

Canada Health Inforoute

Pan-Canadian CDA Header Implementation Guide

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Introduction

Audience

The audiences for this implementation guide are the architects and developers of healthcare information technology (HIT) systems in the Canadian Realm that exchange patient clinical data.

Business analysts and policy managers can also benefit from a basic understanding of the use of Clinical Document Architecture (CDA) templates across multiple implementation use cases.

Governance and Maintenance

Governance and maintenance processes have not yet been established for these specifications. However, it is anticipated that once Canadian CDA specifications are finalized through an open review process, they will follow the Standards Collaborative process to become designated as pan-Canadian standards. This will ensure they are maintained and updated as required.

Scope

The purpose of this Implementation Guide is to provide formal, implementable specifications for information exchange using the HL7 Clinical Document Architecture (CDA).

This document is scoped by the content of HL7 CDA R2, the Consolidated CDA Implementation Guide, the CDA implementation guides in Canada, and additional constraints from IHE.

For now, this guide contains a pan-Canadian CDA Header. As additional pan-Canadian CDA content specifications are created they will be added.

CDA Overview

A clinical document is 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.

Approach

In the development of this specification, the Project team referenced material from the following CDA implementation guides:

- AB Transcribed Reports CDA Implementation Guide
- BC eHR CDA Implementation Guide
- BC PITO Guide
- CIHI - PHC EMR Data Extract Specification (DES)
- MB AMC cEMR CDA guide
- MB eReferral CDA IG
- ON Clinical Document Specification (CDS)
- CDA R2 Normative standard 2005
- IHE Laboratory Technical Framework
- France CDA Guide (Volet Structuration Minimale de Documents Medicaux)
- US Consolidated CDA guide (May 2012)/(July 2012)

The Project team completed the DRAFT analysis by summarizing the header elements, cardinality, data types, and terminologies within a spreadsheet. Base CDA R2 Normative Standard mandatory items were included by default. Additional constraints common in the majority of the implementation guides were identified for discussion and agreement with SCWG 2 & SCWG 6.

The Project based the format and content of this implementation guide primarily on the US Consolidated CDA guide, PITO, MB eReferral and the MB AMC cEMR CDA guides.

~~A similar process will be used for the clinical templates which will be added to this guide in future releases.~~

Notes to Readers

The following as-is class attributes have been identified as too broad for implementations based on general terminology concept domains (e.g. ActCode, RoleCode). Based on environmental scan of existing projects, no further details are found at this time to assist in providing a constrained and implementable value set for Canadian implementation. Existing implementers of the following attributes are strongly encouraged to come forward on the specific types of information being conveyed using these attributes in order for a refined and implementable pan-Canadian value set to be created.

- InFulfillmentOf.order.code
- DocumentationOf.serviceEvent.code

Use of Templates

This guide uses a template based model for constraining the base CDA R2 Normative Standard to meet the requirements of Canadian clinical document based use cases.

Template identifiers (`templateId`) are assigned at the document, section, and entry level. 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. `@root="2.16.840.1.113883.10.20.4.1.1"`) provides a unique identifier for the template in question.

If a template is a specialization of another template, its first constraint indicates the more general template. The general template is not always required. In all cases where a more specific template conforms to a more general template, asserting the more specific template also implies conformance to the more general template.

An 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 an instance document conforms. The implementation guide (IG) 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.

Recipient Responsibilities

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`).

Levels of Constraint

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

- Level 1 requirements impose constraints upon the CDA Header. The body of a Level 1 document may be XML or an alternate allowed format. If XML, it must be CDA-conformant markup.
- 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.
- 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.

Conformance Conventions Used in This Guide

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

Conformance Verbs (Keywords)

The following definitions of the conformance verbs are provided in the HL7 Version 3 Publishing Facilitator's Guide (<http://www.hl7.org/v3ballot/html/help/pfg/pfg.htm>):

SHALL: Required/Mandatory.

SHOULD: Best Practice/Recommendation

MAY: Acceptable/Permitted

The following are the definitions of the attribute conformance as defined in the Pan-Canadian Implementation Guide volume 0:

a) Mandatory (Must Exist)

A valid instance of this message must include all mandatory content elements.

b) Populated (Expected to Exist)

Content elements in this category must be present in all circumstances. However, on occasion, values for these elements will not be present and a **Null Flavour** would be provided to indicate why the data is not being provided (e.g. masked for hidden/protected data, unable to send due to regulatory constraint).

c) Required (May Exist)

These content elements may or may not be present in the message but implementers are required to support the interchange of this information.

d) Optional (May or May Not be Supported)

These content elements may or may not be present and there is no requirement for implementers to support the interchange of this information.

The following table summarizes the mapping between conformance verbs and attributes conformance:

Conformance Verbs	Attribute conformance defined in Pan-Canadian context
SHALL	<p>Mandatory: expressed with the keyword "SHALL". The data SHALL be sent and the use of nullFlavor is not permitted. The conformance statement shall explicitly say "SHALL NOT contain NullFlavournullFlavor". Note that any element declared to be Mandatory must have a minimum cardinality of one.</p>
	<p>Populated: expressed with the keyword "SHALL". The data SHALL be sent if available. The keyword "SHALL" implicitly allows the use of NullFlavournullFlavor. Note that any element declared to be Populated must have a minimum cardinality of one.</p>

	Required: expressed with the keyword " SHALL SUPPORT ". The data SHALL be sent if available. Note that any element declared to be Required has a minimum cardinality of zero.
SHOULD	Optional: both SHOULD and MAY can be used to express the optional conformance. If there is a need to provide guidance to implementers, SHOULD is preferred.
MAY	
SHALL NOT	An absolute prohibition against inclusion.

Examples of use of conformance verbs to convey attribute conformance

Example of use of the conformance verbs to express **Mandatory** attributes:
SHALL contain at least one [1..*] id and **SHALL NOT** contain nullFlavor.

Example of use of the conformance verbs to express **Populated** attributes:
SHALL contain exactly one [1..1] id

Or

SHALL contain exactly one [1..1] id and **SHALL** contain a nullFlavor if no value is provided.

Example of use of the conformance verbs to express **Required** attributes:
SHALL SUPPORT up to one [0..1] effectiveTime

Example of use of the conformance verbs to express **Optional** attributes:
SHOULD contain zero or one [0..1] effectiveTime (Preferred option)

Or

MAY contain zero or one [0..1] effectiveTime

Cardinality

When the conformance is Mandatory or Populated the number of allowable occurrences of an element must be at least 1. The cardinality is expressed as the following :

- 0..1 zero or one
- 1..1 exactly one
- 1..* at least one
- 0..* zero or more

When the conformance is Mandatory or Populated the number of allowable occurrences of an element must be at least 1. Furthermore, both Mandatory and Populated use the verb SHALL. As explained above, the former prohibits the use of `NullFlavorsnullFlavors` and the latter allows the use of `NullFlavorsnullFlavors` when the values are not available to indicate why the data is not provided.

If an element is required or optional, the number of allowable occurrences of an element may be 0; the cardinality will be expressed as [0..1] or [0 .. *].

Vocabulary Conformance

The templates in this document draw vocabulary content from several terminology code systems such as LOINC[®] and SNOMED CT[®]. These vocabularies are defined in various supporting specifications and may be maintained by other bodies, as is the case for the LOINC[®] and SNOMED CT[®] vocabularies.

Note that value-set identifiers (e.g., ValueSet 2.16.840.1.113883.1.11.78 Observation Interpretation (HL7) **STATIC**) do not appear in CDA submissions; they are tied to the conformance requirements of an implementation guide and to the appropriate code system for validation.

Value-set bindings adhere to HL7 Vocabulary Working Group best practices, and include both a conformance verb (**SHALL**, **SHOULD**, and **MAY**.) with an indication of **STATIC** binding. For pan-Canadian implementation, the value set binding is set to **STATIC** value sets only. Static value sets use dates as the versioning mechanism to identify the value set required to support the specified CDA attribute for implementation. Dynamic value sets, on the other hand, do not specify specific versions of value sets and the implementation would be expected to check against currency of value set content prior to data transmission. This type of value set increases complexity for initial implementation and will be considered as business requirements arise. Conformance verb "SHALL" corresponds to the coding strength "Coded with No Extensibility (CNE)" which indicates no codes outside of the defined value set can be used for interoperability. Conformance verb "SHOULD" corresponds to "Coded With Extensibility (CWE)" which indicates content from the defined value set is strongly recommended to be implemented first, prior to examining inclusion of local codes. Coding Strength CNE is used wherever possible to guarantee the highest level of interoperability. Use of coding strength CWE eases implementation, however, interoperability will suffer as further negotiations between systems are required to transmit codes outside of the agreed upon value set content.

The third type of vocabulary binding is a simplified constraint, used when the binding is to a single code, includes the meaning of the code, as follows.

Example: Binding to a single code Vocabulary Conformance Statement

<p>SHALL be fixed to the code 11405-4 (Problem List) from the code system LOINC having the OID 2.16.840.1.113883.6.1 effective (date to be determined).</p>
--

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

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

The above example would be properly expressed as follows.

Example: XML expression of a single-code binding

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

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

A full discussion of the representation of vocabulary is outside the scope of this document; for more information, see the HL7 V3 Normative Edition 2010 sections on Abstract Data Types and XML Data Types Release 1 (R1).

There is a discrepancy in the implementation of translation code versus the original code between HL7 Data Types R1 and the convention agreed upon for this specification. The R1 data type requires the original code in the root. This implementation guide specifies the standard code in the root, whether it is original or a translation. This discrepancy is resolved in HL7 Data Types R2.

Example: XML expression of Translation code

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

Null Flavor null Flavor

Sometimes data is not available to be sent in the messages or clinical documents: an item may be unknown, not relevant, or not computable. In HL7, a *flavor* of null, or `nullFlavor`, describes the reason for missing data.

Example: *NullFlavornullFlavor*

```
<effectiveTime nullFlavor="NA"/>  
<name nullFlavor="NI"/>
```

XPath Notation

This document uses XML Path Language (XPath) notation in conformance statements and elsewhere to identify the Extended Markup Language (XML) elements and attributes within the CDA document instance to which various constraints are applied. The implicit context of these expressions is the root of the document. This notation provides a mechanism that will be familiar to developers for identifying parts of an XML document.

The path is constructed from node names and attribute names (prefixed by a "@") and concatenated with a "/" symbol.

Example: XML document

```
<author>  
  <assignedAuthor>  
    ...  
    <code codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'  
      code='310512001' displayName='Medical oncologist (occupation)'/>  
    ...  
  </assignedAuthor>  
</author>
```

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

Example: XPath expression

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

General Header Template

The General Header template describes constraints that apply to the pan-Canadian header. This header reflects the constraints that are defined in the other Canadian CDA implementation guides (see references).

Pan-Canadian Realm Header

Clinical Document Header/realmCode

Defines the realm code for use by Canada.

SHALL contain exactly one [1..1] `realmCode` to be fixed to the code CA from the code system HL7Realm having the OID 2.16.840.1.113883.5.1124 effective 2013-03-18.

ClinicalDocument/typeId

The typeId is a technology-neutral explicit reference to this CDA, Release Two specification.

SHALL contain exactly one [1..1] typeId.

This typeId **SHALL** contain exactly one [1..1] @root to be fixed to 2.16.840.1.113883.1.3 and **SHALL NOT** contain nullFlavor.

This typeId **SHALL** contain exactly one [1..1] @extension to be fixed to "POCD_HD000040" and **SHALL NOT** contain nullFlavor.

ClinicalDocument/templateId

CDA provides a mechanism to reference a template that has been assigned a unique identifier using the templateId attribute.

A ClinicalDocument that conforms to the pan-Canadian Header specification shall contain at least the pan-Canadian header templateId.

SHALL contain one or more [1..*] templateId :

1. **SHALL** contain exactly one [1..1] @root be fixed to 2.16.840.1.113883.2.20.4.1.1 that represents the pan-Canadian CDA Header and **SHALL NOT** contain nullFlavor.

ClinicalDocument/@classCode

SHALL contain exactly one [1..1] @classCode

1. **SHALL** be fixed to the code DOCCLIN from the code system ActClass having the OID 2.16.840.1.113883.5.6 effective 2013-03-18.

ClinicalDocument/@moodCode

SHALL contain exactly one [1..1] @moodCode

1. **SHALL** be fixed to the code EVN (event) from the code system ActMood having the OID 2.16.840.1.113883.5.1001 effective 2013-03-18.

ClinicalDocument/id

Represents the unique instance identifier of a clinical document.

SHALL contain exactly one [1..1] id represented using II from Data Type Release 1 and **SHALL NOT** contain nullFlavor.

ClinicalDocument/code

The code specifies the particular type of document (e.g. History and Physical, Discharge Summary, Progress Note).

SHALL contain exactly one [1..1] **code**

1. **SHALL** comply with the following value set assertion, effective 2013-04-01: the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.206 CDAHeaderDocumentType **STATIC** and **SHALL NOT** contain nullFlavor.
2. If the code is missing, the ~~NullFlavor~~nullFlavor **SHALL** be set to OTH.

ClinicalDocument/title

Represents the title of the document. The Clinical Document title can either be a locally defined name or the display name corresponding to clinicalDocument/code.

SHALL contain ~~exactly zero or~~ one [10..1] ~~title~~ and **SHALL NOT** contain nullFlavor.

