Integrating the Healthcare Enterprise

IHE Patient Care Coordination (PCC)

Technical Framework
Volume 2
Revision 4.0

Final Text

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1 Preface to Volume 2

1.1 Intended Audience

The intended audience of this document is:

- Technical staff of vendors planning to participate in the IHE initiative
- IT departments of healthcare institutions
- Experts involved in standards development
- Anyone interested in the technical aspects of integrating healthcare information systems

1.2 Related Information for the Reader

The reader of volume 2 should read or be familiar with the following documents:

- Volume 1 of the Cross-Enterprise Document Sharing (XDS) Integration Profile documented in the ITI Infrastructure Technical Framework (See http://www.ihe.net/Technical_Framework/index.cfm).
- Volume 1 of the Notification of Document Availability (NAV) Integration Profile documented in the ITI Infrastructure Technical Framework (See http://www.ihe.net/Technical_Framework/index.cfm).
- Volume 1 of the Audit Trail and Node Authentication (ATNA) Integration Profile documented in the ITI Infrastructure Technical Framework (See http://www.ihe.net/Technical_Framework/index.cfm).
- HL7 Clinical Document Architecture Release 2: Section 1, CDA Overview.
- Care Record Summary – Implementation Guide for CDA Release 2 (US Realm): Section 1
- Presentations from IHE Workshop: Effective Integration of the Enterprise and the Health System - June 28–29, 2005: http://www.ihe.net/Participation/workshop_2005.cfm, June 2005:
- For a RHIO-3.ppt Leveraging IHE to Build RHIO Interoperability
- Cross-Enterprise Document Sharing (XDS)
- Notification of Document Availability (NAV)
- Use Cases for Medical Summaries
- Ovrw.ppt Patient Care Coordination - Overview of Profiles

1.2.1 How this Document is Organized

Section 1 is the preface, describing the intended audience, related resources, and organizations and conventions used within this document.

Section 2 provides an overview of the concepts of IHE actors and transactions used in IHE to define the functional components of a distributed healthcare environment.

Section 3 defines transactions in detail, specifying the roles for each actor, the standards employed, the information exchanged, and in some cases, implementation options for the transaction.

Section 4 defines a set of payload bindings with transactions.
Section 5 defines the content modules that may be used in transactions.

1.2.2 Conventions Used in this Volume

This document has adopted the following conventions for representing the framework concepts and specifying how the standards upon which the IHE Technical Framework is based should be applied.

1.2.2.1 The Generic IHE Transaction Model

Transaction descriptions are provided in section 4. In each transaction description, the actors, the roles they play, and the transactions between them are presented as use cases.

The generic IHE transaction description includes the following components:

- Scope: a brief description of the transaction.
- Use case roles: textual definitions of the actors and their roles, with a simple diagram relating them, e.g.:

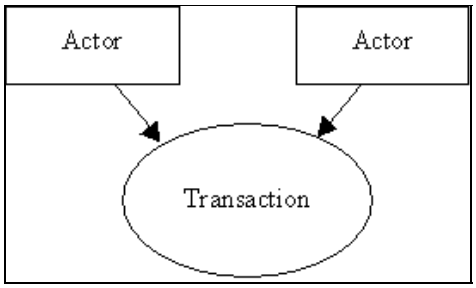

Figure 1.2-1Figure 1.2-1 Use Case Role Diagram

- *Referenced Standards*: the standards (stating the specific parts, chapters or sections thereof) to be used for the transaction.
- *Interaction Diagram*: a graphical depiction of the actors and transactions, with related processing within an actor shown as a rectangle and time progressing downward, similar to:

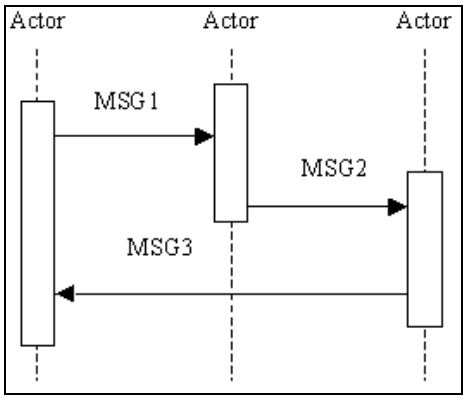

Figure 1.2-2Figure 1.2-3 Interaction Diagram

The interaction diagrams used in the IHE Technical Framework are modeled after those described in Grady Booch, James Rumbaugh, and Ivar Jacobson, *The Unified Modeling Language User Guide*, ISBN 0-201-57168-4. Simple acknowledgment messages are omitted from the diagrams for brevity.

