519000	SNOMED-CT	Human papillomavirus vaccine
H1N1-09-AD	AlbertaVaccineCode	Adjuvanted Pandemic 2009 Influenza
H1N1-09	AlbertaVaccineCode	Non-Adjuvanted Pandemic 2009 Influenza
420084002	SNOMED-CT	Human immunoglobulin
396435000	SNOMED-CT	Inactivated poliovirus vaccine
396426007	SNOMED-CT	Japanese encephalitis virus vaccine
KMEA	AlbertaVaccineCode	Killed red measles
116083002	SNOMED-CT	Lyme disease vaccine
386012008	SNOMED-CT	Measles vaccine (product)
421281005	SNOMED-CT	Meningococcal A+C vaccine (product)
420261000	SNOMED-CT	Meningococcal groups A+C+W135+Y vaccine (product)
359068008	SNOMED-CT	Meningococcal C conjugate vaccine
400323009	SNOMED-CT	Meningococcal polysaccharide A, C, W135 and Y vaccine injection 0.5ml vial
MENING-C	AlbertaVaccineCode	Meningococcal Conjugate (unspecified)
MENING-P	AlbertaVaccineCode	Meningococcal Polysaccharide (unspecified)
61153008	SNOMED-CT	Measles + Mumps + Rubella vaccine
419550004	SNOMED-CT	Measles + mumps + rubella + varicella vaccine
MR	AlbertaVaccineCode	Measles/Rubella
90043005	SNOMED-CT	Mumps live virus vaccine (product)
111164008	SNOMED-CT	Poliovirus vaccine
P	AlbertaVaccineCode	Whole Cell Pertussis
135642004	SNOMED-CT	Pneumococcal polysaccharide vaccine
423321003	SNOMED-CT	Tuberculin purified protein derivative
125714002	SNOMED-CT	Pneumococcal 7-valent conjugate vaccine (product)
333598008	SNOMED-CT	Pneumococcal vaccine (product)
PNEU-C10	AlbertaVaccineCode	Pneumococcal (10 – conjugate)
448964007	SNOMED-CT	Pneumococcal 13-valent conjugate vaccine

Code	Code System	Description / Print Name
333606008	SNOMED-CT	Rabies vaccine
80834004	SNOMED-CT	Rabies immunoglobulin
398866008	SNOMED-CT	Rotavirus vaccine
108723008	SNOMED-CT	Respiratory syncytial virus immune globulin
386013003	SNOMED-CT	Rubella vaccine (product)
33234009	SNOMED-CT	Smallpox vaccine
71289008	SNOMED-CT	Snake antivenin (product)
398783009	SNOMED-CT	Tick-borne encephalitis vaccine
59999009	SNOMED-CT	Tetanus and diphtheria toxoid adsorbed for adult use
TdP	AlbertaVaccineCode	Tetanus/Diphtheria/IPV (adult)
425682001	SNOMED-CT	Tetanus immunoglobulin
TP	AlbertaVaccineCode	Tetanus Polio
333621002	SNOMED-CT	Tetanus vaccine (product)
89428009	SNOMED-CT	Typhoid vaccine (product)
346696005	SNOMED-CT	Typhoid live oral vaccine
346639000	SNOMED-CT	Typhoid polysaccharide vaccine (product)
407737004	SNOMED-CT	Varicella-zoster vaccine
62294009	SNOMED-CT	Varicella immunoglobulin
56844000	SNOMED-CT	Yellow fever vaccine

AllergenEntityCode

Table 137: AllergenEntityCode Definition

ValueSet OID & Binding	2.16.840.1.113883.3.3068.10.8.9 STATIC
Code System(s)	SNOMED CT, DIN
Description	A list of possible allergens (i.e. materials) against which an allergic reaction or intolerance can be experienced.
Authority	Infoway Standards Collaborative (once submitted and accepted)
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Intentional Definition	May be a ClinicalDrug (Value-set 2.16.840.1.113883.2.20.3.29) or NonDrugAllergenCode (Value-set 2.16.840.1.113883.2.20.3.269). Please refer to the pan-Canadian terminology and associated reference sets for further details.

AllergyIntoleranceStatusCode

Table 138: AllergyIntoleranceStatusCode Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.211 DYNAMIC
Code System(s)	SNOMED-CT 2.16.840.1.113883.6.96
Description	Represents whether an allergy/intolerance is “active” or resolved (indicating no longer active).
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/primary-health-care-phc-reference-sets
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
55561003	SNOMED-CT	Active (qualifier value)
89925002	SNOMED-CT	Cancelled (qualifier value)
410605003	SNOMED-CT	Confirmed present (qualifier value)
785327971000087107	SNOMED-CT	Invalidated (qualifier value)
475855351000087108	SNOMED-CT	Proposed (qualifier value)
625759261000087105	SNOMED-CT	Refuted (qualifier value)
383830771000087105	SNOMED-CT	Resolved (qualifier value)

AllergyTestValue

Table 139: AllergyTestValue Definition

ValueSet OID & Binding	2.16.840.1.113883.1.11.19696 STATIC
Code System(s)	ObservationValue 2.16.840.1.113883.5.1063
Description	Indicates the result of a particular allergy test. E.g. Negative, Mild, Moderate, Severe
Authority	HL7 International
Reference URL	http://www.hl7.org
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
A3	ObservationValue	moderate reaction
A4	ObservationValue	severe reaction
A0	ObservationValue	no reaction
A1	ObservationValue	minimal reaction
A2	ObservationValue	mild reaction

CDAHeaderActClass

Table 140: CDAHeaderActClass Definition

ValueSet OID & Binding	2.16.840.1.113883.3.3068.10.8.8 STATIC
Code System(s)	ActClass 2.16.840.1.113883.5.6
Description	The set of valid ActClass codes for use in CDA headers to designate the Act of an order being fulfilled or of a service event being documented.
Authority	Infoway Standards Collaborative (once submitted and accepted)
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
ACT	ActClass	Act
CONS	ActClass	Consent
DOCBODY	ActClass	Document Body
DOCCLIN	ActClass	Clinical Document
DOCSECT	ActClass	Document Section
ENC	ActClass	Encounter

ClientSocialBehaviourCode

Table 141: ClientSocialBehaviourCode Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.260 DYNAMIC
Code System(s)	SNOMED-CT 2.16.840.1.113883.6.96
Description	Represents a type of Client social behaviour that increases the possibility of disease or injury for the Client. This can include risk factors such as tobacco use, alcohol use, and abuse of illicit or prescription drugs.
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/primary-health-care-phc-reference-sets
Code Table Filter	Example codes shown below (Please consult authoritative source for full value set content).

Code	Code System	Description / Print Name
284609005	SNOMED-CT	able to control agression (finding)
433206003	SNOMED-CT	able to sleep (finding)
417298001	SNOMED-CT	abnormal craving for drugs (finding)
105549004	SNOMED-CT	abuses volatile solvents (finding)
102899003	SNOMED-CT	abusive emotional relationship (finding)
425275009	SNOMED-CT	abusive parenting (finding)
102950001	SNOMED-CT	abusive sexual relationship (finding)
413460004	SNOMED-CT	aerobic exercise five times a week (finding)
413461000	SNOMED-CT	aerobic exercise four times a week (finding)
160637002	SNOMED-CT	aerobic exercise once a week (finding)
...	...	...

ClinicalDrug

Table 142: ClinicalDrug Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.29 DYNAMIC
Code System(s)	See Infoway Master Terminology Worksheet (MTW)
Description	N/A
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Intentional Definition	See Infoway Master Terminology Worksheet (MTW)

DiagnosisValuePrimary

Table 143: DiagnosisValuePrimary Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.40 DYNAMIC
Code System(s)	SNOMED-CT 2.16.840.1.113883.6.96
Description	N/A
Authority	Infoway Standards Collaborative

Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Code Table Filter	Example codes shown below (Please consult authoritative source for full value set content).

Code	Code System	Description / Print Name
274945004	SNOMED-CT	AA amyloidosis (disorder)
112143006	SNOMED-CT	ABO group phenotype (finding)
341009	SNOMED-CT	ABO incompatibility reaction (disorder)
3885002	SNOMED-CT	ABO isoimmunization affecting pregnancy (disorder)
371627004	SNOMED-CT	ACE inhibitor-aggravated angioedema (disorder)
237692001	SNOMED-CT	ACTH deficiency (disorder)
237669001	SNOMED-CT	ACTH hypersecretion (disorder)
237670000	SNOMED-CT	ACTH hypersecretion not causing Cushing's syndrome (disorder)
237734007	SNOMED-CT	ACTH-dependent Cushing's syndrome (disorder)
281882003	SNOMED-CT	AD type amyloidosis (disorder)
...	...	...