1. The title **SHALL NOT** conflict with the `clinicalDocument/code`

ClinicalDocument/effectiveTime

Represents the document creation time, when the document first came into being. Where the CDA document is a transform from an original document in some other format, the ClinicalDocument.effectiveTime is the time the original document is created.

SHALL contain exactly one [1..1] **effectiveTime** and **SHALL NOT** contain nullFlavor

1. The content of `effectiveTime` **SHALL** be conformant to ~~Canadian realm Date and Time Data Type~~Canadian realm Date and Time Data Type.

ClinicalDocument/confidentialityCode

Confidentiality code indicates the appropriate control on disclosure of information in the document. Confidentiality is a required contextual component of CDA, where the value expressed in the header holds true for the entire document, unless overridden by a nested value.

SHALL contain exactly one [1..1] **confidentialityCode**

1. **SHALL** comply with the following value set assertion, effective 2008-12-17: - the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.139 `x_BasicConfidentialityKind` **STATIC** and **SHALL NOT** contain nullFlavor.

ClinicalDocument/languageCode

Specifies the human language of the document.

SHALL contain exactly one [1..1] `languageCode`

1. **SHALL** be fixed to the code "eng-CA" or "fra-CA" (3-letter ISO 639-3 language code and 2-letter ISO 3166-1 country code) from value set assertion, effective date 2012-05-31: - the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.190 `LanguageCode`
STATIC and **SHALL NOT** contain nullFlavor.

ClinicalDocument/setId

Represents an identifier that is common across all document revisions.

SHOULD contain zero or one [0..1] `setId`.

1. If `setId` is present `versionNumber` **SHALL** be present and **SHALL NOT** contain nullFlavor.
2. If `setId` is present, it **SHALL** be represented using II from Data Type Release 1.

ClinicalDocument/versionNumber

An integer value used to version successive replacement documents.

SHOULD contain zero or one [0..1] `versionNumber`.

1. If `versionNumber` is present `setId` **SHALL** be present and **SHALL NOT** contain nullFlavor.

Example: Canadian realm header

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

<!--This document is conformant to the Canadian CDA Header Template-->

  <templateId root="2.16.840.1.113883.2.20.4.1.1" />

<id extension="909090909" root="2.16.840.1.113883.19"/>

<code codeSystem="2.16.840.1.113883.6.1"
      codeSystemName="LOINC" code="11488-4"
      displayName="Consult Note"/>

<title>CONSULTATION NOTE</title>

<effectiveTime value="20121020171504+0500"/>
<confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25"/>
<languageCode code="eng-CA"/>
```

RecordTarget (Patient)

The `recordTarget` records the information about the patient whose health information is described by the clinical document.

SHALL contain **exactly at least** one `[1..1]..*` `recordTarget`.

1. **SHALL** contain exactly one `[1..1]` `typeCode` and **SHALL** be fixed to the code `RCT` from the code system `ParticipationType` having the OID `2.16.840.1.113883.5.90` effective 2013-03-18.
2. **SHALL** contain exactly one `[1..1]` `contextControlCode` and **SHALL** be fixed to the code `OP` from the code system `ContextControl` having the OID `2.16.840.1.113883.5.1057` effective 2013-03-18 .
3. **SHALL** contain exactly one `[1..1]` `patientRole` and **SHALL NOT** contain `nullFlavor`.
 - a. **SHALL** contain exactly one `[1..1]` `@classCode` and **SHALL** be fixed to the code `PAT` from code system `RoleClass` having the OID `2.16.840.1.113883.5.110` effective 2013-03-18.
 - b. **SHALL** contain at least one `[1..*]` `id` and **SHALL NOT** contain `nullFlavor`.
 - c. This `patientRole` **SHOULD** contain zero or more `[0..*]` `addr`.
 - i. The content of `addr` **SHALL** be a conformant ~~Canadian Realm Address Data Type~~ **Canadian Realm Address Data Type**.
 - d. This `patientRole` **SHOULD** contain zero or more `[0..*]` `telecom`.

- i. The content of `telecom` **SHALL** be a conformant Canadian Realm Telecom Data Type. If unknown, use the `nullFlavor` value set.
- e. This `patientRole` **SHALL** contain exactly one [1..1] `patient` and **SHALL NOT** contain `nullFlavor`.
 - i. This patient **SHALL** contain exactly one [1..1] `@classCode` and **SHALL** be fixed to the code `PSN` from code system `RoleEntityClass` having the OID 2.16.840.1.113883.5.110 2.16.840.1.113883.5.41 effective 2013-03-18.
 - ii. This patient **SHALL** contain exactly one [1..1] `determinerCode` and **SHALL** be fixed to the code `INSTANCE` from code system `EntityDeterminer` having the OID `2.16.840.1.113883.5.30` effective 2013-03-18.
 - iii. This patient **SHALL** contain at least one [1..*] `name` and SHALL NOT be nullFlavor.
 - 1. The content of `name` **SHALL** be a conformant Canadian Realm Patient Name data type.
 - iv. This patient **SHALL** contain exactly one [1..1] `administrativeGenderCode` and **SHALL** comply with the following value set assertion, effective 2008-12-17: - the set of codes in the expansion of value set `2.16.840.1.113883.1.11.1 AdministrativeGender` **STATIC**.
 - v. This patient **SHALL** contain exactly one [1..1] `birthTime`.
 - 1. **SHALL** be conformant to Canadian Realm Date Time data type.
 - vi. This patient **SHOULD** contain zero or one [0..1] `maritalStatusCode` and **SHALL** comply with the following value set assertion, effective 2013-03-18: - the set of codes in the expansion of value set `2.16.840.113883.1.11.12212 MaritalStatus` **STATIC**.
 - vii. This patient **MAY** contain zero or one [0..1] `religiousAffiliationCode`. The value set to support this attribute is out of scope of this release.
 - viii. This patient **MAY** contain zero or one [0..1] `raceCode`. The value set to support this attribute is out of scope of this release.
 - ix. This patient **SHOULD** contain zero or more [0..*] `languageCommunication`.

1. **SHALL** contain ~~at least zero or~~ one [0..1..*] `languageCode`
 - a. **SHALL** comply with the following value set assertion, 2012-05-31: - the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.190 `LanguageCode` **STATIC**.
 - b. If present, **SHOULD** contain zero or one [0..1] `modeCode` and **SHALL** comply with the following value set assertion, effective 2008-12-17: the set of codes in the expansion of value set 2.16.840.1.113883.1.11.12249 `LanguageAbilityMode` **STATIC**.
 2. **SHOULD** contain zero or one [0..1] `proficiencyLevelCode` and
 3. **SHALL** comply with the following value set assertion, effective 2008-12-17: the set of codes in the expansion of value set 2.16.840.1.113883.1.11.12199 `LanguageAbilityProficiency` **STATIC**.
 4. **MAY** contain zero or one [0..1] `preferenceInd`.
- x. This patient **MAY** contain zero or more [0..*] `guardian`
1. **SHALL** contain exactly one [1..1] `@classCode`
 - a. **SHALL** be fixed to the code `GUARD` from code system `RoleClass` having the OID 2.16.840.1.113883.5.110 effective 2013-03-18.
 2. **SHOULD** contain zero or more [0..*] `id`.
 - a. **SHALL**, when present, conform to the II Data Type R1.
 3. **SHOULD** contain up to one [0..1] `code`.
 - a. **SHALL** comply with the following value set assertion, effective 2008-12-17: the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.90 `PersonalRelationshipRoleType` **STATIC**.
 4. **SHOULD** contain zero or more [0..*] `addr` and each,
 - a. **SHALL**, when present, conform to the [Canadian Realm Address Data Type](#).
 5. **SHOULD** contain zero or more [0..*] `telecom` such that each,

a. **SHALL**, when present, conform to the [Canadian Realm Telecom Data Type](#).

6. **SHALL** contain exactly one [1..1] `guardianPerson` OR `guardianOrganization`

a. If present, this `guardianPerson`

i. **SHALL** contain exactly one [1..1] `@classCode`

1. **SHALL** be fixed to the code `PSN` from code system `EntityClass` having the OID 2.16.840.1.113883.5.41 effective 2013-03-18.

ii. **SHALL** contain exactly one [1..1] `determinerCode`

1. **SHALL** be fixed to the code `INSTANCE` from code system `EntityDeterminer` having the OID 2.16.840.1.113883.5.30 effective 2013-03-18 and **SHALL NOT** contain ~~`NullFlavor`~~`nullFlavor`.

iii. **SHALL** contain at least one [1..*] `name` **and SHALL NOT be nullFlavor**.

1. Each `name` **SHALL**, when present be represented using in the ~~[Canadian Realm Person Name Data Type](#)~~`Canadian Realm Person Name Data Type`.

b. If present, this `guardianOrganization`

i. **SHALL** contain exactly one [1..1] `@classCode`

1. **SHALL** be fixed to the code `ORG` from code system `EntityClass` having the OID 2.16.840.1.113883.5.41 effective 2013-03-18.

ii. **SHALL** contain exactly one [1..1] `determinerCode`

1. **SHALL** be fixed to the code `INSTANCE` from code system `EntityDeterminer` having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.

iii. **SHALL** contain ~~exactly~~**at least** one [1..1]..*] `id`

1. “If name contains nullFlavor then id SHALL NOT contain nullFlavor” and “If id contains nullFlavor then name SHALL NOT contain nullFlavor”

~~1.2.~~ **SHALL**, when present, conform to the II Data Type R1.

iv. **SHOULD** contain ~~zero or at least~~ one [~~0..1~~].*] **name**.

1. “If name contains nullFlavor then id SHALL NOT contain nullFlavor” and “If id contains nullFlavor then name SHALL NOT contain nullFlavor”

~~1.2.~~ The content of **name** **SHALL** be conformant to Organization Name (ON) Data Type as defined in R1.

v. **SHOULD** contain zero or more [0..*] **addr**.

1. The content **SHALL** conform to [Canadian Realm Address data type](#).

vi. **SHOULD** contain zero or more [0..*] **telecom**.

1. The content **SHALL** conform to the [Canadian Realm Telecom data type](#).

xi. This patientRole **SHOULD** contain zero or one [0..1] **providerOrganization**.

1. **SHALL** contain exactly one [1..1] **@classCode**

a. **SHALL** be fixed to the code `ORG` from code system `EntityClass` having the OID `2.16.840.1.113883.5.41` effective 2013-03-18.

2. **SHALL** contain exactly one [1..1] **determinerCode**

a. **SHALL** be fixed to the code `INSTANCE` from code system `EntityDeterminer` having the OID `2.16.840.1.113883.5.30` effective 2013-03-18.

3. **SHALL** contain ~~exactly~~ at least one [~~1..1~~].*] **id**

a. “If name contains nullFlavor then id SHALL NOT contain nullFlavor” and “If id contains nullFlavor then name SHALL NOT contain nullFlavor”

~~a~~.b. **SHALL**, when present, conform to the II Data Type R1.

4. **SHOULD** contain ~~zero or at least~~ one [~~0..1~~].*.*) **name**.

a. “If name contains nullFlavor then id SHALL NOT contain nullFlavor” and “If id contains nullFlavor then name SHALL NOT contain nullFlavor”

~~a~~.b. The content of name **SHALL** be a conformant to Organization Name (ON) Data Type as defined in R1.

5. **SHOULD** contain zero or more [0..*] **addr**.

a. The content **SHALL** conform to the [Canadian Realm Telecom Address data type](#).

6. **SHOULD** contain zero or more [0..*] **telecom**.

a. The content **SHALL** conform to the [Canadian Realm Telecom data type](#).

Example: recordTarget