- *Message definitions*: descriptions of each message involved in the transaction, the events that trigger the message, its semantics, and the actions that the message triggers in the receiver.

1.3 Copyright Permissions

1.4 How to Contact Us

IHE Sponsors welcome comments on this document and the IHE initiative. They should be directed to the discussion server at http://forums.rsna.org or to:

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2 Introduction

This document, the IHE Patient Care Coordination Technical Framework (PCC TF), defines specific implementations of established standards. These are intended to achieve integration goals that promote appropriate exchange of medical information to coordinate the optimal patient care among care providers in different care settings. It is expanded annually, after a period of public review, and maintained regularly through the identification and correction of errata. The latest version of the document is always available via the Internet at http://www.ihe.net/Technical_Framework/index.cfm , where the technical framework volumes specific to the various healthcare domains addressed by IHE may be found.

The IHE Patient Care Coordination Technical Framework identifies a subset of the functional components of the healthcare enterprises and health information networks, called IHE actors, and specifies their interactions in terms of a set of coordinated, standards-based transactions.

The other domains within the IHE initiative also produce Technical Frameworks within their respective areas that together form the IHE Technical Framework. Currently, the following IHE Technical Framework(s) are available:

- IHE IT Infrastructure Technical Framework
- IHE Cardiology Technical Framework
- IHE Laboratory Technical framework
- IHE Radiology Technical Framework
- IHE Patient Care Coordination Technical Framework

Where applicable, references are made to other technical frameworks. For the conventions on referencing other frameworks, see the preface of this volume.

2.1 Relationship to Standards

The IHE Technical Framework identifies functional components of a distributed healthcare environment (referred to as IHE actors), solely from the point of view of their interactions in the healthcare enterprise. At its current level of development, it defines a coordinated set of transactions based on standards (such as HL7, IETF, ASTM, DICOM, ISO, OASIS, etc.) in order to accomplish a particular use case. As the scope of the IHE initiative expands, transactions based on other standards may be included as required.

Each transaction may have as its payload one or more forms of content, as well as specific metadata describing that content within the transaction. The specification of the payload and metadata about it are the components of a Content Integration Profile. The payload is specified in a Content Module, and the impacts of any particular payload on a transaction are described within a content binding. The payloads of each transaction are

also based on standards (such as HL7, IETF, ASTM, DICOM, ISO, OASIS, etc.), again, in order to meet the needs of a specific use case.

In some cases, IHE recommends selection of specific options supported by these standards. However, IHE does not introduce technical choices that contradict conformance to these standards. If errors in or extensions to existing standards are identified, IHE's policy is to report them to the appropriate standards bodies for resolution within their conformance and standards evolution strategy.

IHE is therefore an implementation framework, not a standard. Conformance claims for products must still be made in direct reference to specific standards. In addition, vendors who have implemented IHE integration capabilities in their products may publish IHE Integration Statements to communicate their products' capabilities. Vendors publishing IHE Integration Statements accept full responsibility for their content. By comparing the IHE Integration Statements from different products, a user familiar with the IHE concepts of actors and integration profiles can determine the level of integration between them. See PCC TF-1: Appendix C for the format of IHE Integration Statements.

2.2 Relationship to Product Implementations

The IHE actors and transactions described in the IHE Technical Framework are abstractions of the real-world healthcare information system environment. While some of the transactions are traditionally performed by specific product categories (e.g. HIS, Clinical Data Repository, Electronic Health record systems, Radiology Information Systems, Clinical Information Systems or Cardiology Information Systems), the IHE Technical Framework intentionally avoids associating functions or actors with such product categories. For each actor, the IHE Technical Framework defines only those functions associated with integrating information systems. The IHE definition of an actor should therefore not be taken as the complete definition of any product that might implement it, nor should the framework itself be taken to comprehensively describe the architecture of a healthcare information system.