DocumentType

Table 144: DocumentType Definition

ValueSet OID & Binding	2.16.840.1.113883.1.11.10870 DYNAMIC
Code System(s)	LOINC 2.16.840.1.113883.6.1
Description	The kind of document. Possible values: laboratory report, discharge summary, progress note, Oncology note, etc.
Authority	HL7 International
Reference URL	http://www.hl7.org

HealthcareProviderRoleType

Table 145: HealthcareProviderRoleType Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.48 DYNAMIC
Code System(s)	SCPTYPE 2.16.840.1.113883.2.20.5.3
Description	N/A
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts

HumanLanguage

Table 146: HumanLanguage Definition

ValueSet OID & Binding	2.16.840.1.113883.1.11.11526 DYNAMIC

Code System(s)	ietf3066 2.16.840.1.113883.6.121
Description	Codes for the representation of the names of human languages.
Authority	HL7 International
Reference URL	http://www.hl7.org
Intentional Definition	All codes from iso3066

IdentifierUse

Table 147: IdentifierUse Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.53 STATIC
Code System(s)	SCTEMP 2.16.840.1.113883.2.20.5.2
Description	Codes to specify the scope in which the identifier applies to the object with which it is associated, and used in the datatype property II.use.
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Code Table Filter	Value set shown below may not be complete (Please consult the authoritative source).

Code	Code System	Description / Print Name
BUS	SCTEMP	Business identifier
VER	SCTEMP	Version identifier

ImagingProcedureObservationType

Table 148: ImagingProcedureObservationType Definition

ValueSet OID & Binding	2.16.840.1.113883.3.3068.10.8.16 DYNAMIC
Code System(s)	SNOMED-CT 2.16.840.1.113883.6.96
Description	N/A
Authority	Infoway Standards Collaborative (once submitted and accepted)
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Intentional Definition	Applicable codes from SNOMED CT

ISO3166-1–CountryCodes

Table 149: ISO3166-1–CountryCodes Definition

ValueSet OID & Binding	1.0.3166.1 DYNAMIC
Code System(s)	iso3166-1 1.0.3166.1
Description	ISO 3166 is the International Standard for country codes and codes for their subdivisions. The purpose of ISO 3166 is to establish internationally recognised codes for the representation of names of countries, territories or areas of geographical interest, and their subdivisions. However, ISO 3166 does not establish the names of countries, only the codes that represent them.

	The country names in ISO 3166 come from United Nations sources. New names and codes are added automatically when the United Nations publishes new names in either the Terminology Bulletin Country Names or in the Country and Region Codes for Statistical Use maintained by the United Nations Statistics Divisions. Names for subdivisions are taken from relevant official national information sources. (Source: http://www.iso.org/iso/country_codes)
Authority	International Standards Organization (ISO)
Reference URL	http://www.iso.org/iso/country_codes/country_codes

ISO3166-2–State/Province

Table 150: ISO3166-2–State/Province Definition

ValueSet OID & Binding	1.0.3166.2 DYNAMIC
Code System(s)	iso3166-2 1.0.3166.2
Description	ISO 3166-2:2007 establishes codes for the names of the principal subdivisions (e.g provinces or states) of all countries coded in ISO 3166-1. This code is based on the two-letter code element from ISO 3166-1 followed by a separator and up to three alphanumeric characters. The characters after the separator cannot be used on their own to denote a subdivision, they must be preceded by the alpha-2 country code. For example – ID-RI is the Riau province of Indonesia and NG-RI is the Rivers province in Nigeria. The codes denoting the subdivision are usually obtained from national sources and stem from coding systems already in place in the country. (Source: http://www.iso.org/iso/country_codes)
Authority	International Standards Organization (ISO)
Reference URL	http://www.iso.org/iso/country_codes/country_codes

LaboratorySpecialtyCodes

Table 151: LaboratorySpecialtyCodes Definition

ValueSet OID & Binding	2.16.840.1.113883.3.3068.10.8.36 STATIC
Code System(s)	LOINC 2.16.840.1.113883.6.1
Description	The list of LOINC codes to identify the Laboratory Specialty.
Authority	Alberta Health
Reference URL	http://www.health.alberta.ca/
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
18717-9	LOINC	Blood Bank Studies
18718-7	LOINC	Cell Marker Studies
18719-5	LOINC	Chemistry Studies
18720-3	LOINC	Coagulation Studies
18723-7	LOINC	Hematology Studies
18724-5	LOINC	HLA Studies
18725-2	LOINC	Microbiology Studies (Note: includes mycology and parasitology, as well as

Code	Code System	Description / Print Name
		bacteriology. May also include virology.)
18727-8	LOINC	Serology Studies (Note: May also include virology.)
18728-6	LOINC	Toxicology Studies
18729-4	LOINC	Urinalysis Studies
18767-4	LOINC	Blood Gas Studies
10389-5	LOINC	Blood Products
30954-2	LOINC	General Lab
68630-3	LOINC	Allergy and Immunology Procedure
26438-2	LOINC	Cytology Studies
11526-1	LOINC	Anatomical Pathology

LanguageCode

Table 152: LanguageCode Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.51 DYNAMIC
Code System(s)	iso639-1 1.0.639.1
Description	Represents the preferred spoken language of the Client.
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/primary-health-care-phc-reference-sets
Code Table Filter	Example codes shown below (Please consult authoritative source for full value set content).

Code	Code System	Description / Print Name
arq	iso639-3	Algerian Arabic
aao	iso639-3	Algerian Saharan Arabic
asp	iso639-3	Algerian Sign Language
alq	iso639-3	Algonquin
aiy	iso639-3	Ali
ald	iso639-3	Alladian
all	iso639-3	Allar
ypo	iso639-3	Alo Phola
zaq	iso639-3	Aloápam Zapotec
aol	iso639-3	Alor
...	...	...

MediaType

Table 153: MediaType Definition

ValueSet OID & Binding	2.16.840.1.113883.1.11.14824 STATIC
Code System(s)	mediaType 2.16.840.1.113883.5.79
Description	Internet Assigned Numbers Authority (IANA) Mime Media Types
Authority	HL7 International

Reference URL	http://www.hl7.org
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
application	mediaType	ApplicationMediaType
application/dicom	mediaType	DICOM
application/msword	mediaType	MSWORD
application/pdf	mediaType	PDF
audio	mediaType	AudioMediaType
text	mediaType	TextMediaType
text/html	mediaType	HTML Text
text/plain	mediaType	Plain Text
text/rtf	mediaType	RTF Text
text/sgml	mediaType	SGML Text
text/x-hl7-ft	mediaType	HL7 Text
text/x-hl7-text+xml	mediaType	HL7 Structured Narrative
text/xml	mediaType	XML Text
video	mediaType	VideoMediaType
video/mpeg	mediaType	MPEG Video
video/x-avi	mediaType	X-AVI Video
audio/basic	mediaType	Basic Audio
audio/k32adpcm	mediaType	K32ADPCM Audio
audio/mpeg	mediaType	MPEG audio layer 3
image	mediaType	ImageMediaType
image/g3fax	mediaType	G3Fax Image
image/gif	mediaType	GIF Image
image/jpeg	mediaType	JPEG Image
image/png	mediaType	PNG Image
image/tiff	mediaType	TIFF Image
model	mediaType	ModelMediaType
model/vrml	mediaType	VRML Model
multipart	mediaType	MultipartMediaType
multipart/x-hl7-cda-level-one	mediaType	CDA Level 1 Multipart

ObservationInterpretation

Table 154: ObservationInterpretation Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.78 STATIC
Code System(s)	ObservationInterpretation 2.16.840.1.113883.5.83
Description	N/A
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Code Table Filter	Example codes shown below (Please consult authoritative source for full value set content).

Code	Code System	Description / Print Name

Code	Code System	Description / Print Name
B	ObservationInterpretation	better
D	ObservationInterpretation	decreased
U	ObservationInterpretation	increased
W	ObservationInterpretation	worse
<	ObservationInterpretation	low off scale
>	ObservationInterpretation	high off scale
A	ObservationInterpretation	Abnormal
AA	ObservationInterpretation	Abnormal alert
HH	ObservationInterpretation	High alert
LL	ObservationInterpretation	Low alert
...	...	...

ObservationInterpretationNormality

Table 155: ObservationInterpretationNormality Definition

ValueSet OID & Binding	2.16.840.1.113883.1.11.10206 STATIC
Code System(s)	ObservationInterpretation 2.16.840.1.113883.5.83
Description	Normality, Abnormality, Alert. Concepts in this category are mutually exclusive, i.e., at most one is allowed.
Authority	HL7 International
Reference URL	http://www.hl7.org
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
N	ObservationInterpretation	Normal
HH	ObservationInterpretation	High alert
LL	ObservationInterpretation	Low alert
HH	ObservationInterpretation	High alert
LL	ObservationInterpretation	Low alert

ObservationOrderableLabType

Table 156: ObservationOrderableLabType Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.164 DYNAMIC
Code System(s)	LOINC 2.16.840.1.113883.6.1
Description	Represents the lab test ordered by the Provider for the Client.
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/primary-health-care-phc-reference-sets
Code Table Filter	Example codes shown below (Please consult authoritative source for full value set content).