```

<recordTarget typeCode="RCT" contextControlCode="OP">
  <patientRole>
    <id extension="12345" root="2.16.840.1.113883.19"/>
    <addr use="H">
      17 King Street<delimiter/>
      <city>Toronto</city>
      <state>ON</state>
      <postalCode>M2K2J1</postalCode>
      <country>CA</country>
    </addr>
    <telecom value="tel:(416)555-1212" use="H"/>
    <patient classCode="PSN" determinerCode="INSTANCE">
      <id root="2.16.840.1.113883.4.20" extension="666112999"/>
      <name use="L">
        <family>Nuclear</family> <given>John</given> <prefix>Mr.</prefix>
        <suffix>II</suffix>
      </name>
      <administrativeGenderCode code="M" codeSystem="2.16.840.1.113883.5.1"
        displayName="Male"/>
      <birthTime value="19441021"/>
      <maritalStatusCode code="M" displayName="Married"
        codeSystem="2.16.840.1.113883.5.2" codeSystemName="MaritalStatusCode"/>
      <guardian classCode="GUARD">
        <addr use="H">
          Unit 20 301 Main Street N<delimiter/>
          <city>Toronto</city>
          <state>ON</state>
          <postalCode>M2K1J2</postalCode>
          <country>CA</country>
        </addr>
        <telecom value="tel:(418)555-1212" use="H"/>
        <guardianPerson classCode="PSN" determinerCode="INSTANCE">
          <name>
            <prefix>Ms.</prefix>
            <given>Susan</given>
            <given qualifier="IN">S</given>
            <family>Script</family>
          </name>
        </guardianPerson>
      </guardian>
    </patient>
    <providerOrganization classCode="ORG" determinerCode="INSTANCE">
      <id root="2.16.840.1.113883.4.284" extension="2121"/>
      <name>Good Health Clinic</name>
      <telecom use="WP" value="tel:(418)555-1212"/>
      <addr>
        <streetAddressLine>21 North Ave</streetAddressLine>
        <city>Mississauga</city>
        <state>ON</state>
        <postalCode>M2J2H2</postalCode>
        <country>CA</country>
      </addr>
    </providerOrganization>
  </patientRole>
</recordTarget>
  
```

Author

The author element represents the creator of the clinical document. The author may be a device, or a person. The Author provides demographic information on the author(s) of the document.

SHALL contain at least one [1..*] `author` and **SHALL NOT** contain `nullFlavor`.

1. **SHALL** contain exactly one [1..1] `@typeCode`
 - a. **SHALL** be fixed to the code `AUTH` from the code system `ParticipationType` having the OID `2.16.840.1.113883.5.90` effective 2013-03-18.
2. **SHALL SUPPORT** up to one [0..1] `functionCode` and **SHALL** comply with the following value set assertion effective 2008-12-17: the set of codes in the expansion of value set `2.16.840.1.113883.2.20.3.87 ParticipationFunction` **STATIC**.
3. **SHALL** contain exactly one [1..1] `contextControlCode` and **SHALL** be fixed to the code `OP` from the code system `ContextControl` having the OID `2.16.840.1.113883.5.1057` effective 2013-03-18.
4. **SHALL** contain exactly one [1..1] `time`.
 - a. This time **SHALL** contain exactly one [1..1] ~~Canadian Realm Date Time Flavour data type~~ `Canadian Realm Date Time Flavour data type`.
5. **SHALL** contain ~~exactly one or more~~ `[1..*].1` `assignedAuthor`.
 - a. **SHALL** contain exactly one [1..1] `@classCode` and **SHALL** be fixed to the code `ASSIGNED` from code system `RoleClass` having the OID `2.16.840.1.113883.5.110` effective 2013-03-18 and **SHALL NOT** contain `nullFlavor`
 - b. **SHALL** contain at least one [1..*] `id`.
 - c. **SHOULD** contain zero or one [0..1] `code` which
 - i. **SHALL** comply with the following value set assertion effective 2012-05-31: the set of codes in the expansion of value set `2.16.840.1.113883.2.20.3.265 ProviderRoleCode` **STATIC**.

Usage note: This is used when the `assignedAuthor` is a person (class `assignedPerson` below). When the `assignedAuthor` is a device (class `assignedAuthoringDevice`), this is currently not coded. In Canadian implementations as of this point in time, the software name (source

system) and the `manufacturerModelName` (the device name) may be provided using SC data type, which means uncoded text may be used. We encourage implementations to come forward with device types for pan-Canadian value set creation.

- d. **SHOULD** contain zero or more [0..*] `addr`
 - i. The content of `addr` **SHALL** be a conformant [Canadian Realm Address Data Type](#).
- e. **SHOULD** contain zero or more [0..*] `telecom`
 - i. The content of `telecom` **SHALL** be a conformant [Canadian Realm Telecom Data Type](#).
- f. This assignedAuthor **SHALL SUPPORT up to one [0..1] representedOrganization.**
 - i. **SHALL** contain exactly one [1..1] `@classCode` and **SHALL** be fixed to the code `ORG` from code system `EntityClass` having the OID `2.16.840.1.113883.5.41` effective 2013-03-18.
 - ii. **SHALL** contain exactly one [1..1] `determinerCode` and **SHALL** be fixed to the code `INSTANCE` from code system `EntityDeterminer` having the OID `2.16.840.1.113883.5.30` effective 2013-03-18.
 - iii. **SHALL** contain at least one [1..*] `id` such that:
 - 1. “If name contains nullFlavor then id SHALL NOT contain nullFlavor” and “If id contains nullFlavor then name SHALL NOT contain nullFlavor”
 - iv. **SHOULD** contain at least one [1..*] `name` such that:
 - 1. “If name contains nullFlavor then id SHALL NOT contain nullFlavor” and “If id contains nullFlavor then name SHALL NOT contain nullFlavor”
 - ii-v. **SHOULD** contain zero or more [0..*] `addr` such that:
 - 1. The content of `addr` **SHALL** be a conformant [Canadian Realm Address data type](#).
 - iii-vi. **SHOULD** contain zero or more [0..*] `telecom` such that:
 - 1. The content of `telecom` **SHALL** be a conformant [Canadian Realm Telecom Data Type](#).

f.g. This assignedAuthor SHALL contain exactly one [1..1] assignedPerson OR assignedAuthoringDevice.

i. If present this assignedPerson

1. **SHALL** contain exactly one [1..1] @classCode

a. **SHALL** be fixed to the code PSN from code system EntityClass having the OID 2.16.840.1.113883.5.41 effective 2013-03-18.

2. **SHALL** contain exactly one [1..1] determinerCode

a. **SHALL** be fixed to the code INSTANCE from code system EntityDeterminer having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.

3. **SHALL** contain at least one [1..*] name ~~which and SHALL NOT contain nullFlavor.~~

a. **SHALL**, when present, conform to the ~~Canadian Realm Personal Name Data Type~~ Canadian Realm Personal Name Data Type.

ii. If present this assignedAuthoringDevice

1. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code DEV from code system EntityClass having the OID 2.16.840.1.113883.5.41 effective 2013-03-18.

2. **SHALL** contain exactly one [1..1] determinerCode

a. **SHALL** be fixed to the code INSTANCE from code system EntityDeterminer having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.

3. **SHALL** contain one [1..1] manufacturerModelName

a. **SHALL** be represented using SC from Data Type Release 1

4. **SHALL** contain one [1..1] softwareName

a. **SHALL** be represented using SC from Data Type Release 1.

Example: Person author with Assigned Person

```
<author typeCode="AUTH" contextControlCode="OP">
  <time value="20120329224411+0500"/>
  <assignedAuthor classCode="ASSIGNED">
    <id extension="42423432" root="2.16.840.1.113883.4.390"/>
    <addr>
      Unit 20 301 Main Street N <delimiter/>
      <city>Vancouver</city>
      <state>BC</state>
      <postalCode>V5K2A1</postalCode>
      <country>CA</country>
    </addr>
    <telecom use="WP" value="tel:(604)555-1003"/>
    <assignedPerson classCode="PSN" determinerCode="INSTANCE">
      <name>
        <given>Henry</given>
        <family>Seven</family>
      </name>
    </assignedPerson>
  </assignedAuthor>
</author>
```

Example: Person author with Assigned Authoring Device

```
<author typeCode="AUTH" contextControlCode="OP">
  <time value="20120329224411+0500"/>
  <assignedAuthor classCode="ASSIGNED">
    <id extension="42423432" root="2.16.840.1.113883.4.390"/>
    <addr>
      Unit 20 301 Main Street N <delimiter/>
      <city>Vancouver</city>
      <state>BC</state>
      <postalCode>V5K2A1</postalCode>
      <country>CA</country>
    </addr>
    <telecom use="WP" value="tel:(604)555-1003"/>
    <assignedAuthoringDevice classCode="DEV" determinerCode="INSTANCE">
      <manufacturerModelName>New Medical Device</manufacturerModelName >
      <softwareName>Medical Device Report Generator</softwareName >
    </ assignedAuthoringDevice >
  </assignedAuthor>
</author>
```

DataEnterer

The dataEnterer element represents the person who transferred the content, written or dictated by someone else, into the clinical document.

SHALL SUPPORT up to one [0..1] dataEnterer.

1. **SHALL** contain exactly one [1..1] `typeCode`
 - a. **SHALL** be fixed to the code ENT from the code system EntityClass having the OID 2.16.840.1.113883.5.41 effective 2013-03-18.
2. **SHALL** contain exactly one [1..1] `contextControlCode`
 - a. **SHALL** be fixed to the code OP from the code system ContextControl having the OID 2.16.840.1.113883.5.1057 effective 2013-03-18.
3. **SHOULD** contain zero or one [0..1] `time`
4. **SHALL SUPPORT** ~~up to exactly~~ one [0..1] `assignedEntity`.
5. **SHALL** contain exactly one [1..1] `@classCode`
 - a. **SHALL** be fixed to the code ASSIGNED from code system RoleClass having the OID 2.16.840.1.113883.5.110 effective 2013-03-18
6. **SHALL** contain at least one [1..*] `id` and SHALL NOT contain nullFlavor.
 - a. The `id` **SHALL** be a conformant II Data Type R1.
7. **SHOULD** contain zero or one [0..1] `code` which
 - a. **SHALL** comply with the following value set assertion effective 2012-05-31: the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.265 ProviderRoleCode **STATIC**.
8. **SHOULD** contain zero or more [0..*] `addr`.
 - a. The content of `addr` **SHALL** be a conformant [Canadian Realm Address Data Type](#).
 - b. ~~**SHOULD** contain zero or more [0..*] `telecom`.~~
9. ~~The content of `telecom` **SHALL** be a conformant [Canadian Realm Telecom Data Type](#).~~ **SHOULD** contain zero or more [0..*] `telecom`.
 - a. The content of `telecom` **SHALL** be a conformant [Canadian Realm Telecom Data Type](#).
10. **SHALL SUPPORT** up to one [0..1] `assignedPerson`.

- a. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code PSN from code system RoleEntityClass having the OID 2.16.840.1.113883.5.1102.16.840.1.113883.5.41 effective 2013-03-18.
- b. **SHALL** contain exactly one [1..1] determinerCode and **SHALL** be fixed to the code INSTANCE from code system EntityDeterminer having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
- c. **SHALL** contain exactly at least one [1..1]..* name and **SHALL NOT** contain NullFlavor or nullFlavor.
 - i. The content of name **SHALL** be a conformant Canadian Realm Personal Name Data Type Canadian Realm Personal Name Data Type.

11. **SHALL SUPPORT** up to one [0..1] representedOrganization.

- a. **SHALL** contain exactly one [1..1] @classCode
 - i. **SHALL** be fixed to the code ORG from code system EntityClass having the OID 2.16.840.1.113883.5.41 effective 2013-03-18
- b. **SHALL** contain exactly one [1..1] determinerCode
 - i. **SHALL** be fixed to the code INSTANCE from code system EntityDeterminer having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
- c. **SHALL** contain exactly at least one [1..1]..* id and **SHALL NOT** be NullFlavor or nullFlavor.
 - i. "If name contains nullFlavor then id SHALL NOT contain nullFlavor" and "If id contains nullFlavor then name SHALL NOT contain nullFlavor"
- d. **SHOULD** contain zero or at least one [0..1]..* name.
 - i. "If name contains nullFlavor then id SHALL NOT contain nullFlavor" and "If id contains nullFlavor then name SHALL NOT contain nullFlavor"
- e. **SHOULD** contain zero or more [0..*] addr.
 - i. The content of addr **SHALL** be a conformant Canadian Realm Address Data Type Canadian Realm Address Data Type.

12. ~~**SHOULD** contain zero or more [0..*] telecom.~~

- a. ~~The content of telecom SHALL be a conformant~~ **SHOULD** contain zero or more [0..*] telecom.

~~i. The content of telecom SHALL be a conformant Canadian Realm Telecom data type.~~

i. Canadian Realm Telecom data type.

Example: dataEnterer