The reason for defining actors and transactions is to provide a basis for defining the interactions among functional components of the healthcare information system environment. In situations where a single physical product implements multiple functions, only the interfaces between the product and external functions in the environment are considered to be significant by the IHE initiative. Therefore, the IHE initiative takes no position as to the relative merits of an integrated environment based on a single, all-encompassing information system versus one based on multiple systems that together achieve the same end.

2.3 Relation of this Volume to the Technical Framework

The IHE Technical Framework is based on actors that interact through transactions using some form of content.

Actors are information systems or components of information systems that produce, manage, or act on information associated with operational activities in the enterprise.

Transactions are interactions between actors that transfer the required information through standards-based messages.

The implementation of the transactions described in this PCC TF-2 support the specification of Integration Profiles defined in PCC TF-1. The role and implementation of these transactions require the understanding of the Integration profile they support.

There is often a very clear distinction between the transactions in a messaging framework used to package and transmit information, and the information content actually transmitted in those messages. This is especially true when the messaging framework begins to move towards mainstream computing infrastructures being adopted by the healthcare industry.

In these cases, the same transactions may be used to support a wide variety of use cases in healthcare, and so more and more the content and use of the message also needs to be profiled, sometimes separately from the transaction itself. Towards this end IHE has developed the concept of a Content Integration Profile.

Content Integration Profiles specify how the payload of a transaction fits into a specific use of that transaction. A content integration profile has three main parts. The first part describes the use case. The second part is binding to a specific IHE transaction, which describes how the content affects the transaction. The third part is a Content Module, which describes the payload of the transaction. A content module is specified so as to be independent of the transaction in which it appears.

2.3.1 Content Modules

The Patient Care Coordination Technical Framework organizes content modules categorically by the base standard. At present, the PCC Technical Framework uses only one base standard, CDA Release 2.0, but this is expected to change over time. Underneath each standard, the content modules are organized using a very coarse hierarchy inherent to the standard. So for CDA Release 2.0 the modules are organized by document, section, entry, and header elements.

Each content module can be viewed as the definition of a "class" in software design terms, and has associated with it a name. Like "class" definitions in software design, a content module is a "contract", and the PCC Technical Framework defines that contract in terms of constraints that must be obeyed by instances of that content module. Each

content module has a name, also known as its template identifier. The template identifiers are used to identify the contract agreed to by the content module. The PCC Technical Committee is responsible for assigning the template identifiers to each content module.

Like classes, content modules may inherit features of other content modules of the same type (Document, Section or Entry) by defining the parent content module that they inherit from. They may not inherit features from a different type. Although information in the CDA Header is in a different location that information in a CDA Entry, these two content modules are considered to be of the same type, and so may inherit from each other when necessary.

The PCC Technical Framework uses the convention that a content module cannot have more than one parent (although it may have several ancestors). This is similar to the constraint in the Java™ programming language, where classes can derive from only one parent. This convention is not due to any specific technical limitation of the technical framework, but does make it easier for software developers to implement content modules.

Each content module has a list of data elements that are required (R), required if known (R2), and optional (O). The presentation of this information varies with the type of content module, and is described in more detail below. Additional data elements may be provided by the sender that are not defined by a specific content module, but the receiver is not required to interpret them.

Required data elements must always be sent. Data elements that are required may under exceptional circumstances have an unknown value (e.g., the name of an unconscious patient). In these cases the sending application is required to indicate the reason that the data is not available.

Data elements that are marked required if known (R2) must be sent when the sending application has that data available. The sending application must be able to demonstrate that it can send all required if known elements, unless it does not in fact gather that data. When the information is not available, the sending application may indicate the reason that the data is not available.

Data elements that are marked optional (O) may be sent at the choice of the sending application. Since a content module may include data elements not specified by the profile, some might ask why these are specified in a content module. The reason for specifying the optional data elements is to ensure that both sender and receiver use the appropriate semantic interpretation of these elements. Thus, an optional element need not be sent, but when it is sent, the content module defines the meaning of that data element, and a receiver can always be assured of what that data element represents when it is present. Senders should not send an optional data element with an unknown value. If the value is not known, simply do not send the data element.

Other data elements may be included in an instance of a content module over what is defined by the PCC Technical Framework. Receivers are not required to process these

elements, and if they do not understand them, must ignore them. Thus, it is not an error to include more than is asked for, but it is an error to reject a content module because it contains more than is defined by the framework. This allows value to be added to the content modules delivered in this framework, through extensions to it that are not defined or profiled by IHE. It further allows content modules to be defined later by IHE that are refinements or improvements over previous content modules.