Code	Code System	Description / Print Name
54099-7	LOINC	1, 2, 2-Trimethylpropyl methylphosphonate [Mass/volume] in Urine

Code	Code System	Description / Print Name
38334-9	LOINC	1,1,2-Trichloroethane [Mass/volume] in Water
38292-9	LOINC	1,1-Dichloroethylene [Mass/volume] in Water
38332-3	LOINC	1,2,4-Trichlorobenzene [Mass/volume] in Water
38288-7	LOINC	1,2-Dibromo-3-Chloropropane [Mass/volume] in Water
38289-5	LOINC	1,2-Dichlorobenzene [Mass/volume] in Water
54935-2	LOINC	1,2-Dichloroethane [Mass/volume] in Serum or Plasma
38291-1	LOINC	1,2-Dichloroethane [Mass/volume] in Water
38296-0	LOINC	1,2-Dichloropropane [Mass/volume] in Water
1650-1	LOINC	1,4-Alpha glucan branching enzyme [Enzymatic activity/volume] in Leukocytes
...	...	...

ObservationResultableLabType

Table 157: ObservationResultableLabType Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.105 DYNAMIC
Code System(s)	LOINC 2.16.840.1.113883.6.1
Description	Represents the name of the lab test performed.
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/primary-health-care-phc-reference-sets
Code Table Filter	Example codes shown below (Please consult authoritative source for full value set content).

Code	Code System	Description / Print Name
14725-6	LOINC	[Type] of Body fluid
54099-7	LOINC	1, 2, 2-Trimethylpropyl methylphosphonate [Mass/volume] in Urine
38334-9	LOINC	1,1,2-Trichloroethane [Mass/volume] in Water
38292-9	LOINC	1,1-Dichloroethylene [Mass/volume] in Water
28050-3	LOINC	1,2,3-Trichlorobenzene [Mass/volume] in Serum or Plasma
28049-5	LOINC	1,2,4-Trichlorobenzene [Mass/volume] in Serum or Plasma
38332-3	LOINC	1,2,4-Trichlorobenzene [Mass/volume] in Water
38288-7	LOINC	1,2-Dibromo-3-Chloropropane [Mass/volume] in Water
18434-1	LOINC	1,2-Dichlorobenzene [Mass/volume] in Blood
38289-5	LOINC	1,2-Dichlorobenzene [Mass/volume] in Water
...	...	...

ObservationValue

Table 158: ObservationValue Definition

ValueSet OID & Binding	2.16.840.1.113883.3.3068.10.8.21 DYNAMIC
Code System(s)	ObservationValue 2.16.840.1.113883.5.1063
Description	N/A
Authority	Infoway Standards Collaborative (once submitted and accepted)
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts

ParticipationSignature

Table 159: ParticipationSignature Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.88 STATIC
Code System(s)	ParticipationSignature 2.16.840.1.113883.5.89
Description	N/A
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Code Table Filter	Value set shown below may not be complete (Please consult the authoritative source).

Code	Code System	Description / Print Name
S	ParticipationSignature	signed

ParticipationType

Table 160: ParticipationType Definition

ValueSet OID & Binding	2.16.840.1.113883.1.11.10901 STATIC
Code System(s)	ParticipationType 2.16.840.1.113883.5.90
Description	A code specifying the meaning and purpose of every Participation instance. Each of its values implies specific constraints on the Roles undertaking the participation.
Authority	HL7 International
Reference URL	http://www.hl7.org

pCLOCD

Table 161: pCLOCD Definition

ValueSet OID & Binding	2.16.840.1.113883.3.3068.10.8.1 DYNAMIC
Code System(s)	pclocd 2.16.840.1.113883.2.20.5.1
Description	The pan-Canadian Laboratory Observations Code Database (pCLOCD) reflects the Canadian LOINC subset. It includes Canadian additions that may not yet have been submitted to or accepted by Regenstrief for inclusion in the full LOINC release. Note that the pCLOCD also includes Canadian display names in French and English.
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-

	canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts

PINDosageFormCode

Table 162: PINDosageFormCode Definition

ValueSet OID & Binding	2.16.840.1.113883.3.163.99.4.8.5 STATIC
Code System(s)	CommonDosageFormPIN-2009 2.16.840.1.113883.3.163.2.100.3
Description	N/A
Authority	Alberta Health
Reference URL	http://www.health.alberta.ca/
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
AER	CommonDosageFormPIN-2009	Aerosol
AER-MD	CommonDosageFormPIN-2009	Aerosol (Metered-Dose)
AER-WOP	CommonDosageFormPIN-2009	Aerosol (without propellants)
AER-WP	CommonDosageFormPIN-2009	Aerosol (with propellants)
AMP	CommonDosageFormPIN-2009	Ampoule
BAR	CommonDosageFormPIN-2009	Bar
CAK	CommonDosageFormPIN-2009	Cake
CAP	CommonDosageFormPIN-2009	Capsule
CAP-CD	CommonDosageFormPIN-2009	Capsule (Controlled-Delivery)
CAP-EC	CommonDosageFormPIN-2009	Capsule (Enteric-Coated)
CPL	CommonDosageFormPIN-2009	Caplet
CPL-SR	CommonDosageFormPIN-2009	Caplet (Sustained-Release)
CRM	CommonDosageFormPIN-2009	Cream
DEV	CommonDosageFormPIN-2009	Device
DIAPH	CommonDosageFormPIN-2009	Diaphram
DISC	CommonDosageFormPIN-2009	Disc
DISC-SR	CommonDosageFormPIN-2009	Disc (Sustained Release)
DISKH	CommonDosageFormPIN-2009	Diskhaler
DOUC	CommonDosageFormPIN-2009	Douche
DRESS	CommonDosageFormPIN-2009	Dressing
ELX	CommonDosageFormPIN-2009	Elixir
EMU	CommonDosageFormPIN-2009	Emulsion
ENM	CommonDosageFormPIN-2009	Enema
GAS	CommonDosageFormPIN-2009	Gas
GEL	CommonDosageFormPIN-2009	Gel
GRG	CommonDosageFormPIN-2009	Gargle
GRU	CommonDosageFormPIN-2009	Granule
GTT	CommonDosageFormPIN-2009	Drops
GUM	CommonDosageFormPIN-2009	Gum
IMP	CommonDosageFormPIN-2009	Implant
INS	CommonDosageFormPIN-2009	Insert
IRR	CommonDosageFormPIN-2009	Irrigation
JEL	CommonDosageFormPIN-2009	Jelly

Code	Code System	Description / Print Name
KIT	CommonDosageFormPIN-2009	Kit
LOT	CommonDosageFormPIN-2009	Lotion
LOZ	CommonDosageFormPIN-2009	Lozenges
LQD	CommonDosageFormPIN-2009	Liquid
MISC	CommonDosageFormPIN-2009	Miscellaneous
OVU	CommonDosageFormPIN-2009	Ovules
PAD	CommonDosageFormPIN-2009	Pad
PAT	CommonDosageFormPIN-2009	Patch
PDR	CommonDosageFormPIN-2009	Powder
PEL	CommonDosageFormPIN-2009	Pellet
PEL-DN	CommonDosageFormPIN-2009	Pellet (Dental)
PLST	CommonDosageFormPIN-2009	Plaster
PST	CommonDosageFormPIN-2009	Paste
SHM	CommonDosageFormPIN-2009	Shampoo
SOL	CommonDosageFormPIN-2009	Solution
SOL-LA	CommonDosageFormPIN-2009	Solution (Long-Action)
SOL-NB	CommonDosageFormPIN-2009	Solution (Nebulizer)
SOL-SI	CommonDosageFormPIN-2009	Solution (Sterile)
SPG	CommonDosageFormPIN-2009	Sponge
SPR	CommonDosageFormPIN-2009	Spray
SPR-FM	CommonDosageFormPIN-2009	Spray (Foam)
SPR-SU	CommonDosageFormPIN-2009	Spray (sublingual)
SPR-TP	CommonDosageFormPIN-2009	Spray (Topical)
STK	CommonDosageFormPIN-2009	Stick
SUPP	CommonDosageFormPIN-2009	Suppository
SUPP-SR	CommonDosageFormPIN-2009	Suppository (Sustained-Release)
SUSP	CommonDosageFormPIN-2009	Suspension
SUSP-LN	CommonDosageFormPIN-2009	Suspension (Lente)
SUSP-SR	CommonDosageFormPIN-2009	Suspension (Sustained-Release)
SUSP-UL	CommonDosageFormPIN-2009	Suspension (Ultra-Lente)
SYR	CommonDosageFormPIN-2009	Syrup
SYR-SR	CommonDosageFormPIN-2009	Syrup (Sustained-Release)
TAB	CommonDosageFormPIN-2009	Tablet
TAB-DA	CommonDosageFormPIN-2009	Tablet (Delayed-Action)
TAB-DL	CommonDosageFormPIN-2009	Tablet (Delayed-Release)
TAB-EC	CommonDosageFormPIN-2009	Tablet (Enteric-Coated)
TAB-EF	CommonDosageFormPIN-2009	Tablet (Effervescent)
TAB-SL	CommonDosageFormPIN-2009	Tablet (Slow-Release)
TAB-SR	CommonDosageFormPIN-2009	Tablet (Sustained-Release)
TAB-SU	CommonDosageFormPIN-2009	Tablet (Sublingual)
TMP	CommonDosageFormPIN-2009	Tampon
TNC	CommonDosageFormPIN-2009	Tincture
UNG	CommonDosageFormPIN-2009	Ointment
WAF	CommonDosageFormPIN-2009	Wafer