```
<dataEnterer typeCode="ENT" contextControlCode ="OP">
  <assignedEntity classCode="ASSIGNED">
    <id root="2.16.840.1.113883.19.5" extension="43252"/>
    <addr use="H">
      <delimiter>17 Guenette Street</delimiter>
      <city>Montreal</city>
      <state>QC</state>
      <postalCode>H7T3L1</postalCode>
      <country>CA</country>
    </addr>
    <telecom use="H" value="tel:(514)555-1003"/>
    <assignedPerson classCode="PSN" determinerCode ="INSTANCE">
      <name use="L">
        <given>Henry</given>
        <family>Seven</family>
      </name>
    </assignedPerson>
  </assignedEntity>
</dataEnterer>
```

Informant

The informant element describes the source of the information in a medical document.

An informant (or source of information) is a person that provides relevant information, such as the parent of a comatose patient who describes the patient's behaviour.

SHOULD contain zero or more [0..*] **informant**.

1. **SHALL** contain exactly one [1..1] typeCode and **SHALL** be fixed to the code `INF` from the code system `ParticipationType` having the OID 2.16.840.1.113883.5.90 effective 2013-03-18.
2. **SHALL** contain exactly one [1..1] contextControlCode and **SHALL** be fixed to the code `OP` from the code system `ContextControl` having the OID 2.16.840.1.113883.5.1057 effective 2013-03-18.
3. **SHALL** contain exactly one [1..1] **assignedEntity** **OR** exactly one [1..1] **relatedEntity**.

- a. If present, `assignedEntity`
- i. **SHALL** contain exactly one [1..1] `@classCode` and **SHALL** be fixed to the code `ASSIGNED` from code system `RoleClass` having the OID `2.16.840.1.113883.5.110` effective 2013-03-18 and **SHALL NOT** contain `nullFlavor`
 - ii. **SHOULD** contain ~~zero or more~~ at least one [1..*] `id` and **SHALL NOT** contain `nullFlavor`.
 - iii. **SHOULD** contain up to one [0..1] `code` which **SHOULD** comply with the following value set assertion effective 2012-05-31: the set of codes in the expansion of value set `2.16.840.1.113883.2.20.3.265` `ProviderRoleCode` **STATIC**.
 - iv. **SHOULD** contain zero or more [0..*] `addr`.
 1. The content of `addr` **SHALL** be a conformant [Canadian Realm Address Data Type](#).
 - v. **SHOULD** contain zero or more [0..*] `telecom`.
 1. The content of `telecom` **SHALL** be a conformant ~~Canadian Realm Telecom Data Type~~ Canadian Realm Telecom Data Type.
 - vi. **SHALL SUPPORT** up to one [0..1] `assignedPerson`.
 1. **SHALL** contain exactly one [1..1] `@classCode` and **SHALL** be fixed to the code `PSN` from code system `RoleEntityClass` having the OID ~~`2.16.840.1.113883.5.41`~~ `2.16.840.1.113883.5.110` effective 2013-03-18.
 2. **SHALL** contain exactly one [1..1] `determinerCode` and **SHALL** be fixed to the code `INSTANCE` from code system `EntityDeterminer` having the OID `2.16.840.1.113883.5.30` effective 2013-03-18.
 3. **SHALL** contain ~~exactly~~ at least one [1..1] ..* `name` and **SHALL NOT** contain ~~`NullFlavor`~~ `nullFlavor`.
 - a. The content of `name` **SHALL** be a conformant ~~Canadian Realm Personal Name Data Type~~ Canadian Realm Personal Name Data Type.
 - vii. **SHALL SUPPORT** up to one [0..1] `representedOrganization`.

1. **SHALL** contain exactly one [1..1] @classCode
 - a. **SHALL** be fixed to the code `ORG` from code system `EntityClass` having the OID `2.16.840.1.113883.5.41` effective 2013-03-18.
2. **SHALL** contain exactly one [1..1] `determinerCode`
 - a. **SHALL** be fixed to the code `INSTANCE` from code system `EntityDeterminer` having the OID `2.16.840.1.113883.5.30` effective 2013-03-18.
- viii. **SHALL** contain ~~exactly at least~~ one [~~1..1~~].*] `id` and **SHALL NOT** be ~~NullFlavor~~nullFlavor.
 1. "If name contains nullFlavor then id SHALL NOT contain nullFlavor" and "If id contains nullFlavor then name SHALL NOT contain nullFlavor"
- ix. **SHOULD** contain ~~zero or at least~~ one [~~0..1~~].*] `name`.
 1. "If name contains nullFlavor then id SHALL NOT contain nullFlavor" and "If id contains nullFlavor then name SHALL NOT contain nullFlavor"
- x. **SHOULD** contain zero or more [0..*] `addr`.
 1. The content of `addr` **SHALL** be a conformant ~~Canadian Realm Address Data Type~~Canadian Realm Address Data Type.
- xi. **SHOULD** contain zero or more [0..*] `telecom`.
 1. The content of `telecom` **SHALL** be a conformant ~~Canadian Realm Telecom data type~~Canadian Realm Telecom data type.
- b. If present, `relatedEntity`
 - i. **SHALL** contain exactly one [1..1] @classCode
 1. **SHALL** comply with the following value set assertion effective 2013-03-18: the set of codes in the expansion of value set `2.16.840.1.113883.1.11.19316 RoleClassMutualRelationship` **STATIC**.
 - ii. **SHALL SUPPORT** zero or one [0..1] `code`
 1. **SHALL** comply with the following value set assertion effective 2008-12-17: the set of codes in the expansion of value set

2.16.840.1.113883.2.20.3.90 PersonalRelationshipRoleType
STATIC.

iii. **SHOULD** contain zero or more [0..*] **addr**.

1. The content of **addr** **SHALL** be a conformant [Canadian Realm Address data type](#).

iv. **SHOULD** contain zero or more [0..*] **telecom**.

1. The content of **telecom** **SHALL** be a conformant ~~Canadian Realm Telecom data type~~ [Canadian Realm Telecom data type](#).

v. **SHALL SUPPORT** up to one [0..1] **effectiveTime**

1. The content of **effectiveTime** **SHALL** be conformant to [Canadian realm Date and Time data type](#).

vi. **SHALL SUPPORT** up to one [0..1] **relatedPerson**.

1. **SHALL** contain exactly one [1..1] **@classCode** and **SHALL** be fixed to the code PSN from code system ~~RoleEntityClass~~ having the OID ~~2.16.840.1.113883.5.41~~ [2.16.840.1.113883.5.110](#) effective 2013-03-18.
2. **SHALL** contain exactly one [1..1] **determinerCode** and **SHALL** be fixed to the code INSTANCE from code system EntityDeterminer having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
3. **SHALL** contain ~~exactly at least~~ one [1..1] **..*** **name** and **SHALL NOT** contain ~~NullFlavor~~ [nullFlavor](#).
 - a. The content of **name** **SHALL** be a conformant ~~Canadian Realm Personal Name data type~~ [Canadian Realm Personal Name data type](#).

Example: Informant with assignedPerson

```
<informant typeCode="INF" contextControlCode ="OP">
  <assignedEntity>
    <id extension="KP00017" root="2.16.840.1.113883.19.5"/>
    <addr use="H">
      <delimiter>17 St-Germain Street</delimiter>
      <city>Montreal</city>
      <state>QC</state>
      <postalCode>H7T1G2</postalCode>
      <country>CA</country>
    </addr>
    <telecom use="H" value="tel:(514)111-7873"/>
    <assignedPerson classCode="PSN" determinerCode ="INSTANCE">
      <name use="L">
        <given>Henry</given>
        <family>Seven</family>
      </name>
    </assignedPerson>
  </assignedEntity>
</informant>
```

Example: Informant with relatedPerson

```
<informant typeCode="INF" contextControlCode ="OP">
  <assignedEntity>
    <id extension="KP00017" root="2.16.840.1.113883.19.5"/>
    <addr use="H">
      <delimiter>17 St-Germain Street</delimiter>
      <city>Montreal</city>
      <state>QC</state>
      <postalCode>H7T1G2</postalCode>
      <country>CA</country>
    </addr>
    <telecom use="H" value="tel:(514)111-7873"/>
    <relatedPerson classCode="PSN" determinerCode ="INSTANCE">
      <name use="L">
        <given>Jean</given>
        <family>First</family>
      </name>
    </relatedPerson>
  </assignedEntity>
</informant>
```

Custodian

The `custodian` element represents the organization 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 has exactly one custodian.

SHALL contain exactly one [1..1] `custodian` and **SHALL NOT** contain ~~NullFlavor~~nullFlavor.

1. **SHALL** contain exactly one [1..1] `typeCode` and **SHALL** be fixed to the code `CST` from the code system `ParticipationType` having the OID 2.16.840.1.113883.5.90 effective 2013-03-18.

2. **SHALL** contain exactly one [1..1] `assignedCustodian`.
 - a. **SHALL** contain exactly one [1..1] `@classCode` and **SHALL** be fixed to the code ASSIGNED from code system `RoleClass` having the OID 2.16.840.1.113883.5.110 effective 2013-03-18
 - b. **SHALL** contain exactly one [1..1] `representedCustodianOrganization`.
 - i. **SHALL** contain exactly one [1..1] `@classCode` and **SHALL** be fixed to the code ORG from code system `EntityClass` having the OID 2.16.840.1.113883.5.41 effective 2013-03-18.
 - ii. **SHALL** contain exactly one [1..1] `determinerCode` and **SHALL** be fixed to the code INSTANCE from code system `EntityDeterminer` having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
 - iii. **SHALL** contain at least one [1..*] `id` ~~and SHALL NOT be NullFlavor~~
 1. "If name contains nullFlavor then id SHALL NOT contain nullFlavor" and "If id contains nullFlavor then name SHALL NOT contain nullFlavor"
 - iv. **SHALL SUPPORT** up to one [0..1] `name`
 1. "If name contains nullFlavor then id SHALL NOT contain nullFlavor" and "If id contains nullFlavor then name SHALL NOT contain nullFlavor"
 - v. **SHOULD** contain ~~zero or more~~ up to one [0..*].1] `telecom`.
 1. The content of `telecom` **SHALL** be a conformant [Canadian Realm Telecom Data Type](#).
 - vi. **SHOULD** contain ~~zero or more~~ up to one [0..*].1] `addr`.
 1. The content of `addr` **SHALL** be a conformant [Canadian Realm Address Data Type](#).

Example: Custodian

```

<custodian typeCode="CST">
  <assignedCustodian classCode="ASSIGNED">
    <representedCustodianOrganization classCode="ORG" determinerCode="INSTANCE">
      <id root="2.16.840.1.113883.19.5"/>
      <name>Health Clinic</name>
      <telecom value="tel:(418)555-1212" use="WP"/>
      <addr use="WP">
        17 King Street
        <city>Toronto</city>
        <state>ON</state>
        <postalCode>M2K2J1</postalCode>
        <country>CA</country>
      </addr>
    </representedCustodianOrganization>
  </assignedCustodian>
</custodian>
  
```

InformationRecipient

The `informationRecipient` element records the intended recipient of the information at the time the document is created.

SHALL SUPPORT zero or more [0..*] `informationRecipient`.

1. **SHALL** contain exactly one [1..1] `typeCode` and **SHALL** comply with the following value set assertion, effective 2013-03-18: the set of codes in the expansion of value set 2.16.840.1.113883.1.11.19366 `x_InformationRecipient` **STATIC**.
2. **SHALL** contain exactly one [1..1] `intendedRecipient`.
 - a. **SHALL** contain exactly one [1..1] `@classCode` and **SHALL** be fixed to the code `ASSIGNED` from code system `RoleClass` having the OID 2.16.840.1.113883.5.110 effective 2013-03-18 and **SHALL NOT** contain nullFlavor.
 - b. **SHALL SUPPORT** zero or more [0..*] `id`
 - c. **SHOULD** contain zero or more [0..*] `telecom`.
 - i. The content of `telecom` **SHALL** be a conformant [Canadian Realm Telecom Data Type](#).
 - d. **SHOULD** contain zero or more [0..*] `addr`.
 - i. The content of `addr` **SHALL** be a conformant Canadian Realm Address Data Type.

- e. This intendedRecipient **SHALL SUPPORT** up to one [0..1] informationRecipient
- i. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code PSN from code system RoleEntityClass having the OID 2.16.840.1.113883.5.412.16.840.1.113883.5.110 effective 2013-03-18
 - ii. **SHALL** contain exactly one [1..1] determinerCode and **SHALL** be fixed to the code INSTANCE from code system EntityDeterminer having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
 - iii. **SHALL** contain at least one [1..*] name and SHALL NOT be nullFlavor
 1. The content of name **SHALL** conform to the Canadian Realm Personal Name Data Type Canadian Realm Personal Name Data Type.
 - iv. This intendedRecipient **SHALL SUPPORT** up to one [0..1] receivedOrganization.
 1. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code ORG from code system EntityClass having the OID 2.16.840.1.113883.5.41 effective 2013-03-18.
 2. **SHALL** contain exactly one [1..1] determinerCode and **SHALL** be fixed to the code INSTANCE from code system EntityDeterminer having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
 3. **SHALL SUPPORT** ~~zero or more~~ [at least one [1..*] id
 - a. “If name contains nullFlavor then id SHALL NOT contain exactly nullFlavor” and “If id contains nullFlavor then name SHALL NOT contain nullFlavor”
 4. SHALL contain at least one [1..1],..*] name
 - a. The content of name **SHALL** conform to the Organization Name Data Type R1.
 - b. “If name contains nullFlavor then id SHALL NOT contain nullFlavor” and “If id contains nullFlavor then name SHALL NOT contain nullFlavor”
 5. **SHOULD** contain zero or more [0..*] telecom.
 - a. The content of telecom **SHALL** be a conformant Canadian Realm Telecom Data Type.

6. **SHOULD** contain zero or more [0..*] `addr`.

- a. The content of telecom **SHALL** be a conformant [Canadian Realm Address Data Type](#) ~~Canadian Realm Address Data Type~~.

Example: informationRecipient