For example, there is a Referral Summary content module defined in this framework. In later years an ED Referral content module can be created that inherits the constraints of the Referral Summary content module, with a few more use case specific constraints added. Systems that do not understand the ED Referral content module but do understand the Referral Summary content module will be able to interoperate with systems that send instances of documents that conform to the ED Referral content module. This interoperability, albeit at a reduced level of functionality, is by virtue of the fact that ED Referrals are simply a refinement of the Referral Summary.

In order to retain this capability, there are a few rules about how the PCC Technical Committee creates constraints. Constraints that apply to any content module will always apply to any content modules that inherit from it. Thus, the "contracts" are always valid down the inheritance hierarchy. Secondly, data elements of a content module will rarely be deprecated. This will usually occur only in the cases where they have been deprecated by the base standard. While any specific content module has a limited scope and set of use cases, deprecating the data element prevents any future content module from taking advantage of what has already been defined when a particular data element has been deprecated simply because it was not necessary in the original use case.

2.3.1.1 Document Content Module Constraints

Each document content module will define the appropriate codes used to classify the document, and will also describe the specific data elements that are included. The code used to classify it is specified using an external vocabulary, typically LOINC in the case of CDA Release 2.0 documents. The set of data elements that make up the document are defined, including the whether these data elements must, should or may be included in the document. Each data element is typically a section within the document, but may also describe information that is contained elsewhere within of the document (e.g., in the header). Each data element is mapped into a content module via a template identifier, and the document content module will further indicate whether these are data elements are required, required if known or optional. Thus, a document content module shall contain as constraints:

- The template identifier of the parent content module when there is one.
- The LOINC code or codes that shall be used to classify the document.
- A possibly empty set of required, required if known, and optional section content modules, and their template identifiers.

- A possibly empty set of required, required if known, and optional header content modules, and their template identifiers.
- Other constraints as necessary.

The template identifier for the document will be provided in the narrative, as will the legal LOINC document type codes and if present, any parent template identifier.

The remaining constraints are presented in two tables. The first table identifies the relevant data elements as determined during the technical analysis, and maps these data elements to one or more standards. The second table actually provides the constraints, wherein each data element identified in the first table is repeated, along with whether it is required, required if known, or optional. Following this column is a reference to the specification for the content module that encodes that data element, and the template identifier assigned to it. The simple example below completes the content specification described above. A simplified example is shown below.

Sample Document Specification SampleDocumentOID
Sample Document has one required section, and one entry that is required if known

2.3.1.1.1 Specification

Data Element Name	Opt	Template ID
Sample Section Comment on section	R	SampleSectionOID
Sample Entry Comment on entry	R2	SampleEntryOID

Table 2.3.1.1.1-1Table 2.3-1

2.3.1.1.2 Conformance

CDA Release 2.0 documents that conform to the requirements of this content module shall indicate their conformance by the inclusion of the appropriate <templateId> elements in the header of the document. This is shown in the sample document below.

```
<ClinicalDocument xmlns='urn:hl7-org:v3'>
  <typeId extension="POCD_HD000040" root="2.16.840.1.113883.1.3"/>
  <templateId root='SampleDocumentOID'/>
  <id root=' ' extension=' '/>
  <code code=' ' displayName=' '
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Sample Document</title>
  <effectiveTime value='20080601012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality'
/>
  <languageCode code='en-US'/>
     :
  <component><structuredBody>
    <component>
      <section>
        <templateId root='SampleSectionOID'/>
        <!-- Required Sample Section Section content -->
      </section>
    </component>

  </strucuredBody></component>
</ClinicalDocument>
```

2.3.1.1.3 Schematron

```
<pattern name='Template_SampleDocumentOID'>
 <rule context='*[cda:templateId/@root="SampleDocumentOID"]'>
   <!-- Verify that the template id is used on the appropriate type of
object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The Sample Document can only be used on Clinical Documents.
   </assert>
   <!-- Verify the document type code -->
   <assert test='cda:code[@code = "{{{LOINC}}}"]'>
     Error: The document type code of a Sample Document must be
{{{LOINC}}}
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The document type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "SampleSectionOID"]'>
     <!-- Verify that all required data elements are present -->
     Error: A(n) Sample Document must contain Sample Section.
     See http://wiki.ihe.net/index.php?title=SampleDocumentOID
   </assert>
   <assert test='.//cda:templateId[@root = "SampleEntryOID"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A(n) Sample Document should contain Sample Entry.
     See http://wiki.ihe.net/index.php?title=SampleDocumentOID
   </assert>
 </rule>
</pattern>
```

2.3.1.2 Section Content Module Constraints

Section content modules will define the content of a section of a clinical document. Sections will usually contain narrative text, and so this definition will often describe the information present in the narrative, although sections may be wholly comprised of subsections.