PINRouteOfAdministrationCode

Table 163: PINRouteOfAdministrationCode Definition

ValueSet OID & Binding	2.16.840.1.113883.3.163.99.4.8.3 STATIC
Code System(s)	RouteOfAdministrationPIN-0101 2.16.840.1.113883.3.163.2.100.4
Description	N/A
Authority	Alberta Health
Reference URL	http://www.health.alberta.ca/
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
AP	RouteOfAdministrationPIN-0101	Apply externally
B	RouteOfAdministrationPIN-0101	Buccal
DT	RouteOfAdministrationPIN-0101	Dental
EP	RouteOfAdministrationPIN-0101	Epidural
ET	RouteOfAdministrationPIN-0101	Endotrachial Tube
GTT	RouteOfAdministrationPIN-0101	Gastronomy Tube
GU	RouteOfAdministrationPIN-0101	GU Irrigant
IA	RouteOfAdministrationPIN-0101	Intra-arterial
IAC	RouteOfAdministrationPIN-0101	Intra-articular
IB	RouteOfAdministrationPIN-0101	Intrabursal
IC	RouteOfAdministrationPIN-0101	Intracardiac
ICA	RouteOfAdministrationPIN-0101	Intra-cavernosal
ICV	RouteOfAdministrationPIN-0101	Intracervical (uterus)
ID	RouteOfAdministrationPIN-0101	Intradermal
IH	RouteOfAdministrationPIN-0101	Inhalation
IHA	RouteOfAdministrationPIN-0101	Intrahepatic Artery
IJ	RouteOfAdministrationPIN-0101	Injection (Unspecified Parenteral Routes)
IM	RouteOfAdministrationPIN-0101	Intramuscular
IMR	RouteOfAdministrationPIN-0101	Immerse (Soak) Body Part
IN	RouteOfAdministrationPIN-0101	Intranasal
IO	RouteOfAdministrationPIN-0101	Intraocular
IP	RouteOfAdministrationPIN-0101	Intraperitoneal
IQ	RouteOfAdministrationPIN-0101	Intravesical
IR	RouteOfAdministrationPIN-0101	Irrigation (Bladder, Wounds, etc)
IS	RouteOfAdministrationPIN-0101	Intrasynovial
IT	RouteOfAdministrationPIN-0101	Intrathecal
IU	RouteOfAdministrationPIN-0101	Intrauterine
IV	RouteOfAdministrationPIN-0101	Intravenous
AP	RouteOfAdministrationPIN-0101	Apply externally
B	RouteOfAdministrationPIN-0101	Buccal
DT	RouteOfAdministrationPIN-0101	Dental
EP	RouteOfAdministrationPIN-0101	Epidural
ET	RouteOfAdministrationPIN-0101	Endotrachial Tube
GTT	RouteOfAdministrationPIN-0101	Gastronomy Tube
GU	RouteOfAdministrationPIN-0101	GU Irrigant

Code	Code System	Description / Print Name
IA	RouteOfAdministrationPIN-0101	Intra-arterial
IAC	RouteOfAdministrationPIN-0101	Intra-articular
IB	RouteOfAdministrationPIN-0101	Intrabursal
IC	RouteOfAdministrationPIN-0101	Intracardiac
ICA	RouteOfAdministrationPIN-0101	Intra-cavernosal
ICV	RouteOfAdministrationPIN-0101	Intracervical (uterus)
ID	RouteOfAdministrationPIN-0101	Intradermal
IH	RouteOfAdministrationPIN-0101	Inhalation
IHA	RouteOfAdministrationPIN-0101	Intrahepatic Artery
IJ	RouteOfAdministrationPIN-0101	Injection (Unspecified Parenteral Routes)
IM	RouteOfAdministrationPIN-0101	Intramuscular
IMR	RouteOfAdministrationPIN-0101	Immerse (Soak) Body Part
IN	RouteOfAdministrationPIN-0101	Intranasal
IO	RouteOfAdministrationPIN-0101	Intraocular
IP	RouteOfAdministrationPIN-0101	Intraperitoneal
IQ	RouteOfAdministrationPIN-0101	Intravesical
IR	RouteOfAdministrationPIN-0101	Irrigation (Bladder, Wounds, etc)
IS	RouteOfAdministrationPIN-0101	Intrasynovial
IT	RouteOfAdministrationPIN-0101	Intrathecal
IU	RouteOfAdministrationPIN-0101	Intrauterine
IV	RouteOfAdministrationPIN-0101	Intravenous

Procedure

Table 164: Procedure Definition

ValueSet OID & Binding	2.16.840.1.113883.3.3068.10.8.11 DYNAMIC
Code System(s)	SNOMED-CT 2.16.840.1.113883.6.96
Description	The list of procedure codes applicable in Primary Care
Authority	Infoway Standards Collaborative (once submitted and accepted)
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Intentional Definition	Applicable codes from SNOMED CT. Implementers may wish to consider the following Infoway/CIHI Primary Care Refsets: InterventionCode (2.16.840.1.113883.2.20.3.270); InterventionCodeSubsetAssessmentTool (2.16.840.1.113883.2.20.3.272); or InterventionCodeSubsetCare (2.16.840.1.113883.2.20.3.271).

ReactionTypeCode

Table 165: ReactionTypeCode Definition

ValueSet OID & Binding	2.16.840.1.113883.3.3068.10.8.18 DYNAMIC
Code System(s)	ActCode 2.16.840.1.113883.5.4
Description	A set of values to classify a reaction (e.g. Allergy, Drug Allergy, Food Intolerance, etc.).
Authority	Infoway Standards Collaborative (once submitted and accepted)
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
ALG	ActCode	Allergy (Unspecified)
DALG	ActCode	Drug Allergy
DINT	ActCode	Drug Intolerance
DNAINT	ActCode	Drug Non-Allergy Intolerance
EALG	ActCode	Environmental Allergy
EINT	ActCode	Environmental Intolerance
ENAINT	ActCode	Environmental Non-Allergy Intolerance
FALG	ActCode	Food Allergy
FINT	ActCode	Food Intolerance
FNAINT	ActCode	Food Non-Allergy Intolerance
NAINT	ActCode	Non-Allergy Intolerance (Unspecified)
OINT	ActCode	Intolerance (Unspecified)

ReasonObservationValue

Table 166: ReasonObservationValue Definition

ValueSet OID & Binding	2.16.840.1.113883.3.3068.10.8.22 DYNAMIC
Code System(s)	SNOMED-CT 2.16.840.1.113883.6.96
Description	The list of possible reasons for an event. These could be administrative causes (e.g. patient needs a form completed; patient needs a check-up; etc.) or specific clinical reasons, including symptoms, disorders, or other indications.
Authority	Infoway Standards Collaborative (once submitted and accepted)
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts

sctProducedure

Table 167: sctProducedure Definition

ValueSet OID & Binding	2.16.840.1.113883.3.3068.10.8.3 DYNAMIC
Code System(s)	SNOMED-CT 2.16.840.1.113883.6.96
Description	N/A
Authority	International Health Terminology Standards Development Organization (IHTSDO)
Reference URL	http://www.ihtsdo.org
Intentional Definition	All children of concept 71388002 [Procedure (procedure)].

x_ActRelationshipDocument

Table 168: x_ActRelationshipDocument Definition

ValueSet OID & Binding	2.16.840.1.113883.1.11.11610 STATIC
Code System(s)	ActRelationshipType 2.16.840.1.113883.5.1002
Description	Used to enumerate the relationships between two clinical documents for document management.

Authority	HL7 International
Reference URL	http://www.hl7.org

x_ActStatusActiveComplete

Table 169: x_ActStatusActiveComplete Definition

ValueSet OID & Binding	2.16.840.1.113883.1.11.19890 STATIC
Code System(s)	ActStatus 2.16.840.1.113883.5.14
Description	N/A
Authority	HL7 International
Reference URL	http://www.hl7.org
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
active	ActStatus	active
completed	ActStatus	completed

x_BasicAddressPartType

Table 170: x_BasicAddressPartType Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.138 STATIC
Code System(s)	AddressPartType 2.16.840.1.113883.5.16
Description	Separates semantically relevant pieces of an address.
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Code Table Filter	Value set shown below may not be complete (Please consult the authoritative source).

Code	Code System	Description / Print Name
CNT	AddressPartType	country
CTY	AddressPartType	municipality
STA	AddressPartType	state or province
ZIP	AddressPartType	postal code

x_BasicConfidentialityKind

Table 171: x_BasicConfidentialityKind Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.139 STATIC
Code System(s)	Confidentiality 2.16.840.1.113883.5.25
Description	N/A
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Code Table Filter	Value set shown below may not be complete (Please consult the authoritative source).

Code	Code System	Description / Print Name

Code	Code System	Description / Print Name
N	Confidentiality	normal
R	Confidentiality	restricted
V	Confidentiality	very restricted
T	Confidentiality	taboo

x_BasicPersonNamePartQualifier

Table 172: x_BasicPersonNamePartQualifier Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.140 STATIC
Code System(s)	EntityNamePartQualifier 2.16.840.1.113883.5.43
Description	Indicates any special characteristics of a name component.
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Code Table Filter	Value set shown below may not be complete (Please consult the authoritative source).