```
<informationRecipient typeCode="PRCP">
  <intendedRecipient classCode="ASSIGNED">
    <informationRecipient classCode="PSN" determinerCode="INSTANCE">
      <name>
        <given>Henry</given>
        <family>Seven</family>
      </name>
    </informationRecipient>
    <receivedOrganization classCode="ORG" determinerCode="INSTANCE">
      <name>Good Health Hospital</name>
    </receivedOrganization>
  </intendedRecipient>
</informationRecipient>
```

LegalAuthenticator

The `legalAuthenticator` identifies the person who has legally authenticated the document.

SHOULD contain up to one [0..1] `legalAuthenticator`.

1. **SHALL** contain exactly one [1..1] `typeCode` and **SHALL** be fixed to the code `LA` from the code system `ParticipationType` having the OID 2.16.840.1.113883.5.90 effective 2013-03-18.
2. **SHALL** contain exactly one [1..1] `contextControlCode` and **SHALL** be fixed to the code `OP` from the code system `ContextControl` having the OID 2.16.840.1.113883.5.1057 effective 2013-03-18.
3. **SHALL** contain exactly one [1..1] `time`.
 - a. The content of time **SHALL** be a conformant [Canadian Realm Date and Time data type](#) ~~Canadian Realm Date and Time data type~~.
4. **SHALL** contain exactly one [1..1] `signatureCode`.
 - a. **SHALL** contain exactly one [1..1] `signatureCode` and **SHALL** be fixed to the code `s` from the code system `Participationsignature` having the OID 2.16.840.1.113883.5.89 effective 2013-03-18
5. **SHALL SUPPORT** ~~up to exactly~~ one [~~0~~1..1] `assignedEntity`.

- a. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code ASSIGNED from code system RoleClass having the OID 2.16.840.1.113883.5.110 effective 2013-03-18
- b. **SHALL** contain at least one [1..*] id and **SHALL NOT** contain nullFlavor.
 - i. The id **SHALL** be a conformant II Data Type R1.
- c. **SHOULD** contain up to one [0..1] code and **SHALL** comply with the following value set assertion effective 2012-05-31: the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.265 ProviderRoleCode **STATIC**.
- d. **SHALL** contain zero or more [0..*] addr.
 - i. The content of addr **SHALL** be a conformant [Canadian Realm Address Data Type](#).
- e. **SHALL SUPPORT** zero or more [0..*] telecom.
 - i. The content of telecom **SHALL** be a conformant [Canadian Realm Telecom Data Type](#).
- f. **SHALL SUPPORT** up to one [0..1] assignedPerson.
 - i. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code PSN from code system RoleEntityClass having the OID [2.16.840.1.113883.5.1102.16.840.1.113883.5.41](#) effective 2013-03-18
 - ii. **SHALL** contain exactly one [1..1] determinerCode and **SHALL** be fixed to the code INSTANCE from code system EntityDeterminer having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
 - iii. **SHALL** contain at least one [1..*] name and **SHALL NOT** contain ~~NullFlavor~~[nullFlavor](#).
 - 1. The content of name **SHALL** be a conformant [Canadian Realm Personal Name Data Type](#).
- g. **SHALL SUPPORT** contain zero or one [0..1] representedOrganization.
 - i. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code ORG from code system EntityClass having the OID 2.16.840.1.113883.5.41 effective 2013-03-18.

- ii. **SHALL** contain exactly one [1..1] **determinerCode** and **SHALL** be fixed to the code INSTANCE from code system `EntityDeterminer` having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
- iii. **SHALL** contain ~~exactly~~ at least one [1..1]..*] **id** and **SHALL NOT** be ~~NullFlavor~~ nullFlavor.
 - 1. “If name contains nullFlavor then id SHALL NOT contain nullFlavor” and “If id contains nullFlavor then name SHALL NOT contain nullFlavor”
- iv. **SHOULD** contain ~~zero or more~~ at least one [1..*] **name**
 - 1. “If name contains nullFlavor then id SHALL NOT contain nullFlavor” and “If id contains nullFlavor then name SHALL NOT contain nullFlavor”
- v. **SHOULD** contain zero or more [0..*] **addr**
 - 1. The content of **addr** **SHALL** be a conformant Canadian Realm Address Data Type ~~Canadian Realm Address Data Type~~.
- ~~i. **SHOULD** contain zero or more [0..*] **telecom**~~
 - ~~2. The content of **telecom** **SHALL** be a conformant Canadian Realm Telecom data type.~~
- vi. **SHOULD** contain zero or more [0..*] **telecom**.
 - 1. The content of **telecom** **SHALL** be a conformant Canadian Realm Telecom data type.

Example: legalAuthenticator

```

<legalAuthenticator typeCode="LA" contextControlCode="OP">
  <time value="201210251223+0500"/>
  <signatureCode code="S"/>
  <assignedEntity classCode="ASSIGNED">
    <id root="2.16.840.1.113883.19.5" extension="43252"/>
    <addr use="H">
      17 Guenette Street<delimiter/>
      <city>Montreal</city>
      <state>QC</state>
      <postalCode>H7T3L1</postalCode>
      <country>CA</country>
    </addr>
    <telecom use="H" value="tel:(514)555-1003"/>
    <assignedPerson classCode="PSN" determinerCode="INSTANCE">
      <name use="L">
        <given>Henry</given>
        <family>Seven</family>
      </name>
    </assignedPerson>
  </assignedEntity>
</legalAuthenticator>
  
```

Authenticator

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

SHOULD contain zero or more [0..*] `authenticator`.

2. **SHALL** contain exactly one [1..1] `typeCode` and **SHALL** be fixed to the code `AUTHEN` from the code system `ParticipationType` having the OID 2.16.840.1.113883.5.90 effective 2013-03-18.

3. **SHALL** contain exactly one [1..1] `time`.

a. The content of `time` **SHALL** be a conformant [Canadian Realm Date and Time data type](#) `Canadian Realm Date and Time data type`.

4. **SHALL** contain exactly one [1..1] `signatureCode`.

i. **SHALL** contain exactly one [1..1] `signatureCode` and **SHALL** be fixed to the code `S` from the code system `Participationsignature` having the OID 2.16.840.1.113883.5.89 effective 2013-03-18.

5. **SHALL SUPPORT** ~~zero or more [0..*]~~**exactly one [1..1]** `assignedEntity`.

- a. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code ASSIGNED from code system RoleClass having the OID 2.16.840.1.113883.5.110 effective 2013-03-18
- b. **SHALL** contain at least one [1..*] id and SHALL NOT contain nullFlavor.
 - i. The id **SHALL** be a conformant II Data Type R1.
- c. **SHOULD** contain up to one [0..1] code and **SHALL** comply with the following value set assertion effective 2012-05-31: the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.265 ProviderRoleCode **STATIC**.
- d. **SHOULD** contain zero or more [0..*] addr.
 - i. The content of addr **SHALL** be a conformant [Canadian Realm Address data type](#).
- e. **SHOULD** contain zero or more [0..*] Telecom.
 - i. The content of telecom **SHALL** be a conformant ~~Canadian Realm Telecom data type~~[Canadian Realm Telecom data type](#).
- f. **SHALL SUPPORT** up to one [0..1] assignedPerson.
 - i. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code PSN from code system ~~RoleEntityClass~~ having the OID ~~2.16.840.1.113883.5.41~~~~2.16.840.1.113883.5.110~~ effective 2013-03-18
 - ii. **SHALL** contain exactly one [1..1] determinerCode and **SHALL** be fixed to the code INSTANCE from code system EntityDeterminer having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
 - iii. **SHALL** contain at least one [1..*] name and **SHALL NOT** contain ~~NullFlavor~~[nullFlavor](#).
 - 1. The content of name **SHALL** be a conformant ~~Canadian Realm Personal Name data type~~[Canadian Realm Personal Name data type](#).
- g. **SHALL SUPPORT** up to one [0..1] representedOrganization.
 - i. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code ORG from code system EntityClass having the OID 2.16.840.1.113883.5.41 effective 2013-03-18.

- ii. **SHALL** contain exactly one [1..1] **determinerCode** and **SHALL** be fixed to the code INSTANCE from code system EntityDeterminer having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
- iii. **SHALL** contain exactly at least one [1..1]..*] **id** and **SHALL NOT** be ~~NullFlavor~~nullFlavor.
 - 1. “If name contains nullFlavor then id SHALL NOT contain nullFlavor” and “If id contains nullFlavor then name SHALL NOT contain nullFlavor”
- iv. **SHOULD** contain at least one [1..*] **name**.
 - 1. “If name contains nullFlavor then id SHALL NOT contain nullFlavor” and “If id contains nullFlavor then name SHALL NOT contain nullFlavor”
- ~~iv.v.~~ **SHOULD** contain zero or more [0..*] ~~name~~addr.
 - 1. The content of addr SHALL be a conformant Canadian Realm Address data type.
- ~~v.vi.~~ **SHOULD** contain zero or more [0..*] ~~telecom~~.
 - i. The content of telecom SHALL be a conformant ~~SHOULD~~ ~~contain zero or more [0..*] addr~~.
 - 1. ~~The content of addr SHALL be a conformant Canadian Realm Address data type.~~
 - ii. ~~SHOULD~~ ~~contain zero or more [0..*] telecom~~.
 - 2. ~~The content of telecom SHALL be a conformant Canadian Realm Telecom data type.~~
 - 1. Canadian Realm Telecom data type.

Example: Authenticator

```

<authenticator typeCode="AUTHEN">
  <time value="20120329100543+0500"/>
  <signatureCode code="S"/>
  <assignedEntity classCode="ASSIGNED">
    <id root="2.16.840.1.113883.19.5" extension="43252"/>
    <addr use="H">
      17 Guenette Street<delimiter/>
      <city>Montreal</city>
      <state>QC</state>
      <postalCode>H7T3L1</postalCode>
      <country>CA</country>
    </addr>
    <telecom use="H" value="tel:(514)555-1003"/>
    <assignedPerson classCode="PSN" determinerCode="INSTANCE">
      <name use="L">
        <given>Henry</given>
        <family>Seven</family>
      </name>
    </assignedPerson>
  </assignedEntity>
</authenticator>
  
```

Participant (Support)

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

SHOULD contain zero or more [0..*] `participant`.

2. **SHALL** contain exactly one [1..1] `typeCode` and **SHALL** comply with the following value set assertion effective 2013-03-18: the set of codes in the expansion of value set 2.16.840.1.113883.1.11.10901 `ParticipationType` **STATIC**.
3. **SHALL** contain exactly one [1..1] `contextControlCode` and **SHALL** be fixed to the code `OP` from the code system `ContextControl` having the OID 2.16.840.1.113883.5.1057 effective 2013-03-18.
4. **SHALL SUPPORT** up to one [0..1] `functionCode` and **SHALL** comply with the following value set assertion effective 2008-12-17: the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.87 `ParticipationFunction` **STATIC**.
5. **SHOULD** contain [0..1] `time`.
 - a. This time **SHALL** conform to [Canadian Realm Date and Time Data Type](#) **Canadian Realm Date and Time Data Type**.

6. **SHALL SUPPORT** ~~up to exactly~~ one [0..1] **associatedEntity**.
- a. **SHALL** contain exactly one [1..1] **@classCode** and **SHALL** comply with the following value set assertion, effective 2013-03-18: - the set of codes in the expansion of value set 2.16.840.1.113883.1.11.19313 **RoleClassAssociative** **STATIC**.
 - b. **SHALL SUPPORT** zero ore more [0..*] **id**.
 - i. The id **SHALL** be a conformant II Data Type R1.
 - c. **SHALL SUPPORT** contain zero or one [0..1] **code** which
 - i. **SHALL** comply with the following value set assertion effective 2013-03-18: the set of codes in the expansion of value set **RoleCode** **STATIC**.
 - d. **SHALL SUPPORT** zero or more [0..*] **addr**.
 - i. The content of addr **SHALL** be a conformant [Canadian Realm Address Data Type](#).
 - e. **SHALL SUPPORT** zero or up [0..*] **telecom**.
 - i. The content of telecom **SHALL** be a conformant ~~Canadian Realm Telecom Data Type~~
[Canadian Realm Telecom Data Type](#)
 - f. **SHALL SUPPORT** up to one [0..1] **associatedPerson**.
 - i. **SHALL** contain exactly one [1..1] **@classCode** and **SHALL** be fixed to the code PSN from code system ~~RoleEntityClass~~ having the OID ~~2.16.840.1.113883.5.412.16.840.1.113883.5.110~~ effective 2013-03-18.
 - ii. **SHALL** contain exactly one [1..1] **determinerCode** and **SHALL** be fixed to the code INSTANCE from code system **EntityDeterminer** having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
 - iii. **SHALL** contain ~~exactly at least~~ one [1..*] **name** and **SHALL NOT** contain ~~NullFlavor~~
~~nullFlavor~~.
 1. The content of name **SHALL** be a conformant ~~Canadian Realm Personal Name Data Type~~
[Canadian Realm Personal Name Data Type](#).
 - g. **SHALL SUPPORT** up to one [0..1] **scopingOrganization**.
 - i. **SHALL** contain exactly one [1..1] **@classCode**

1. **SHALL** be fixed to the code `ORG` from code system `EntityClass` having the OID `2.16.840.1.113883.5.41` effective 2013-03-18.
- ii. **SHALL** contain exactly one `[1..1]` **determinerCode**
 1. **SHALL** be fixed to the code `INSTANCE` from code system `EntityDeterminer` having the OID `2.16.840.1.113883.5.30` effective 2013-03-18.
- iii. **SHALL** contain exactly at least one `[1..1]..*` **id** and **SHALL NOT** be ~~NullFlavor~~nullFlavor.
- ~~iv. **SHOULD** contain zero or one `[0..1]` **name**.~~
- ~~v. **SHOULD** contain zero or more `[0..*]` **addr**.
 1. ~~The content of **addr** **SHALL** be a conformant Canadian Realm Address Data Type.~~
 1. "If name contains nullFlavor then id SHALL NOT contain nullFlavor" and "If id contains nullFlavor then name SHALL NOT contain nullFlavor"~~
- ~~vi. **SHOULD** contain zero or more `[0..*]` **telecom** at least one `[1..*]` **name**.
 1. "If name contains nullFlavor then id SHALL NOT contain nullFlavor" and "If id contains nullFlavor then name SHALL NOT contain nullFlavor"~~
- ~~vii. **SHOULD** contain zero or more `[0..*]` **addr**.
 1. The content of **addr** **SHALL** be a conformant Canadian Realm Address Data Type.~~
- ~~viii. **SHOULD** contain zero or more `[0..*]` **telecom**.
 1. ~~The content of **telecom** **SHALL** be a conformant The content of telecom **SHALL** be a conformant Canadian Realm Telecom data type.~~
 1. Canadian Realm Telecom data type.~~

Example: Participant example for a supporting person