Sections may contain various subsections, and these may be required, required if known or optional. Sections may also contain various entries, and again, these may be required, required if known, or optional. A section may not contain just entries; it must have at least some narrative text or subsections to be considered to be valid content.

Again, sections can inherit features from other section content modules. Once again, sections are classified using an external vocabulary (again typically this would be LOINC), and so the list of possible section codes is also specified. Sections that inherit from other sections will not specify a LOINC code unless it is to restrict the type of section to smaller set of LOINC codes specified by one of its ancestors.

Thus, a section content module will contain as constraints:

- The template identifier of the parent content module when there is one.
- The LOINC code or codes that shall be used to classify the section.
- A possibly empty set of required, required if known, and optional section content modules, and their template identifiers for the subsections of this section.
- A possibly empty set of required, required if known, and optional entry content modules, and their template identifiers.
- Other constraints as necessary.

These constraints are presented in this document using a table for each section content module, as shown below.

Sample Section		
	SampleSectionOID	
	foo (SampleParentOID)	
	Desription of this section	
	Opt	**Description**
XXXXX-X	R	SECTION NAME
Entries	**Opt**	**Description**
OID	R	Sample Entry
Subsections	**Opt**	**Description**
OID	R	Sample Subsection

Table 2.3.1.1.3-1
Table 2.3.1.1.3-2
Table 2.3.1.1.3-3
Table 2.3.1.1.3-4LOINC Codes
Table 2.3.1.1.3-5General Description
Table 2.3.1.1.3-6Parent Template

2.3.1.2.1 Parent Template

The parent of this template is foo.

```
<component>
  <section>
    <templateId root='SampleParentOID'/>
    <templateId root='SampleSectionOID'/>
    <id root=' ' extension=' '/>
    <code code=' ' displayName=' '
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
      Required and optional entries as described above
    </entry>

    <component>
      Required and optional subsections as described above
    </component>

  </section>
```

Table 2.3.1.2.1-1Template ID

2.3.1.3 Entry and Header Content Modules Constraints

Entry and Header content modules are the lowest level of content for which content modules are defined. These content modules are associated with classes from the HL7 Reference Information Model (RIM). These "RIM" content modules will constrain a single RIM class. Entry content modules typically constrain an "Act" class or one of its subtypes, while header content modules will normally constrain "Participation", "Role" or "Entity" classes, but may also constrain an "Act" class.

Entry and Header content modules will describe the required, required if known, and optional XML elements and attributes that are present in the CDA Release 2.0 instance. Header and Entry content modules may also be built up using other Header and Entry content modules. An entry or header content module may also specify constraints on the vocabularies used for codes found in the entry, or data types for the values found in the entry. Thus, an entry or header content module will contain as constraints:

- The template identifier of the parent content module when there is one.
- A description of the XML elements and attributes used in the entry, along with explanations of their meaning.
- An indication of those XML elements or attributes that are required, required if known, or optional.
- Vocabulary domains to use when coding the entry.
- Data types used to specify the value of the entry.
- Other constraints as necessary.

An example is shown below:

Sample Entry

Some text describing the entry.

```
<observation classCode='OBS' moodCode='EVN'>
   <templateId root='foo'/>
</observation>
```

2.3.1.4 <observation classCode='OBS' moodCode='EVN'>

Some details about the observation element

2.3.1.5 <templateId root='foo'/>

Some details about the template id element

3 IHE Transactions

This section defines each IHE transaction in detail, specifying the standards used, and the information transferred.

3.0 Cross Enterprise Document Content Transactions

At present, all transactions used by the PCC Content Profiles appear in ITI TF-2. General Options defined in content profiles for a Content Consumer are described below.