Code	Code System	Description / Print Name
IN	EntityNamePartQualifier	initial

x_BasicPersonNamePartType

Table 173: x_BasicPersonNamePartType Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.141 STATIC
Code System(s)	EntityNamePartType 2.16.840.1.113883.5.44
Description	Separates semantically relevant pieces of a name.
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Code Table Filter	Value set shown below may not be complete (Please consult the authoritative source).

Code	Code System	Description / Print Name
FAM	EntityNamePartType	family
GIV	EntityNamePartType	given
PFX	EntityNamePartType	prefix
SFX	EntityNamePartType	suffix

x_BasicPersonNameUse

Table 174: x_BasicPersonNameUse Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.142 STATIC
Code System(s)	EntityNameUse 2.16.840.1.113883.5.45
Description	Indicates how a name is intended to be used.
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts

Code Table Filter	Value set shown below may not be complete (Please consult the authoritative source).

Code	Code System	Description / Print Name
L	EntityNameUse	legal
P	EntityNameUse	pseudonym or alias
C	EntityNameUse	License or professional name
OR	EntityNameUse	Official registry
ASGN	EntityNameUse	assigned

x_BasicPostalAddressUse

Table 175: x_BasicPostalAddressUse Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.143 STATIC
Code System(s)	AddressUse 2.16.840.1.113883.5.1119
Description	Indicates how a postal address is intended to be used.
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Code Table Filter	Value set shown below may not be complete (Please consult the authoritative source).

Code	Code System	Description / Print Name
H	AddressUse	home address
PHYS	AddressUse	physical visit address
PST	AddressUse	postal address
TMP	AddressUse	temporary address
WP	AddressUse	workplace address
DIR	AddressUse	direct
CONF	AddressUse	confidential address

x_BasicTelecommunicationsAddressUse

Table 176: x_BasicTelecommunicationsAddressUse Definition

ValueSet OID & Binding	2.16.840.1.113883.2.20.3.144 STATIC
Code System(s)	AddressUse 2.16.840.1.113883.5.1119
Description	Indicates how a phone number or e-mail address is intended to be used.
Authority	Infoway Standards Collaborative
Reference URL	https://www.infoway-inforoute.ca/index.php/programs-services/standards-collaborative/pan-canadian-standards/pan-canadian-master-terminology-worksheet-and-messaging-artifacts
Code Table Filter	Value set shown below may not be complete (Please consult the authoritative source).

Code	Code System	Description / Print Name
DIR	AddressUse	direct
EC	AddressUse	emergency contact
H	AddressUse	home address
MC	AddressUse	mobile contact
PG	AddressUse	pager

Code	Code System	Description / Print Name
TMP	AddressUse	temporary
WP	AddressUse	workplace
CONF	AddressUse	confidential address

x_PhoneOrEmailURLScheme

Table 177: x_PhoneOrEmailURLScheme Definition

ValueSet OID & Binding	2.16.840.1.113883.1.11.19741 STATIC
Code System(s)	URLScheme 2.16.840.1.113883.5.143
Description	Restricts scheme to e-mail or phone numbers at which a human can be reached
Authority	HL7 International
Reference URL	http://www.hl7.org
Code Table Filter	Full value set shown below.

Code	Code System	Description / Print Name
mailto	URLScheme	Mailto
tel	URLScheme	Telephone

10.7 CODE SYSTEMS

The following table summarizes the Code Systems referenced by explicit fixed value assignments in this specification:

Table 178: Code Systems

Code System Common Name	OID	Ref. URL
ActClass	2.16.840.1.113883.5.6	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
ActCode	2.16.840.1.113883.5.4	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
ActMood	2.16.840.1.113883.5.1001	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
ActRelationshipType	2.16.840.1.113883.5.1002	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
ActStatus	2.16.840.1.113883.5.14	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
AddressPartType	2.16.840.1.113883.5.16	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
AddressUse	2.16.840.1.113883.5.1119	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
AdministrativeGender	2.16.840.1.113883.5.1	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
AlbertaPathwayQuestion	2.16.840.1.113883.3.163.99.4.6.2	http://www.health.alberta.ca/#http://www.health.alberta.ca/#
CommonDosageFormPIN-2009	2.16.840.1.113883.3.163.2.100.3	#http://www.health.alberta.ca/#
Confidentiality	2.16.840.1.113883.5.25	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm

Code System Common Name	OID	Ref. URL
ContextControl	2.16.840.1.113883.5.1057	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
EntityClass	2.16.840.1.113883.5.41	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
EntityDeterminer	2.16.840.1.113883.5.30	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
EntityNamePartQualifier	2.16.840.1.113883.5.43	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
EntityNamePartType	2.16.840.1.113883.5.44	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
EntityNameUse	2.16.840.1.113883.5.45	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
hl7Realm	2.16.840.1.113883.5.1124	N/A
ietf3066	2.16.840.1.113883.6.121	N/A
iso3166-1	1.0.3166.1	http://www.iso.org/iso/country_codes/iso_3166_code_lists.htm
iso3166-2	1.0.3166.2	http://www.iso.org/iso/country_codes/iso_3166_code_lists.htm
iso639-1	1.0.639.1	N/A
iso639-3	1.0.639.3	http://www.w3.org/WAI/ER/IG/ert/iso639.htm
LOINC	2.16.840.1.113883.6.1	http://loinc.org
mediaType	2.16.840.1.113883.5.79	http://www.iana.org/assignments/media-types
ObservationInterpretation	2.16.840.1.113883.5.83	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
ObservationType-CA-Pending	2.16.840.1.113883.3.3068.10.6.3	#http://www.gpinformatics.com#
ObservationValue	2.16.840.1.113883.5.1063	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
ParticipationSignature	2.16.840.1.113883.5.89	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
ParticipationType	2.16.840.1.113883.5.90	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
pclocd	2.16.840.1.113883.2.20.5.1	http://forums.infoway-inforoute.ca/PCS
RoleClass	2.16.840.1.113883.5.110	http://www.hl7.org/v3ballot/html/infrastructure/vocabulary/vocabulary.htm
RouteOfAdministrationPIN-0101	2.16.840.1.113883.3.163.2.100.4	#http://www.health.alberta.ca/#
SCPTYPE	2.16.840.1.113883.2.20.5.3	http://forums.infoway-inforoute.ca/PCS
SCTEMP	2.16.840.1.113883.2.20.5.2	http://forums.infoway-inforoute.ca/PCS
SectionType-CA-Pending	2.16.840.1.113883.3.3068.10.6.2	#http://www.gpinformatics.com
SNOMED-CT	2.16.840.1.113883.6.96	http://www.ihtsdo.org/snomed-ct/
URLScheme	2.16.840.1.113883.5.143	http://www.iana.org/protocols

11.0 IDENTIFIERS

11.1 BACKGROUND

A key challenge in distributed information processing is the globally unique identification of records or objects. HL7 version 3 (and hence CDA) addresses this through the use of Universal Object Identifiers (OIDs). These OIDs are used in three areas:

- As the root for all identifiers (using the II datatype);
- As the means of identifying code systems when using one of the code datatypes; and
- As the means of identifying value sets for use in constraint statements.

OIDs are a hierarchical identification scheme designed to ensure that identifiers are globally unique. "Structurally, an OID consists of a node in a hierarchically-assigned namespace, formally defined using the ITU-T's ASN.1 standard."[10]

Each OID consist of a series of integers separated by decimal points. These can be interpreted from left to right to progressively identify an 'assigning authority' and a hierarchy of objects. If the rules defined by the International Standards Organization (ISO) are appropriately followed, there is no chance that the same OID will be issued to more than one object. Conversely, if an OID is known, then the object to which the OID corresponds is also known, although this may require a lookup of the OID in a repository.

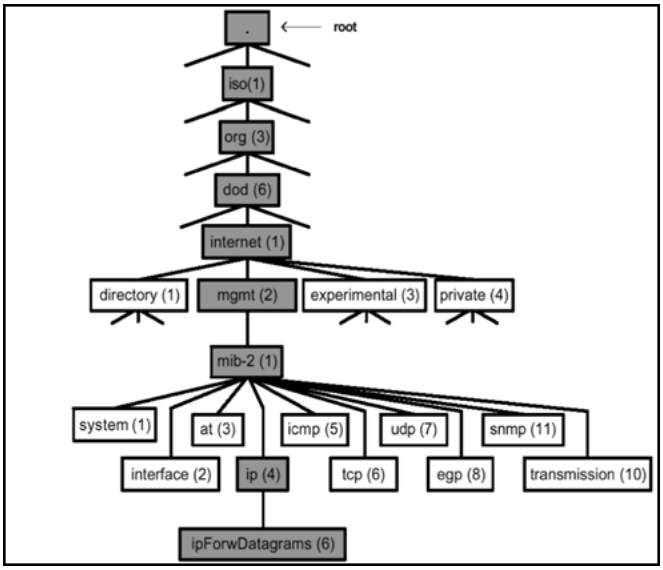


Figure 87: ISO OID Hierarchy

Any person or organization can be issued an OID by an OID registrar. Once issued, that OID is permanently and irrevocably assigned to identify that person or organization. The person or organization can then issue additional OIDs below their particular node by appending further levels. For example, as per the diagram in Figure 87, the Internet has the OID "1.3.6.1". It in turn is the assigning authority for the node "mgmt" which has the OID "1.3.6.1.2". Similarly HL7's OID is 2.16.840.1.113883. Using HL7's OID registry, http://www.hl7.org/oid/index.cfm, the following OID has been established for Alberta Health:

[10] WikiPedia Object Identifier entry, accessed May 1, 2012.