```

<participant typeCode= »IND » contextControlCode= »OP »>
  <associatedEntity classCode="NOK">
    <code code="MTH" codeSystem="2.16.840.1.113883.5.111"/>
    <addr>
      7 King Street<delimiter/>
      <city>Toronto</city>
      <state>ON</state>
      <postalCode>M2K2J1</postalCode>
      <country>CA</country>
    </addr>
    <telecom value="tel:(416)123-2012" use="WP"/>
    <associatedPerson>
      <name>
        <prefix>Mrs.</prefix>
        <given>Martha</given>
        <family>Fuella</family>
      </name>
    </associatedPerson>
  </associatedEntity>
</participant>
  
```

RelatedDocument

The `relatedDocument` element represents documents that are related to this document.

SHOULD contain zero or more [0..*] `relatedDocument`.

1. **SHALL** contain exactly one [1..1] `typeCode` and **SHALL** comply with the following value set assertion effective 2013-03-18: the set of codes in the expansion of value set

2.16.840.1.113883.1.11.11610 x_ActRelationshipDocument **STATIC**

2. **SHOULD** contain exactly one [1..1] `ParentDocument`.

I. **SHALL** contain exactly one [1..1] `@classCode` and **SHALL** be fixed to the code `DOCCLIN` from the code system `ActClass` having the OID 2.16.840.1.113883.5.6 effective 2013-03-18

I.II. **SHALL** contain exactly one [1..1] `@moodCode` and **SHALL** be fixed to the code `EVN` (event) from the code system `ActMood` having the OID 2.16.840.1.113883.5.1001 effective 2013-03-18.

III. **SHALL** contain at least one [1..*] `id`.

IV. **SHOULD** contain zero or one [0..1] `code`

i. **SHALL** comply with the following value set assertion, effective 2013-03-18: set of codes from `ActCode` **STATIC**.

V. **SHOULD** contain zero or one [0..1] **text** represented using ED from Data Type Release 1

VI. **SHOULD** contain zero or one [0..1] **setId** represented using II from Data Type Release 1

VII. **SHOULD** contain zero or one [0..1] **versionNumber**

InFulfillmentOf

The `inFulfillmentOf` element represents orders that are fulfilled by this document.

SHOULD contain zero or more [0..*] `inFulfillmentOf`.

2.3. **SHALL** contain exactly one [1..1] `typeCode` and **SHALL** be fixed to the code `FLFS` from the code system `ActRelationshipType` having the OID 2.16.840.1.113883.5.1002 effective 2013-03-18

3.4. **SHOULD** contain ~~zero or more [0..*]~~exactly one [1..1] `order`.

I. **SHALL** contain exactly one [1..1] `@classCode` and **SHALL** comply with the following value set assertion, effective 2013-03-18: - the set of codes in the expansion of value set 2.16.840.1.113883.1.11.11527 `ActClassRoot` **STATIC**

II. **SHALL** contain exactly one [1..1] `@moodCode` and **SHALL** be fixed to the code `RQO` from the code system `ActMood` having the OID 2.16.840.1.113883.5.1001 effective 2013-03-18.

III. **SHALL** contain at least one [1..*] `id`.

IV. **SHOULD** contain zero or one [0..1] `code`

i. **SHALL** comply with the following value set assertion, effective 2013-03-18: set of codes from `ActCode` **STATIC**.

V. **SHOULD** contain zero or one [0..1] `priorityCode` and **SHALL** comply with the following value set assertion, effective 2008-12-17: - the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.15 `ActPriority` **STATIC**

Example: Order Fulfillment entry

```
<inFulfillmentOf typeCode="FLFS">
  <order classCode="ENC" moodCode="RQO">
    <id extension="Request1" root="TBD" assigningAuthorityName="Health Centre"/>
    <priorityCode code="A" codeSystem="2.16.840.1.113883.1.11.16866" codeSystemName="HL7
Act Priority" displayName="ASAP"/>
  </order>
</inFulfillmentOf>
```

DocumentationOf/serviceEvent

A serviceEvent represents the main act, such as a colonoscopy or a cardiac stress study, being documented.

SHOULD contain zero or more [0..*] documentationOf.

1. **SHALL** contain exactly one [1..1] typeCode and **SHALL** be fixed to the code DOC from the code system ActClassActRelationshipType having the OID 2.16.840.1.113883.5.61002 effective 2013-03-18.
2. **SHALL** contain exactly one ~~or more~~ [1..*].1] serviceEvent.

- a. **SHALL** contain exactly one [1..1] @classCode and **SHALL** comply with the following value set assertion, effective 2013-03-18: - the set of codes in the expansion of value set 2.16.840.1.113883.1.11.11527 ActClass13856 ActClassRoot **STATIC**

VI. ~~**SHALL** contain exactly one [1..1] @moodCode and **SHALL** be fixed to the code EVN (event) from the code system ActMood having the OID 2.16.840.1.113883.5.1001 effective 2013-03-18.~~

- b. **SHALL** contain exactly one [1..1] @moodCode and **SHALL** be fixed to the code EVN (event) from the code system ActMood having the OID 2.16.840.1.113883.5.1001 effective 2013-03-18.

~~b.c.~~ **SHOULD** contain zero or more [0..*] id.

~~c.d.~~ **SHOULD** contain zero or one [0..1] code

- i. **SHOULD** comply with the following value set assertion, effective 2013-03-18: set of codes from ActCode **STATIC**.

~~d.e.~~ **SHOULD** contain up to one [0..1] effectiveTime.

- i. The content **SHALL** conform to the Canadian Realm Date Time Data Type Canadian Realm Date Time Data Type.

e-f. **SHOULD** contain zero or more [0..*] **performer**

- i. The content **SHALL** contain one [1..1] **typeCode** and **SHALL** comply with the following value set assertion effective 2013-03-18: the set of codes in the expansion of value set 2.16.840.1.113883.1.11.19601
x_ServiceEventPerformer **STATIC**.
- ii. **SHOULD** contain up to one [0..1] **functionCode** and **SHALL** comply with the following value set assertion effective 2008-12-17: the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.87
ParticipationFunction **STATIC**.
- iii. **SHOULD** contain ~~zero or more~~ up to one [0..*].1] **time**
 1. The content **SHALL** be a conformant ~~Canadian Realm interval date time Data Type~~ Canadian Realm interval date time Data Type.
- iv. ~~SHOULD~~ **SHALL** contain ~~zero or more~~ [0..*] exactly one [1..1] **assignedEntity**.
 1. **SHALL** contain exactly one [1..1] **@classCode** and **SHALL** be fixed to the code ASSIGNED from code system RoleClass having the OID 2.16.840.1.113883.5.110 effective 2013-03-18 and **SHALL NOT** contain nullFlavor
 2. **SHALL** contain at least one [1..*] **id** and **SHALL NOT** contain ~~NullFlavor~~ nullFlavor.
 3. **SHOULD** contain up to one [0..1] **code** and **SHALL** comply with the following value set assertion effective 2012-05-31: the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.265
ProviderRoleCode **STATIC**.
 4. **SHOULD** contain zero or more if available [0..*] **addr**
 - a. The content of **addr** **SHALL** be a conformant Canadian Realm Address data type.
 5. **SHOULD** contain zero or more [0..*] **telecom**
 - a. The content of **telecom** **SHALL** be a conformant ~~Canadian Realm Telecom data type~~ Canadian Realm Telecom data type.
 6. **SHALL SUPPORT** up to one [0..1] **assignedPerson**.

- a. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code PSN from code system RoleEntityClass having the OID 2.16.840.1.113883.5.412.16.840.1.113883.5.110 effective 2013-03-18.
- b. **SHALL** contain exactly one [1..1] determinerCode and **SHALL** be fixed to the code INSTANCE from code system EntityDeterminer having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
- c. **SHALL** contain exactly at least one [1..1]..*] name and **SHALL NOT** be nullFlavor
 - i. The content of name **SHALL** conform to the Canadian Realm Personal Name data type Canadian Realm Personal Name data type.

7. **SHALL SUPPORT** up to one [0..1] representedOrganization.

- a. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code ORG from code system EntityClass having the OID 2.16.840.1.113883.5.41 effective 2013-03-18.
- b. **SHALL** contain exactly one [1..1] determinerCode and **SHALL** be fixed to the code INSTANCE from code system EntityDeterminer having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
- c. **SHALL** contain exactly at least one [1..1]..*] id.
 - i. “If name contains nullFlavor then id SHALL NOT contain nullFlavor” and “If id contains nullFlavor then name SHALL NOT contain nullFlavor”
- d. **SHOULD** contain at least one [1..*] name.
 - i. “If name contains nullFlavor then id SHALL NOT contain nullFlavor” and “If id contains nullFlavor then name SHALL NOT contain nullFlavor”

5. **SHOULD** contain zero or ~~one more~~ [0..1] ~~name~~.

- iii. ~~**SHOULD** contain zero or more [0..*] addr such that:~~

- ~~i. The content of addr **SHALL** be a conformant Canadian Realm Address data type.~~
- iv. ~~**SHOULD** contain zero or more [0..*] telecom such that:~~
 - ~~ii. The content of telecom **SHALL** be a conformant Canadian Realm Telecom Data Type.~~
- ~~e. ..*] addr such that:~~
 - ~~i. The content of addr **SHALL** be a conformant Canadian Realm Address data type.~~
- f. ~~**SHOULD** contain zero or more [0..*] telecom such that:~~
 - ~~i. The content of telecom **SHALL** be a conformant Canadian Realm Telecom Data Type.~~

Example : DocumentationOf

```

<documentationOf typeCode="DOC">
  <serviceEvent classCode="ACT">
    <id root="1.2.840.113619.2.62.994044785528.114289542805"/>
    <id extension="123453" root="1.2.840.113619.2.62.994044785528.26"/>
    <code code="93041"
      displayName="Rhythm ECG, one to three leads; tracing only without
      interpretation and report"
      codeSystem="2.16.840.1.113883.6.12"
      codeSystemName="CPT4"/>
    <effectiveTime>
      <low value="20080813222400"/>
      <high value="20110213212200"/>
    </effectiveTime>
    <performer typeCode="PRF">
      <templateId root="2.16.840.1.113883.10.20.6.2.1"/>
      <assignedEntity>
        <id extension="121008" root="2.16.840.1.113883.19.5"/>
        <code code="208D00000X" codeSystem="2.16.840.1.113883.6.101"
          codeSystemName="NUCC"
          displayName="General Practice"/>
        <addr nullFlavor="NI"/>
        <telecom nullFlavor="NI"/>
        <assignedPerson>
          <name>
            <given>Matthew</given>
            <family>Care</family>
            <suffix>MD</suffix>
          </name>
        </assignedPerson>
      </assignedEntity>
    </performer>
  </serviceEvent>
</documentationOf>
  
```

Authorization/consent

The header can record information about the patient's consent. The Authorization & Consent provides information regarding the consents associated with this document.

SHOULD contain zero or more [0..*] **authorization**.

1. **SHALL** contain exactly one [1..1] **typeCode** and **SHALL** be fixed to the code AUTH from the code system ParticipationType having the OID 2.16.840.1.113883.5.90 effective 2013-03-18.
2. **SHOULD** contain ~~zero or more [0..*]~~**exactly one [1..1] consent**.
 - a. **SHALL** contain exactly one [1..1] **@classCode** and **SHALL** be fixed to the code CONS from the code system ActClass having the OID 2.16.840.1.113883.5.6 effective 2013-03-18.

- b. **SHALL** contain exactly one [1..1] @moodCode and **SHALL** be fixed to the code EVN from the code system ActMood having the OID 2.16.840.1.113883.5.1001 effective 2013-03-18.
- c. **SHOULD** contain zero or more [0..*] id.
 - i. **SHOULD** contain zero or one [0..1] code and **SHALL** comply with the following value set assertion, effective 2008-12-17: the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.6 ActConsentType
STATIC
 - ii. **SHALL** contain exactly one [1..1] statusCode and **SHALL** be fixed to the code COMPLETED from the code system ActStatus having the OID 2.16.840.1.113883.5.14 effective 2013-03-18

Example: Procedure Note consent

```

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

ComponentOf

The componentOf element is used to wrap the encompassing encounter for this document. The encompassing encounter represents the setting of the clinical encounter during which the document act(s) or ServiceEvent occurred.

SHOULD contain ~~zero or more~~ up to one [0..*].1 componentOf.

1. **SHALL** contain exactly one [1..1] typeCode and **SHALL** be fixed to the code COMP from the code system ActRelationshipType having the OID 2.16.840.1.113883.5.1002 effective 2013-03-18.
2. **SHALL SUPPORT** ~~up to exactly~~ one [0].1 encompassingEncounter.
 - a. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code ENC from the code system ActClass having the OID 2.16.840.1.113883.5.1002 effective 2013-03-18.