3.0.1 View Option

A Content Consumer that supports the View Option shall be able to:

1. Use the appropriate XD* transactions to obtain the document along with associated necessary metadata.
2. Render the document for viewing. This rendering shall meet the requirements defined for CDA Release 2 content presentation semantics (See Section 1.2.4 of the CDA Specification: Human readability and rendering CDA Documents). CDA Header information providing context critical information shall also be rendered in a human readable manner. This includes at a minimum the ability to render the document with the stylesheet specifications provided by the document source, if the document source provides a stylesheet. Content Consumers may optionally view the document with their own stylesheet, but must provide a mechanism to view using the source stylesheet.
3. Support traversal of links for documents that contain links to other documents managed within the sharing framework.
4. Print the document to paper.

3.0.2 Document Import Option

This Option requires that the View Option be supported. In addition, the Content Consumer that supports the Document Import Option shall be able to support the storage of the entire document (as provided by the sharing framework, along with sufficient metadata to ensure its later viewing) both for discharge summary or referral documents. This Option requires the proper tracking of the document origin. Once a document has been imported, the Content Consumer shall offer a means to view the document without the need to retrieve it again from the sharing framework. When viewed after it was imported, a Content Consumer may chose to access the sharing framework to find out if the related Document viewed has been deprecated, replaced or addended.

Note: For example, when using XDS, a Content Consumer may choose to query the Document Registry about a document previously imported in order to find out if this previously imported document may have been replaced or has received an addendum. This capability is offered to Content Consumers by this Integration Profile, but not required, as the events that may justify such a query are extremely implementation specific.

3.0.3 Section Import Option

This Option requires that the View Option be supported. In addition, the Content Consumer that supports the Section Import Option shall be able to support the import of one or more sections of the document (along with sufficient metadata to link the data to its source) both for discharge summary or referral. This Option requires the proper tracking of the document section origin. Once sections have been selected, a Content Consumer shall offer a means to copy the imported section(s) into local data structures as free text. This is to support the display of section level information for comparison or editing in workflows such as medication reconciliation while discrete data import is not possible. When viewed again after it is imported, a Content Consumer may chose to access the sharing framework to find out if the related information has been updated.

Note: For example, when using XDS, a Content Consumer may choose to query the Document Registry about a document whose sections were previously imported in order to find out if this previously imported document may have been replaced or has received an addendum. This capability is offered to Content Consumers by this Integration Profile, but not required, as the events that may justify such a query are extremely implementation specific.

This Option does not require, but does not exclude the Content Consumer from offering a means to select and import specific subsets of the narrative text of a section.

3.0.4 Discrete Data Import Option

This Option does not require that the View, Import Document or Section Import Options be supported. The Content Consumer that supports the Discrete Data Import Option shall be able to support the storage of the structured content of one or more sections of the document. This Option requires that the user be offered the possibility to select among the specific sections that include structured content a set of clinically relevant record entries (e.g. a problem or an allergy in a list) for import as part of the local patient record with the proper tracking of its origin.

Note: The Discrete Data Import Option does not require the support of the View, Import Document or Import Sections Options so that it could be used alone to support implementations of Content Consumers such as Public Health Data or Clinical Research systems that might aggregate and anonymize specific population healthcare information data as Document Consumer Actors, but one where no care provider actually views the medical summaries.

When discrete data is accessed after it was imported, a Content Consumer may choose to check if the document related to the discrete data viewed has been deprecated, replaced or addended.

A Content Consumer Actor grouped with the XDS Document Source Actor may query the Document Registry about a document from which discrete data was previously imported in order to find out if this previously imported document may have been replaced or has received an addendum. This capability is offered to Content Consumers by this Integration Profile, but not required, as the events that may justify such a query are extremely implementation specific.

4 IHE Patient Care Coordination Bindings

This section describes how the payload used in a transaction of an IHE profile is related to and/or constrains the data elements sent or received in those transactions. This section is where any specific dependencies between the content and transaction are defined.

A content integration profile can define multiple bindings. Each binding should identify the transactions and content to which it applies.

The source for all required and optional attributes have been defined in the bindings below. Three tables describe the three main XDS object types: XDSDocumentEntry, XDSSubmissionSet, and XDSFolder. XDSSubmissionSet and XDSDocumentEntry are required. Use of XDSFolder is optional. These concepts are universal to XDS, XDR and XDM.