2.16.840.1.113883.3.163. This OID will be the assigning authority root for OIDs established within these specifications.

11.2 USE OF OIDS

11.2.1 Vocabulary

11.2.1.1 Code Systems

OIDs for all code systems are assigned or registered when HL7 registers a particular code system. Once registered, the assigned or registered OID is the only OID allowed to be used for that code system. Implementers **SHALL** only use code systems, including local code systems, which have been registered with HL7 and been assigned an OID or which have a designated OID.

11.2.1.2 Value Sets

Value set OIDs are defined primarily to allow implementation guides such as this to provide definitive guidance as to the set of allowable values.

11.2.2 Instance Identifiers

In HL7 v3, all instance identifiers are required to be globally unique. Globally unique means that the identifier points to only one thing no matter which system uses the identifier. Any system which constructs identifiers which are not globally unique cannot claim HL7 v3 (nor HL7 CDA) conformance.

The II Datatypes consists of two principal components: A mandatory OID root and an optional extension. The combination of the root and the extension form the universally unique identifier. In other words, the combination of the root and the extension must refer to only one thing worldwide.

The reason for the extension component of II is that many “real-world” identifiers do not reflect the conventions of the OID (string of digits separated by periods) format. Real world identifiers such as health numbers, provider ids, lab order ids and others tend to contain alphabetic characters, punctuation or other structures that cannot be conveyed as an OID. In this case, the “root” element will contain an OID which defines the “namespace” for the “real-world” identifier being conveyed in the extension. A unique OID applies to each unique namespace. If the namespace changes (e.g. changing from an 8-digit sequence to a 9-digit sequence), a new OID would apply. For example, the root might represent the concept “Canadian Social Insurance Number beginning January, 1932”.

Note that the root refers to the “unique number-space” of the identifier, not to the assigning organization. For example, although the Alberta College of Nursing may be responsible for licensing both Licensed Practical Nurses (LPNs) and Registered Nurses (RNs), this would demand the creation of two OIDs (one for each type of nurse identifier) or one OID (for all nurses) depending on whether the license numbers issued were drawn from two separate pools or one pool.

The “unique number-space” does not necessarily correspond to a single application. Multiple applications might draw on a common database which tracks issued identifiers and thus use a single OID. On the

other hand, a single application might issue multiple identifiers. Some order entry systems will use the same number-space for all orders, whether lab, pharmacy or imaging and would thus use the same OID for all. Others would use a separate OID, and might even use different number-spaces and OIDs for orders issued from each ward.

The hierarchy in which an OID is situated conveys no semantics about the meaning of an identifier. Identifiers registered under the Canadian OID node can refer to items that exist in other countries and vice versa. Registering an OID for an item does not imply control over that item, merely knowledge of the item's unique existence. If the organization responsible for issuing an identifier splits or merges or is renamed, the OID remains the same so long as the number pool from which the extensions are issued remains the same. For example, if the Alberta College of Nursing were to spin off a separate organization for LPNs, the same OID would continue to be used for LPN identifiers unless the new organization started issuing different identifiers.

Nothing prevents numerous OIDs from being issued for the same identifier. To minimize the mapping issues resulting from two organizations using different OIDs for the same type of identifier, HL7 allows organizations to 'register' OIDs of common identifiers with HL7. Common identifiers are those identifiers where it is reasonable to expect an identifier to be captured by multiple systems without those systems having an explicit business relationship with the issuer of the identifier. For example, many systems will need to capture the concept of an "Alberta Unique Lifetime Identifier (ULI)" or a "BC Personal Health Number (PHN)" without necessarily having a direct relationship with either the Alberta Department of Health or the BC Ministry of health. These types of identifiers have therefore been registered. HL7 will only allow one OID to be registered for a given concept. The OID that is first registered for a particular concept is the OID that **SHALL** be used when communicating that concept in HL7 version 3 message or document instances. Systems which use other OIDs cannot claim conformance with either HL7 v3 nor with this specification.

When the OID for an identifier is registered, the format for capturing the identifier is also specified. For example, whether the extension should be in upper case or lower case, whether there should be any punctuation or spacing, and whether there should be leading digits. The general rule is upper case with only that punctuation and spacing needed to prevent duplication. (e.g. if 123-456 and 12-3456 constitute different identifiers, then the dash needs to be sent as part of the identifier.)

While the mechanism described ensures that v3 applications will reference the same identifier object in a consistent manner it is important to note that absolute identifier uniqueness will always depend on the integrity of the assignment process for the underlying real world identifiers (i.e. the extension portion).

11.3 ASSIGNED IDENTIFIERS

The following convention has been established for OIDs that are explicitly assigned as part of the development of these specifications:

Table 179: OID Tree

OID Branch	Usage
2.16.840.1.113883.3.163.99.4.*	This is the root for identifiers pertaining to these consolidated CDA specifications.
2.16.840.1.113883.3.163.99.4.1.*	Document level template identifiers.
2.16.840.1.113883.3.163.99.4.2.*	Section level template identifiers.
2.16.840.1.113883.3.163.99.4.3.*	Section Entry level template identifiers.
2.16.840.1.113883.3.163.99.4.4.*	Entry level template identifiers.
2.16.840.1.113883.3.163.99.4.6.*	Code System identifiers.
2.16.840.1.113883.3.163.99.4.7.*	Header template identifiers[11].
2.16.840.1.113883.3.163.99.4.8.*	Value Set identifiers.
2.16.840.1.113883.3.163.99.4.9.*	Instance identifiers.

11.4 IMPLEMENTER ASSIGNED IDENTIFIERS

A number of identifiers referenced by the specification pertain to fields where the sending system reflects the source of truth. For example, various record identifiers or local client/patient identifiers are assumed to be generated within each sending system. In order to make these globally unique each implementer will require an OID at implementation time and said OID will need to be used when communicating these types of identifiers.

11.5 GOVERNANCE

Guidance for OID establishment will rest with Alberta Health through the Health Information Standards Committee for Alberta (HISCA) and its associated subcommittees. The formal list of Alberta internal identifiers is available as a workbook on the Alberta Health Intranet site at the following URL:

https://healthshare.gov.ab.ca/sites/isg/oids/Background%20Information/AH_Internal_OID_Listing.xls

[11] The header specification for the Alberta Shared Health Record document was not initially assigned a unique template identifier. Solely for the purpose of display in this guide it was assigned a number by adding a ".1" suffix to the OID for the Shared Health Record document template.

11.6 INSTANCE IDENTIFIER OIDS

The following table summarizes a non-exhaustive subset of well-known identifier OIDs relevant to this implementation guide. Since these OIDs are formally established through the HL7 OID registry, in case of discrepancy between this list and the registry, the latter **SHALL** prevail.

Table 180: Common Identifier OIDs

OID	Symbolic Name	Description
2.16.840.1.113883.4.32	ab-coMDTT-LN	Alberta College of Medical Diagnostic and Therapeutic Technologists license number
2.16.840.1.113883.4.31	ab-coMLT-LN	Alberta College of Medical Laboratory Technologists license number
2.16.840.1.113883.4.39	ab-coPHARM-LN	Alberta College of Pharmacists license number
2.16.840.1.113883.4.47	ab-coSW-LN	Alberta College of Social Workers license number
2.16.840.1.113883.4.48	ab-coSLPA-LN	Alberta College of Speech-Language Pathologists and Audiologists license number
2.16.840.1.113883.4.27	ab-coDEN-LN	Alberta Dental Association License Number (ab-coDEN-LN)
2.16.840.1.113883.4.600	ca-abDLN	Alberta, Canada (Ministry of Transportation of Alberta, Canada) Driver's Licence
2.16.840.1.113883.4.50	ca-bcPHN	British Columbia Personal Health Number
2.16.840.1.113883.4.597	ca-bcDLN	British Columbia, Canada ICBC (Insurance Corporation of British Columbia, Canada) Driver's Licence
2.16.840.1.113883.4.44	ab-coRN-LN	College and Association of Registered Nurses of Alberta license number
2.16.840.1.113883.4.46	ab-coRT-LN	College and Association of Respiratory Therapists of Alberta license number
2.16.840.1.113883.4.21	ab-coRAC-LN	College of Acupuncturists of Alberta license number (ab-coRAC-LN)
2.16.840.1.113883.4.24	ab-coDENA-LN	College of Alberta Dental Assistants license number (ab-coDENA-LN)
2.16.840.1.113883.4.28	ab-coDENT-LN	College of Alberta Denturists license number (ab-coDENT-LN)
2.16.840.1.113883.4.26	ab-coRDT-LN	College of Dental Technologists of Alberta license number (ab-coRDT-LN)
2.16.840.1.113883.4.43	ab-coRD-LN	College of Dieticians of Alberta license number
2.16.840.1.113883.4.29	ab-coHAP-LN	College of Hearing Aid Practitioners of Alberta license number (ab-coHAP-LN)
2.16.840.1.113883.4.33	ab-coRM-LN	College of Midwives of Alberta license number
2.16.840.1.113883.4.34	ab-coNPD-LN	College of Naturopathic Doctors of Alberta license number
2.16.840.1.113883.4.36	ab-coRO-LN	College of Opticians of Alberta license number
2.16.840.1.113883.4.40	ab-coPT-LN	College of Physical Therapists of Alberta license number
2.16.840.1.113883.4.41	ab-coMD-LN	College of Physicians and Surgeons of Alberta license number
2.16.840.1.113883.4.25	ab-coRDH-LN	College of Registered Dental Hygienists of Alberta license number (ab-coRDH-LN)
2.16.840.1.113883.4.45	ab-coRPN-LN	College of Registered Psychiatric Nurses of Alberta license number
2.16.840.1.113883.4.377	cschn	Correctional Service Canada Health Number
2.16.840.1.113883.4.378	inachn	Indian & Northern Affairs Canada Health Number
2.16.840.1.113883.4.12	mhphin	Manitoba Health Personal Health Identification Number - MHPHIN
2.16.840.1.113883.4.599	ca-mbDLN	Manitoba, Canada Driver's Licence