- b. **SHALL** contain exactly one [1..1] @moodCode and **SHALL** be fixed to the code EVN (event) from the code system ActMood having the OID 2.16.840.1.113883.5.1001 effective 2013-03-18.
- c. **SHALL SUPPORT** zero or more [0..1].* id.
- d. **SHALL SUPPORT** up to one [0..1] code and **SHALL** comply with the following value set assertion, effective 2008-12-17: the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.2 ActCareEventType **STATIC**
- e. **SHALL** contain exactly one [1..1] effectiveTime and **SHALL NOT** contain ~~NullFlavor~~ nullFlavor
 - i. The content **SHALL** be a conformant Canadian Realm Date Time Interval data type Canadian Realm Date Time Interval data type.
- f. **SHOULD** contain up to one [0..1] dischargeDispositionCode and **SHALL** comply with the following value set assertion, effective 2008-12-17: the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.43 EncounterDischargeDisposition **STATIC**
- g. **SHALL SUPPORT** zero or more [0..*] encounterParticipant.
 - i. **SHALL** contain exactly one [1..1] typeCode and **SHALL** comply with the following value set assertion effective 2013-03-18: the set of codes in the expansion of value set 2.16.840.1.113883.1.11.19600 x_EncounterParticipant **STATIC**.
 - ii. **SHOULD** contain zero or one [0..1] ~~effectiveTime~~ effectiveTime.
 - 1. The content **SHALL** be a conformant Canadian Realm Date Time Interval data type Canadian Realm Date Time Interval data type.
 - iii. **SHALL** contain exactly one [1..1] assignedEntity.
 - 1. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code ASSIGNED from code system RoleClass having the OID 2.16.840.1.113883.5.110 effective 2013-03-18 and **SHALL NOT** contain nullFlavor
 - 2. **SHALL** contain exactly at least one [1..1].* id and **SHALL NOT** contain nullFlavor.
 - a. The id/@root **SHALL** represent the assigned authority.

3. **SHOULD** contain zero or one [0..1] `code` which
 - a. **SHALL** comply with the following value set assertion effective 2012-05-31: the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.265 `ProviderRoleCode` **STATIC**.
4. **SHOULD** contain zero or more [0..*] `addr`
 - a. The content of `addr` **SHALL** be a conformant [Canadian Realm Address data type](#).
5. **SHOULD** contain zero or more [0..*] `telecom`
 - a. The content of `telecom` **SHALL** be a conformant [Canadian Realm Telecom data type](#).
6. **SHALL SUPPORT** up to one [0..1] `representedOrganization`.
 - a. **SHALL** contain exactly one [1..1] `@classCode` and **SHALL** be fixed to the code `ORG` from code system `EntityClass` having the OID 2.16.840.1.113883.5.41 effective 2013-03-18.
 - b. **SHALL** contain exactly one [1..1] `determinerCode` and **SHALL** be fixed to the code `INSTANCE` from code system `EntityDeterminer` having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
 - c. **SHALL** contain at least one [1..*] `id`.
 - i. “If name contains `nullFlavor` then `id` SHALL NOT contain `nullFlavor`” and “If `id` contains `nullFlavor` then name SHALL NOT contain `nullFlavor`”
 - d. **SHOULD** contain at least one [1..*] `name`.
 - i. “If name contains `nullFlavor` then `id` SHALL NOT contain `nullFlavor`” and “If `id` contains `nullFlavor` then name SHALL NOT contain `nullFlavor`”
 - e. **SHOULD** contain zero or more [0..*] `addr` such that:
 - i. The content of `addr` **SHALL** be a conformant [Canadian Realm Address data type](#).
 - f. **SHOULD** contain zero or more [0..*] `telecom` such that:

1. The content of telecom **SHALL** be a conformant Canadian Realm Telecom Data Type

~~6-7.~~ **SHALL SUPPORT** up to one [0..1] `assignedPerson`.

- a. **SHALL** contain exactly one [1..1] `@classCode` and **SHALL** be fixed to the code `PSN` from code system `RoleEntityClass` having the OID ~~2.16.840.1.113883.5.412.16.840.1.113883.5.110~~ effective 2013-03-18.
- b. **SHALL** contain exactly one [1..1] `determinerCode` and **SHALL** be fixed to the code `INSTANCE` from code system `EntityDeterminer` having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
- c. **SHALL** contain ~~exactly~~ at least one [1..*] `name` and **SHALL NOT** contain ~~NullFlavor~~ nullFlavor.
 - i. The content of name **SHALL** conform to the Canadian Realm Personal Name data type ~~Canadian Realm Personal Name data type~~.

h. **SHALL SUPPORT** up to one [0..1] `responsibleParty` .

- i. **SHALL** contain exactly one [1..1] `typeCode` and **SHALL** be fixed to the code `RESP` from the code system `ParticipationType` having the OID 2.16.840.1.113883.5.90 effective 2013-03-18.
- ii. **SHALL** contain exactly one [1..1] `assignedEntity` and **SHALL** comply with the following value set assertion effective 2012-05-31: the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.265 `ProviderRoleCode` `STATIC`.
- iii. ~~**SHALL** contain exactly one [1..1] `typeCode` and **SHALL** be fixed to the code `RESP` from the code system `ParticipationType` having the OID 2.16.840.1.113883.5.90 effective 2013-03-18.~~

1. **SHALL** contain exactly one [1..1] `@classCode` and **SHALL** be fixed to the code `ASSIGNED` from code system `RoleClass` having the OID 2.16.840.1.113883.5.110 effective 2013-03-18 and **SHALL NOT** contain nullFlavor

2. **SHALL** contain at least one [1..*] `id` and **SHALL NOT** contain nullFlavor.

a. The id/@root **SHALL** represent the assigned authority.

3. **SHOULD** contain zero or one [0..1] code which

a. **SHALL** comply with the following value set assertion effective 2012-05-31: the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.265 ProviderRoleCode **STATIC**.

4. **SHOULD** contain zero or more [0..*] addr

a. The content of addr **SHALL** be a conformant Canadian Realm Address data type.

5. **SHOULD** contain zero or more [0..*] telecom

a. The content of telecom **SHALL** be a conformant Canadian Realm Telecom data type.

6. **SHALL SUPPORT** up to one [0..1] representedOrganization.

a. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code ORG from code system EntityClass having the OID 2.16.840.1.113883.5.41 effective 2013-03-18.

b. **SHALL** contain exactly one [1..1] determinerCode and **SHALL** be fixed to the code INSTANCE from code system EntityDeterminer having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.

c. **SHALL** contain at least one [1..*] id.

i. "If name contains nullFlavor then id SHALL NOT contain nullFlavor" and "If id contains nullFlavor then name SHALL NOT contain nullFlavor"

d. **SHOULD** contain at least one [1..*] name.

i. "If name contains nullFlavor then id SHALL NOT contain nullFlavor" and "If id contains nullFlavor then name SHALL NOT contain nullFlavor"

e. **SHOULD** contain zero or more [0..*] addr such that:

i. The content of addr **SHALL** be a conformant Canadian Realm Address data type.

f. **SHOULD** contain zero or more [0..*] `telecom` such that:

1. The content of `telecom` **SHALL** be a conformant Canadian Realm Telecom Data Type

7. **SHALL SUPPORT** up to one [0..1] `assignedPerson`.

a. **SHALL** contain exactly one [1..1] `@classCode` and **SHALL** be fixed to the code `PSN` from code system `EntityClass` having the OID 2.16.840.1.113883.5.41 effective 2013-03-18.

b. **SHALL** contain exactly one [1..1] `determinerCode` and **SHALL** be fixed to the code `INSTANCE` from code system `EntityDeterminer` having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.

c. **SHALL** contain at least one [1..*] `name` and **SHALL NOT** contain `nullFlavor`.

i. The content of `name` **SHALL** conform to the Canadian Realm Personal Name data type.

i. **SHOULD** contain up to one [0..1] `location`.

i. **SHALL** contain exactly one [1..1] `typeCode` and **SHALL** be fixed to the code `LOC` from the code system `ParticipationType` having the OID 2.16.840.1.113883.5.90 effective 2013-03-18.

ii. **SHOULD** contain zero or one [0..1] `healthCareFacility`.

1. **SHALL** contain exactly one [1..1] `@classCode` and **SHALL** be fixed to the code `SDLOC` from the code system `RoleClass` having the OID 2.16.840.1.113883.5.6 effective 2013-03-18.

2. **SHALL SUPPORT** zero or more [0..*] `id`.

3. **SHOULD** contain up to one [0..1] `code` and **SHALL** comply with the following value set assertion effective 2008-12-17: the set of codes in the expansion of 2.16.840.1.113883.2.20.3.182 `ServiceDeliveryLocationRoleType` **STATIC**.

4. **SHOULD** contain up to one [0..1] `location`.

- a. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code PLC from the code system EntityClass having the OID 2.16.840.1.113883.5.41 effective 2013-03-18.
 - b. **SHALL** contain exactly one [1..1] determinerCode and **SHALL** be fixed to the code INSTANCE from code system EntityDeterminer having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
 - c. **SHOULD** contain zero or one [0..1] name
 - i. The content of name **SHALL** conform Organization Name Data Type R1.
 - d. **SHOULD** contain zero or one [0..1] addr
 - i. The content of addr **SHALL** be a conformant [Canadian Realm Address data type.](#)
5. **SHOULD** contain up to one [0..1] serviceProviderOrganization.
- a. **SHALL** contain exactly one [1..1] @classCode and **SHALL** be fixed to the code ORG from code system EntityClass having the OID 2.16.840.1.113883.5.41 effective 2013-03-18.
 - b. **SHALL** contain exactly one [1..1] determinerCode and **SHALL** be fixed to the code INSTANCE from code system EntityDeterminer having the OID 2.16.840.1.113883.5.30 effective 2013-03-18.
 - c. **SHOULD** contain ~~zero or more [0..*]~~ at least one [1..*] id.
 - i. "If name contains nullFlavor then id SHALL NOT contain nullFlavor" and "If id contains nullFlavor then name SHALL NOT contain nullFlavor"
 - d. **SHALL** contain at least one ~~or more~~ [1..*] name.
 - i. The content of name **SHALL** conform to the Organization Name Data Type R1
 - ii. "If name contains nullFlavor then id SHALL NOT contain nullFlavor" and "If id contains nullFlavor then name SHALL NOT contain nullFlavor"

- e. **SHOULD** contain zero or more [0..*] **telecom**,
 - i. The content of telecom **SHALL** be a conformant Canadian Realm Telecom data type.
- f. **SHOULD** contain zero or more [0..*] **addr**
 - i. The content of addr **SHALL** be a conformant Canadian Realm Address data type.

Canadian Realm Data Types

The following Canadian Realm Address data type

The proposed CA Realm for the Address datatype flavor:

1. ~~SHALL SUPPORT use~~, which ~~SHALL~~ comply with the following value set assertion, effective 2008-12-17: the set of codes in the expansion of value set 2.16.840.1.113883.2.20.3.138 to ~~x_BasicPostalAddressUse~~ **STATIC**
2. ~~SHOULD~~ contain zero to four [0..4] ~~address~~ information sent as plain text and separated by ~~delimiter~~ tag.
3. ~~SHALL SUPPORT~~ up to one [0..1] ~~postcode~~.
4. ~~SHALL SUPPORT~~ up to one [0..1] ~~city~~.
5. ~~SHALL SUPPORT~~ up to one [0..1] ~~state~~, which ~~SHOULD~~ be selected from the code system ISO-3166-2 alpha codes having the OID 1.0.3166.2.
6. ~~SHALL SUPPORT~~ address parts (part types), which ~~SHALL~~ comply with the following value set assertion, effective 2008-12-17: the set of codes in the expansion of 2.16.840.1.113883.2.20.3.143 ~~x_BasicAddressPartType~~ **STATIC**.

Example: Address Data TypeTypes are referenced within this implementation guide:

```

<addr use="H">
  Apt A5 123 Some Street<delimiter/>
  <city>Edmonton</city>
  <state>AB</state>
  <postalCode>A1B2C3</postalCode>
  <country>CA</country>
</addr>
  
```

Canadian Realm

- Basic Address (AD.BASIC)

Time + Date time data type

- The Canadian Realm Date and Time is based on ~~(TS.DATETIME~~ flavor defined in the pan-Canadian Data Type Specification (R02.04.03).~~)~~

This flavor constraints the timestamp to permit the "date", "time" and "timezone" portions of the timestamp to be specified. Partial dates may be specified only if no time component is specified. Time may be omitted, and partial times may be specified. If a time is specified, the "timezone" portion of the timestamp must be specified. Local time is calculated as an offset of GMT (e.g. "0800" for Pacific Time Zone, "0500" for Eastern Time Zone).

The grammar for the date/time is: YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]][+/-ZZZZ] (24 characters):

1. ~~SHALL~~ contain the year
2. ~~SHOULD~~ be precise to the month
3. ~~SHOULD~~ be precise to the day
4. ~~SHOULD~~ be precise to the hour
5. ~~SHOULD~~ be precise to the minute
6. ~~SHOULD~~ be precise to the second
7. ~~MAY~~ be provided with up to 4 decimal places of precision if the seconds are provided.
8. If more precise than day, ~~SHALL~~ include time zone offset

Example: effectiveTime

```
<effectiveTime value="201208021340-0500"/>
```

Canadian Realm Date time Interval data type

1. ~~SHALL~~ contain 2 of the attributes: ~~low~~, ~~high~~ and ~~width~~.
2. The content of ~~low~~ and ~~high~~ ~~SHALL~~ be conformant Canadian Realm Data and Time Data Type.
3. The content of ~~width~~ ~~SHALL~~ be conformant to PQ Data Type R1.