The columns of the following tables are:

- **<XXX> attribute** – name of an XDS attribute, followed by any discussion of the binding detail.
- **Optional?** - Indicates the required status of the XDS attribute, and is one of R, R2, or O (optional). This column is filled with the values specified in the XDS Profile as a convenience.
- **Source Type** – Will contain one of the following values:

Source Type	Description
SA	Source document Attribute – value is copied directly from source document. The Source/Value column identifies where in the source document this attribute comes from. Specify the location in XPath when possible.
SAT	Source document Attribute with Transformation – value is copied from source document and transformed. The Source/Value column identifies where in the source document this attribute comes from. Specify the location in XPath when possible. Extended Discussion column must not be empty and the transform must be defined in the extended discussion
FM	Fixed (constant) by Mapping - for all source documents. Source/Value column contains the value to be used in all documents.
FAD	Fixed by Affinity Domain – value configured into Affinity Domain, all documents will use this value.
CAD	Coded in Affinity Domain – a list of acceptable codes are to be configured into Affinity Domain. The value for this attribute shall be taken from this list.
CADT	Coded in Affinity Domain with Transform - a list of acceptable codes are to be configured into Affinity Domain. The value for this attribute shall be taken from this list.
n/a	Not Applicable – may be used with an optionality R2 or O attribute to indicate it is not to be used.

DS	Document Source – value comes from the Document Source actor. Use Source/Value column or Extended Discussion to give details.
O	Other – Extended Discussion must be 'yes' and details given in an Extended Discussion.

- **Source/Value** – This column indicates the source or the value used.

The following tables are intended to be summaries of the mapping and transforms. The accompanying sections labeled 'Extended Discussion' are to contain the details as necessary.

4.1 Medical Document Binding to XDS, XDM and XDR

This binding defines a transformation that generates metadata for the XDSDocumentEntry element of appropriate transactions from the XDS, XDM and XDR profiles given a medical document and information from other sources. The medical document refers to the document being stored in a repository that will be referenced in the registry. The other sources of information include the configuration of the Document Source actor, the Affinity Domain, the site or facility, local agreements, other documents in the registry/repository, and this Content Profile.

In many cases, the CDA document is created for the purposes of sharing within an affinity domain. In these cases the context of the CDA and the context of the affinity domain are the same, in which case the following mappings shall apply.

In other cases, the CDA document may have been created for internal use, and are subsequentyly being shared. In these cases the context of the CDA document would not neccessarily coincide with that of the affinity domain, and the mappings below would not necessarily apply.

Please note the specifics given in the table below.

4.1.1 XDSDocumentEntry Metadata

XDSDocumentEntry Attribute	Optional?	Source Type	Source/ Value
availabilityStatus	R	DS	
authorInstitution	R2	SAT	$inst <= /ClinicalDocument/author /assignedAuthor /representedOrganization The authorInstitution can be formated using the following XPath expression, where **$inst** in the expression below represents the representedOrganization. concat($inst/name)

authorPerson	R2	SAT	$person <= /ClinicalDocument/author The author can be formatted using the following XPath expression, where **$person** in the expression below represents the author. concat($person/id/@extension,"^", $person/assignedPerson/name/family,"^", $person/assignedPerson/name/given[1],"^", $person/assignedPerson/name/given[2],"^", $person/assignedPerson/name/suffix,"^", $person/assignedPerson/name/prefix,"^", "^^^&", $person/id/@root,"&ISO")
authorRole	R2	SAT	This metadata element should be based on a mapping of the participation function defined in the CDA document to the set of author roles configured for the affinity domain. If the context of the CDA coincides with that of the affinity domain, then the following x-path may be appropriate: /ClincicalDocument/author/ participationFunction
authorSpecialty	R2	SAT	This metadata element should be based on a mapping of the code associated with the assignedAuthor to detailed defined classification system for healthcare providers such configured in the affinitity domain. Possible classifications include those found in SNOMED-CT, or the HIPAA Healthcare Provider Taxonomy. If the context of the CDA coincides with that of the affinity domain, then the following x-path may be appropriate: /ClinicalDocument/author/ assignedAuthor/code
classCode	R	CADT	Derived from a mapping of /ClinicalDocument/code/@code to an Affinity Domain specified coded value to use and coding system. Affinity Domains are encouraged to use the appropriate value for Type of Service, based on the LOINC Type of Service (see Page 53 of the LOINC User's Manual). Must be consistent with /ClinicalDocument/code/@code
classCodeDisplayName	R	CADT	DisplayName of the classCode derived. Derived from a mapping of /ClinicalDocument/code/@code to the appropriate Display Name based on the Type of Service. Must be Consitent with /ClinicalDocument/code/@code
confidentialityCode	R	CADT	Derived from a mapping of /ClinicalDocument/confidentialityCode/@code to an Affinity Domain specified coded value and coding system. When using the BPPC profile, the confidentialyCode may also be obtained from the <authorization> element. /ClinicalDocument/ confidentialityCode/@code -AND/OR-