OID	Symbolic Name	Description
2.16.840.1.113883.4.601	ca-nbDLN	New Brunswick, Canada Driver's Licence
2.16.840.1.113883.4.51	ca-nbPHN	New Brunswick, Canada Personal Health Number
2.16.840.1.113883.4.596	ca-nlDLN	Newfoundland and Labrador, Canada Driver's Licence
2.16.840.1.113883.4.52	ca-nlPHN	Newfoundland and Labrador, Canada Personal Health Number
2.16.840.1.113883.4.602	ca-ntDLN	Northwest Territories, Canada (Ministry of Transportation Northwest Territories, Canada) Driver's Licence
2.16.840.1.113883.4.54	nwtCPHN	Northwest Territories, Canada Personal Health Number
2.16.840.1.113883.4.606	ca-nsDLN	Nova Scotia, Canada (Registry of Motor Vehicles Nova Scotia, Canada) Driver's Licence
2.16.840.1.113883.4.53	nsCPHN	Nova Scotia, Canada Personal Health Number
2.16.840.1.113883.4.603	ca-nuDLN	Nunavut, Canada Driver's Licence
2.16.840.1.113883.4.55	ca-nuPHN	Nunavut, Canada Personal Health Number
2.16.840.1.113883.4.595	ca-onDLN	Ontario, Canada MTO (Ministry of Transportation of Ontario, Canada) Driver's License
2.16.840.1.113883.4.604	ca-peDLN	Prince Edward Island, Canada Driver's Licence
2.16.840.1.113883.4.13	peiphni	Prince Edward Island, Canada Personal Health Number Identifier (PEIPHNI)
2.16.840.1.113883.4.11	mbcpn	Provider Registry Common Party Number - Manitoba, Canada (MBCPN)
2.16.840.1.113883.4.594	ca-qcDLN	Quebec, Canada (Société de l'assurance automobile du Quebec, Canada) Driver's Licence
2.16.840.1.113883.4.379	rcmphn	Royal Canadian Mounted Police Health Number
2.16.840.1.113883.4.598	ca-skDLN	Saskatchewan, Canada Driver's Licence
2.16.840.1.113883.4.35	ab-coOT-LN	The Alberta College of Occupational Therapists license number
2.16.840.1.113883.4.37	ab-coOPT-LN	The Alberta College of Optometrists license number
2.16.840.1.113883.4.38	ab-coPMD-LN	The Alberta College of Paramedics license number
2.16.840.1.113883.4.42	ab-coPSYCH-LN	The College of Alberta Psychologists license number
2.16.840.1.113883.4.22	ab-coCHIRO-LN	The College of Chiropractors of Alberta license number (ab-coCHIRO-LN)
2.16.840.1.113883.4.23	ab-coCLXT-LN	The College of Combined Laboratory and X-Ray Technologists license number (ab-coCLXT-LN)
2.16.840.1.113883.4.376	vachn	Veteran's Affairs Canada Health Number
2.16.840.1.113883.4.605	ca-ytDLN	Yukon, Canada Driver's Licence

Appendix A Known Issues & Instabilities

Implementer Caution

These specifications were devised as part of a project with a defined scope and a constrained delivery time frame. As such the specifications cannot address all stakeholder requirements that may arise in system-to-system data interchanges. Moreover, the final specification represents the sum total of a series of design and approach choices that reflect the consensus reached by those stakeholders involved in the specifications / standards development process.

Given these constraints implementers may want to anticipate and design for potential future changes to these specifications. In order to assist in this process, the project team has identified a series of potential stability risks and included these in this appendix.

The following table outlines potential risks to the stability of these specifications:

Table 181: AEDAMS CDA Specification Stability Risks

Observation	Stability Consequence / Potential Risk
OID assignments reflect the Alberta Health OID but still need to be adjusted to reflect the appropriate leaf node.	All core OIDs (i.e. template identifiers, value set identifiers, etc.) that identify Alberta objects will need to be updated.
Several vocabulary value sets include only sample codes; further work will be required (after the current phase) to elaborate these value sets. Among these the definition of Pathway specific referral questions may be the most substantive gap.	Not all value sets are ready for implementation.
This specification points to SNOMED CT generally for codification of vaccine products and associated biological substances. This may require alignment, likely through mapping of the Alberta vaccine code sets, to SNOMED CT. At the time of publication of this guide, some of the required vaccine concepts were not yet modelled in SNOMED CT and therefore it is anticipated that a number of extension concepts will be required.	Implementers will need to map their own internal vaccine codes to SNOMED CT until this is resolved. As/when it is resolved, those vendors which support the Alberta vaccine code set “should” be able to communicate directly in SNOMED CT using the applicable mapping.
This release does not include any automated constraint validation tools such as Schematron or Relax NG.	While this impacts the ability to validate conformance automatically, this issue is not expected to impact the stability and completeness of the specification in any way.
While the working group supporting the development of these specifications provided diligent review, both the size of the group and the available review time of its members where limited. As a result, feedback provided cannot be assumed to be representative of the full breadth of stakeholders across the Alberta healthcare contiuum. As this CDA specification and the associated messaging specifications go out to a broader stakeholder population, additional changes may be identified. At this time, it is expected that this specification will go through various stages of review and, later, piloting. These stages include: • Final review by the AEDAMS working group;	Each of these reviews is expected to surface information that may impact the specification. As such, the specification cannot be considered fully stable until a full pilot implementation have been completed.

Observation	Stability Consequence / Potential Risk
• Review by the Health Information Standards Committee for Alberta (HISCA); • Review and/or early adoption by the Path to Care eReferral Project's hub/solution vendor; • Initial piloting with one or more EMR and/or HIS solutions;	
These specifications are explicitly structured to enable addition of futher templates to either deepen the eReferral Clinical Attachment document; to establish additional eReferral attachment variants; or to establish other clinical documents relevant to Alberta Health and Alberta Health Services initiatives.	This guide infrastructure was designed to allow the addition of futher documents in a manner that reuses existing content without the need to disrupt the consistency and correctness of document, section, section entry and entry templates previously defined. Obviously if the process of adding new content that leverages existing content surfaces issues with the existing content then this will lead to changes that may impact current document specifications.
Discussions late in the design phase suggest that an additional document template may be required to enable the carrying of a full RFS (e.g. "Alberta RFS Document"). This would imply carrying data from the messaging layer as well as data from, potentially, multiple clinical attachments (*i.e.* CDA documents conforming to the eReferral Clinical Attachment template). A key design question for that document is whether any structured clinical data contained in the various sections from multiple clinical attachments would be promoted to the sections of the Alberta RFS (container) Document vs. simply including these other documents as attachments to the full RFS. This question requires further discussion about the consequences on the eReferral hub and receiving systems of one approach or the other.	This change would be the result of a new (or refined) requirement and would represent an extention to the current solution.
The 2012 release of the pan-Canadian Primary Health Care (PHC) reference sets used in this specification has errors • "LanguageCode" refSet is identified using the same OID ("2.16.840.1.113883.2.20.3.190") that is already used in the Master Terminology Worksheet for ObservationEventLabCriteriaType – therefore the "LanguageCode" OID needs to change; • The "AllergyIntoleranceTypeCode" refSet is identified using the same OID ("2.16.840.1.113883.2.20.3.210") as refSet "ObservationResultableLabTypeSubsetCommonlyUsed"; one of them needs to change; • "LanguageCode" references code system "1.0.639.3."; the trailing period should probably be removed; This issues have been reported to Infoway and they are expected to be resolved as follows: • "LanguageCode" refSet will suprcede the current HumanLanguage value set and take on that OID, namely "2.16.840.1.113883.2.20.3.51"; the errant "." At the end of the referenced code system will be removed. • The OID for the	As published the guide is not consistent with the Primary Health Care ref Set OID assigments; however, since these are in error and the guide adopts the anticipated changes from Infoway, this should position implementers well as/when the next release of the PHC refSets are published.