Canadian Realm Personal Name data type

1. ~~SHALL~~ contain one [1..1] attribute ~~use~~ and the content ~~SHALL~~ comply with the following value set assertion, effective 2008-12-17: the set of codes in the expansion of 2.16.840.1.113883.2.20.3.142-x_BasicPersonNameUse ~~STATIC~~.
- Date Time Interval (IVL<TS.DATETIME>)
2. ~~SHOULD~~ contain up to one [0..1] ~~prefix~~ element
3. ~~SHALL~~ contain one or more [1..*] ~~given~~ element
4. ~~SHALL~~ contain one [1..1] ~~family~~ element
5. ~~SHOULD~~ contain up to one [0..1] ~~suffix~~ element

6. ~~SHOULD~~ contain up to one [0..1] ~~qualifier~~, if present, ~~SHALL~~ comply with the following value set assertion, effective 2008-12-17: the set of codes in the expansion of 2.16.840.1.113883.2.20.3.149 ~~x_FullPersonNamePartqualifier~~ **STATIC**
 7. ~~The name parts SHALL~~ comply with the following value set assertion, effective 2008-12-17: the set of codes in the expansion of 2.16.840.1.113883.2.20.3.141 ~~x_BasicPersonNamePartType~~ **STATIC**
 8. ~~Each part SHALL~~ be constrained to a maximum of 50 characters
- Example: Person Name (PN.BASIC)

```

<name use="I">
  <prefix>Mr</prefix>
  <given>John</given>
  <given_qualifier="IN">W</given>
  <family>Smith</family>
</name>
  
```

Canadian Realm Telecom data type

1. ~~SHALL~~ contain one [1..1] attribute ~~use~~ and the content ~~SHALL~~ comply with the following value set assertion, effective 2008-12-17: the set of codes in the expansion of 2.16.840.1.113883.2.20.3.144 ~~x_BasicTelecommunicationAddressUse~~ **STATIC**.
2. ~~SHALL~~ contain one [1..1] attribute ~~value~~ and the content ~~SHOULD~~ follow the specifications as described in <http://www.ietf.org/rfc/rfc3966.txt>.
3. ~~SHOULD~~ contain up to one [0..1] ~~scheme~~, if present, ~~SHALL~~ comply with the following value set assertion, effective 2008-12-17: the set of codes in the expansion of 2.16.840.1.113883.1.11.19742 ~~x_PhoneURLScheme~~ **STATIC**.
4. ~~MAY~~ contain up to one [0..1] ~~useablePeriod~~

Example: Telecom

```

<telecom use="WP" xsi:type="FAX" value="tel:+1-555-555-4002"/>
<telecom use="WP" xsi:type="TEL" value="tel:+14169237867;ext=200"/>
  
```

- Telecommunication Phone Number (TEL.PHONE)

Please refer to the [pan-Canadian Data Types Specification](#) for each data type's properties and rules.

Acronyms

CCD	Continuity of Care Document
CDA	Clinical Document Architecture
HITSP	Health Information Technology Standards Panel

HL7	Health Level Seven
IHE	Integrating the Healthcare Enterprise
LOINC	Logical Observation Identifiers Names and Codes
RIM	Reference Information Model
SNOMED-CT	Systemized Nomenclature for Medicine – Clinical Terms
URL	Uniform Resource Locator
Xpath	XML Path Language

References

HL7 v3 pan-Canadian Data Type Specification – R02.04.03 – August 31, 2010

Pan-Canadian Terminology Worksheet – R02.04.03 – August 31, 2010

Pan-Canadian Implementation Guide Volume 0 – R02.04.03 – August 31, 2010

HL7 Clinical Document Architecture (CDA Release 2)

AB Transcribed Reports CDA Implementation Guide - April, 2012

BC PITO E2E-DTC – Part II – Consolidated Implementation Guide – April 2012

MB AMC Mustimuhw cEMRII Interoperability Specification- CDA Implementation Guide –August 2012

MB e-Referral and Consultation- CDA Implementation Guide – Manitoba eHealth – April 2012

ON Clinical Document Specification (CDS) – February 2011

CIHI Primary Health Care Electronic Medical Recont Content Standard – July 2012

Appendix A: Terminology References

Value sets defined in this Implementation Guide

Value Set Name: CDAHeaderDocumentType

Value Set OID: 2.16.840.1.113883.2.20.3.206 (for value set management only)

Terminology code system: LOINC (Logical Observation Identifiers Names and Codes)

Code system OID: 2.16.840.1.113883.6.1 (to be transmitted in a pan-Canadian Header instance)

Owning SCWG: SCWG 2

Value Set Date: 2013-04-01 (date format is YYYY-MM-DD)

Textual definition: Document types being supported in the pan-Canadian Clinical Document Architecture (CDA) header.

Usage Note: This is an initial list of document types used to support the pan-Canadian header. When clinical templates (to be used in CDA body) are explored, the list of document types will expand. Also, the granularity level of the initial list is generic overall. Domain or provider specific document types that are included reflect usage in existing implementation and deemed appropriate for inclusion by SCWG 2.

Textual definitions for individual document types are out of scope of this value set publication; they will be considered for subsequent releases of pan-Canadian CDA artifacts.

Pan-Canadian viewer name for each document type will be considered based on implementation feedback.

Property "Code" contains the LOINC concept identifier (to be sent along with code system OID)

Property "Name" contains the LOINC Long Common Name.

Code	Concept Name	Comment
34109-9	Note	
51848-0	Assessment note	Additional context from LOINC: An Assessment note (also called impression or diagnoses) represents the clinician's conclusions and working assumptions that will guide treatment of the patient. Please note care plan is a separate document type.
11488-4	Consult note	

18748-4	Diagnostic imaging study	
70004-7	Diagnostic study note	
18842-5	Discharge summary	
11523-8	EEG study	
11524-6	EKG study	
18749-2	Electromyogram study	
34878-9	Emergency medicine Note	
34117-2	History and physical note	
11502-2	Laboratory report	
57054-9	Nursing Emergency department Triage+care note	
11526-1	Pathology report	
28626-0	Physician History and physical note	
11504-8	Provider-unspecified Operation note	
11506-3	Provider-unspecified Progress note	
57133-1	Referral note	
34133-9	Summarization of episode note	This can be used for one or multiple encounters. A proposed viewer name 'Health Status Summary Note' is under consideration for inclusion to pCLOCD.

Value sets and Reference sets defined outside of this implementation guide*

Value Set or Reference Set Name	Source	Comments
ActCareEventType	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian_Standards/Terminology/3_pan-Canadian_Terminology_Artifacts/MTW_Current_Release Download file under "Master Terminology Worksheet".	
ActConsentType	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian_Standards/Terminology/3_pan-Canadian_Terminology_Artifacts/MTW_Current_Release Download file under "Master Terminology Worksheet".	
ActCode	http://gforge.hl7.org/gf/project/desiggn-repos/frs/?action=FrsReleaseBrowse&frs_package_id=30 Version 2.42.1 File name: DEFN=UV=VO=1206-20130318.coremif	<p>Usage note: It is known ActCode is too broad for specific implementation however implementation details is unavailable at this time to help determine the constrain value set. Implementation feedback is welcome to help determine a preferred value set.</p> <p>To view the value set in human readable format, you may download HL7 RoseTree (see details below) and then use RoseTree to open the coremif file.</p>
ActPriority	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian_Standards/Terminology/3_pan-Canadian_Terminology_Artifacts/MTW_Current_Release Download file under "Master Terminology Worksheet".	
AdministrativeGender	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-	

	Canadian Standards/Terminology/3_pan-Canadian Terminology Artifacts/MTW Current Release Download file under "Master Terminology Worksheet".	
EncounterDischargeDisposition	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian Standards/Terminology/3_pan-Canadian Terminology Artifacts/MTW Current Release Download file under "Master Terminology Worksheet".	
MaritalStatus	http://gforge.hl7.org/gf/project/design-repos/frs/?action=FrsReleaseBrowse&frs_package_id=30 Version 2.42.1 File name: DEFN=UV=VO=1206-20130318.coremif	To view the value set in human readable format, you may download HL7 RoseTree (see details below) and then use RoseTree to open the coremif file.
LanguageCode	https://infocentral.infoway-inforoute.ca/@api/deki/files/6824/=Refset_LanguageCode_(20120531).zip	
LanguageAbilityMode	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian Standards/Terminology/3_pan-Canadian Terminology Artifacts/MTW Current Release Download file under "Master Terminology Worksheet".	

LanguageAbilityProficiency	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian_Standards/Terminology/3_pan-Canadian_Terminology_Artifacts/MTW_Current_Release Download file under "Master Terminology Worksheet".	
NullFlavor <u>nullFlavor</u>	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian_Standards/Terminology/3_pan-Canadian_Terminology_Artifacts/MTW_Current_Release Download file under "Master Terminology Worksheet".	
ParticipationFunction	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian_Standards/Terminology/3_pan-Canadian_Terminology_Artifacts/MTW_Current_Release Download file under "Master Terminology Worksheet".	
ParticipationType	http://gforge.hl7.org/gf/project/design-repos/frs/?action=FrsReleaseBrowse&frs_package_id=30 Version 2.42.1 File name: DEFN=UV=VO=1206-20130318.coremif	To view the value set in human readable format, you may download HL7 RoseTree (see details below) and then use RoseTree to open the coremif file.
PersonalRelationshipRoleType	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian_Standards/Terminology/3_pan-Canadian_Terminology_Artifacts/MTW_Current_Release Download file under "Master Terminology Worksheet".	
ProviderRoleCode	https://infocentral.infoway-inforoute.ca/@api/deki/files/6833/=Refset_ProviderRoleCode_(20120531).zip	

RoleClassAssociative	http://gforge.hl7.org/gf/project/desiggn-repos/frs/?action=FrsReleaseBrowse&frs_package_id=30 Version 2.42.1 File name: DEFN=UV=VO=1206-20130318.coremif	To view the value set in human readable format, you may download HL7 RoseTree (see details below) and then use RoseTree to open the coremif file.
RoleClassMutualRelationship	http://gforge.hl7.org/gf/project/desiggn-repos/frs/?action=FrsReleaseBrowse&frs_package_id=30 Version 2.42.1 File name: DEFN=UV=VO=1206-20130318.coremif	To view the value set in human readable format, you may download HL7 RoseTree (see details below) and then use RoseTree to open the coremif file.
RoleCode	http://gforge.hl7.org/gf/project/desiggn-repos/frs/?action=FrsReleaseBrowse&frs_package_id=30 Version 2.42.1 File name: DEFN=UV=VO=1206-20130318.coremif	<p>Usage note for 2.2.22.5.c: This attribute will be left as generic RoleCode as it is unable to determine at this point what kind of roles we can constrain this to.</p> <p>PersonalRelationshipRoletype value set is too restrictive (e.g. what about health care providers?) Further implementation feedback is required to proceed with constraint.</p> <p>To view the value set in human readable format, you may download HL7 RoseTree (see details below) and then use RoseTree to open the coremif file.</p>
ServiceDeliveryLocationRoleType	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian_Standards/Terminology/3_pan-Canadian_Terminology_Artifacts/MT_W_Current_Release Download file under "Master Terminology Worksheet".	
<u>x_ActRelationshipDocument</u>	http://gforge.hl7.org/gf/project/desiggn-repos/frs/?action=FrsReleaseBrowse&frs_package_id=30 Version 2.42.1 File name: DEFN=UV=VO=1206-20130318.coremif	To view the value set in human readable format, you may download HL7 RoseTree (see details below) and then use RoseTree to open the coremif file.

x_BasicPostalAddressUse	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian_Standards/Terminology/3_pan-Canadian_Terminology_Artifacts/MTW_Current_Release Download file under "Master Terminology Worksheet".	
x_BasicAddressPartType	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian_Standards/Terminology/3_pan-Canadian_Terminology_Artifacts/MTW_Current_Release Download file under "Master Terminology Worksheet".	
<u>x_BasicConfidentialityKind</u>	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian_Standards/Terminology/3_pan-Canadian_Terminology_Artifacts/MTW_Current_Release Download file under "Master Terminology Worksheet".	
x_BasicPersonNameUse	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian_Standards/Terminology/3_pan-Canadian_Terminology_Artifacts/MTW_Current_Release Download file under "Master Terminology Worksheet".	
x_FullPersonNamePartQualifier	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian_Standards/Terminology/3_pan-Canadian_Terminology_Artifacts/MTW_Current_Release Download file under "Master Terminology Worksheet".	
x_EncounterParticipant	http://qforge.hl7.org/qf/project/design-repos/frs/?action=FrsReleaseBrowse&frs_package_id=30 Version 2.42.1 File name: DEFN=UV=VO=1206-20130318.coremif	To view the value set in human readable format, you may download HL7 RoseTree (see details below) and then use RoseTree to open the coremif file.

x_InformationRecipient	http://gforge.hl7.org/gf/project/design-repos/frs/?action=FrsReleaseBrowse&frs_package_id=30 Version 2.42.1 File name: DEFN=UV=VO=1206-20130318.coremif	To view the value set in human readable format, you may download HL7 RoseTree (see details below) and then use RoseTree to open the coremif file.
x_PhoneURLScheme - go to MTW	https://infocentral.infoway-inforoute.ca/2_Standards/1_pan-Canadian_Standards/Terminology/3_pan-Canadian_Terminology_Artifacts/MTW_Current_Release Download file under "Master Terminology Worksheet".	
x_ServiceEventPerformer	http://gforge.hl7.org/gf/project/design-repos/frs/?action=FrsReleaseBrowse&frs_package_id=30 Version 2.42.1 File name: DEFN=UV=VO=1206-20130318.coremif	To view the value set in human readable format, you may download HL7 RoseTree (see details below) and then use RoseTree to open the coremif file.

Other Useful Terminology Information

HL7 RoseTree download to view HL7 International vocabulary:

http://gforge.hl7.org/gf/project/rose-tree/frs/?action=FrsReleaseBrowse&frs_package_id=45