Observation	Stability Consequence / Potential Risk
"ObservationResultableLabTypeSubsetCommonlyUsed" refSet will be updated to "2.16.840.1.113883.2.20.3.277" This guide has pre-adopted these changes.	
At this time no Code System has been assigned for designation of a "Software" author. As a result, a software author is identied via a text string and an optional code where the Code System is implementer dependent.	If/when a scheme to formally identify software products (and potentially software product versions and/or specific instances) is established within the realm of the Alberta HIAL then this can be incorporated formally into the spec by identifying the specific Code System to be used.
Several value sets have been identified as potential candidates for pan-Canadian standardization. These have generally been identified with an OID of the following pattern: {PreSCTEMP}.{ValueSetOID}.TBD8n	An OID will need to be assigned prior to implementation; this can be an Alberta specific OID (if no pan-Canadian consensus or solution can be established) or an OID under the auspices of the *Infoway* Standards Collaborative.

Appendix B Glossary & Abbreviations

B.1. Introduction

There are a number of excellent glossaries available online which are preferred to the use of a custom glossary. These include the following:

Table 182: Internet Based Glossaries

Glossary	URL
HL7 Glossary of Terms	http://www.hl7.org/documentcenter/public_temp_2D807AAD-1C23-BA17-0C68015850694475/calendarofevents/FirstTime/Glossary%20of%20terms.pdf
Infoway Blueprint Glossary (Dated)	https://knowledge.infoway-inforoute.ca/ehr_blueprint/glossary/en/a.html
E-Health & Telehealth Glossary	http://telehealth.net/glossary
Joint Initiative for Global Standards Harmonization Health Informatics Document Registry and Glossary (Standards Knowledge Management Tool)	http://www.skmtglossary.org/Default.aspx?AspxAutoDetectCookieSupport=1 (Requires registration)

In addition, various jurisdictional eHealth agencies and catalyst organizations also maintain glossaries.

B.2. Specific Terms & Abbreviations

Notwithstanding the preference for external glossary entries, the following abbreviation table has been included here for convenience:

Table 183: Terms & Abbreviations

Expansion / Term	Abbreviation	Definition
Alberta Health	AH	
Alberta Health Services	AHS	
Central Access and Triage	CAT	The process of reviewing referral requests or requests for service for the purpose of routing and prioritizing.
Clinical Document Architecture	CDA	
Clinical Report		A general term used to describe a report that contains the results of a patient medical examination.
Closed Loop (in the context of Referrals)		This type of eReferral process includes a closure step where the source initiating a referral receives information about the outcome of the referral.
Consultation Report		A type of clinical report that contains the results of a patient medical examination – typically developed by a specialist to whom the patient has been referred.
Digital Imaging and Communications in Medicine	DICOM	

Expansion / Term	Abbreviation	Definition
Diagnostic Imaging Report	DIR	
Draft Standard for Trial Use	DSTU	
Electronic Health Record	EHR	An Electronic Health Record (EHR) is a health record of an individual that is accessible online from many separate, interoperable and automated systems within an electronic network.
Electronic Medical Record	EMR	A general term describing computer-based client record systems. It is sometimes extended to include other functions like order entry for medications and tests, amongst other common functions. For the purposes of this glossary, EMR is the system used in ambulatory or community clinic settings.
Healthcare Clinical Information System	HCIS	A hospital's Healthcare Clinical Information System contains client health records information.
Health Information Standards Committee for Alberta	HISCA	
Health Services Catalog	HSC	A resource that contains the information about the providers and services, and the requirements for a Request for Service to be submitted.
Healthcare Information and Management Systems Society	HIMSS	
Healthcare Information Technology	HIT	
Health Level 7	HL7	Health Level 7 is an ANSI-accredited Standards Developing Organization (SDO) operating in the healthcare arena. "Level Seven" refers to the highest level of the International Organization for Standardization's (ISO) communications model for Open Systems Interconnection (OSI) – the application level. The application level addresses definition of the data to be exchanged, the timing of the interchange, and the communication of certain errors to the application. The seventh level supports such functions as security checks, participant identification, availability checks, exchange mechanism negotiations and, most importantly, data exchange structuring.
Hypertext Markup Language	HTML	
International Statistical Classification of Diseases and Related Health Problems Tenth Revision, Canada	ICD-10-CA	A classification system for diseases.
Implementation Guide	IG	
Integrating the Healthcare Enterprise	IHE	
International Health Terminology Standard Development Organisation	IHTSDO	Standards Development Organization (SDO) that develops, ballots and publishes the SNOMED CT (see definition below) terminology.
International Organization for Standardization	ISO	Founded in 1946, ISO is an international organization composed of national standards bodies from over 75 countries. ISO has defined a number of important computer standards, the most significant of which is perhaps OSI (Open Systems Interconnection), a standardized

Expansion / Term	Abbreviation	Definition
		architecture for designing networks.
Limited Production Rollout	LPR	A project scoping approach that defines a limited scope for early implementation; in contrast to a pilot, LPRs are intended to remain in production subject to refinement and extension. In the context of this AEDAMS project this refers to the first phase of the Clinical Request for Service/Referral Management project implementation.
Logical Observation Identifiers Names and Codes	LOINC®	
Model-Driven Health Tools	MDHT	
Multipurpose Internet Mail Extensions	MIME	
Object Identifier	OID	OIDs are a hierarchical identification scheme designed to ensure that identifiers are globally unique.
Portable Document Format	PDF	
Personal Health Record	PHR	
(BC) Physician Information Technology Office	PITO	
Referral Destination		The Provider of Service that has been requested or been assigned to provide the care that is requested in the RFS. Equivalent terms include: Treating Providers, Specialist, Referred to Provider.
(Referral) External System		The software system that will communicate with the RMS through system to system message integration. For Example Electronic Medical Record and Clinical Information Systems.
Referral Management Service	RMS	The system that acts as an intermediary between the Referral Source and the Referral Destination. It directs the RFS to the Provider or Service specified in the RFS and supports triage activities. It may have the ability to check the RFS for completeness based on HSC criteria before passing it on, and may act as a referral repository. The RMS may act as the interface with the HSC.
Referral Source		The originator of an RFS. Theoretically this will be considered to be the Referring Provider. Functionally this may be anyone acting on the Referring Providers behalf, such as an Registered Nurse or Medical Office Assistant.
(Referral) Triage		The activity of managing RFSs that have been submitted and assignment with at provider or service. This may include follow-up activities until the RFS is closed. These activities may be performed by various users, including CAT groups, staff of individual clinics, or the Provider to which the RFS is directed.
(HL7) Reference Information Model	RIM	
Request for Service	RFS	The request for service including a referral, transfer or order. • Referral is a request for service from a service/Provider to another when acceptance of the patient is a discretionary decision of the services and/or Provider. Referrals included request for service from GP/FP to

Expansion / Term	Abbreviation	Definition
		Specialist, GP/FP to GP/FP, Specialist to GP/FP or Specialist to Specialist; to Community Health Centers such as Mental Health and Addiction Services or Living Well Programs and to Allied Health Services such as physiotherapy clinics. Referrals may be specific to a service and Provider, service and location, and/or location. • Transfer is a request for service from one facility to another when acceptance is dependent on available space and defined patient conditions such that the patient can be accommodated. Examples of transfers include requests for service to move a patient from on acute care facility to another or to facilitate the move for a patient from an acute care facility to long term care. • Order is a request for service for a laboratory (e.g. A1C, Haemoglobin) or diagnostic test (e.g. ECG, MRI)
Request for Service Identifier	rfsID	Acronym for the unique identifier for a submitted Request for Service. A unique identifier assigned to a Request for Service that enables tracking, linking related information, and retrieval for information about the Request for Service.
Rich Text Format	RTF	
Service Object Pair	SOP	
Standards and Interoperability	S&I	
Standards Development Organization	SDO	Accredited organization that is responsible for developing, approving and publishing standards. Example SDOs include HL7, IHTSDO and ISO.
Structured Report	SR	
Subject Matter Expert	SME	
Systematized Nomenclature of Medicine-Clinical Terms	SNOMED CT®	SNOMED Clinical Terms® (SNOMED CT®) is a dynamic, scientifically validated clinical health care terminology and infrastructure that makes health care knowledge more usable and accessible. The SNOMED-CT® Core Terminology provides a common language that enables a consistent way of capturing, sharing and aggregating health data across specialties and sites of care. Among the applications for SNOMED-CT are EMRs, ICU (Intensive Care Unit) monitoring, clinical decision support, medical research studies, clinical trials, computerized physician order entry, disease surveillance,
Tagged-image file format	TIFF	
Template Database	Tdb	
Unified Code for Units of Measure	UCUM	
Unstructured Document	UD	
Unique Device Identification	UDI	
Unified Modeling Language	UML	
Uniform Resource Locator / Uniform Resource Identifier	URL / URI	

Expansion / Term	Abbreviation	Definition
Web Access to Persistent DICOM Objects	WADO	
XML Path	XPath	A path name by which a data element in an XML instance can be uniquely referenced.