			/ClinicalDocument/authorization/ consent[templateId/@root= '1.3.6.1.4.1.19376.1.5.3.1.2.5'] /code/@code
comments	O	DS	
creationTime	R	SAT	/ClinicalDocument/effectiveTime Times specified in clinical documents may be specified with a precision in fractional sections, and may contain a time zone offset. In the XDS Metadata, it can be precise to the second, and is always given in UTC, so the timezone offset if present must be added to the current time to obtain the UTC time.
entryUUID	R	DS	
eventCodeList	O	CADT	These values express a collection of keywords that may be relevant to the consumer of the documents in the registry. They may come from anywhere in the CDA document, according to its purpose.
eventCodeDisplayNameList	R (if event Code is valued)	CADT	These are the display names for the collection of keywords described above.
formatCode	R	FM	The format code for each PCC Document content profile is provided within the document specifications.
healthcareFacilityTypeCode	R	CAD	A fixed value assigned to the Document Source and configured form a set of Affinity Domain defined values. Must be concistent with /clinicalDocument/code
healthcareFacility TypeCodeDisplay Name	R	CAD	Must be concistent with /clinicalDocument/code
intendedRecipient (for XDR, XDM)	O	SAT	$person <= /ClinicalDocument/intendedRecipient and/or $inst <= /ClinicalDocument/intendedRecipient/receivedOrganization The intendedRecipient can be formated using the following XPath expression, where **$inst** in the expression below represents the receivedOrganization and where **$person** in the expression below represents the intendedRecipient. concat($person/id/@extension,"^", $person/informationRecipient/name/family,"^", $person/informationRecipient/name/given[1],"^", $person/informationRecipient/name/given[2],"^",

			$person/informationRecipient/name/suffix,"^", $person/informationRecipient/name/prefix,"^", "^^^&", $person/id/@root,"&ISO", "|" $inst/name) "^^^^^&", $inst/id/@root, "&ISO", "^^^^", $inst/id/@extension) -->
languageCode	R	SA	/ClinicalDocument/languageCode
legalAuthenticator	O	SAT	$person <= /ClinicalDocument/ legalAuthenticator The legalAuthenticator can be formatted using the following XPath expression, where **$person** in the expression below represents the legalAuthenticator. concat($person/id/@extension,"^", $person/assignedPerson/name/family,"^", $person/assignedPerson/name/given[1],"^", $person/assignedPerson/name/given[2],"^", $person/assignedPerson/name/suffix,"^", $person/assignedPerson/name/prefix,"^", "^^^&", $person/id/@root,"&ISO")
mimeType	R	FM	text/xml
parentDocumentRelationship	R (when applicable)	DS	Local document versions need not always be published, and so no exact mapping can be determined from the content of the CDA document. The parentDocumentRelationship may be determined in some configurations from the relatedDocument element present in the CDA dsocument. If the context of the CDA coincides with that of the affinity domain, then the following x-path may be appropriate: /ClinicalDocument/relatedDocument/@typeCode
parentDocumentId	R (when parent Document Relationship is present)	DS	Local document versions need not always be published, and so no exact mapping can be determined from the content of the CDA document. The parentDocumentId may be determined in some configurations from the relatedDocument element present in the CDA dsocument. If the context of the CDA coincides with that of the affinity domain, then the following x-path may be appropriate: $docID <= /ClinicalDocument/ relatedDocument/parentDocument/id The parentDocumentId can be formatted using the following XPath expression, where **$docID** in the expression below represents the identifier. concat($docID/@root,"^", $docID/@extension)
patientId	R	DS	The XDS Affinity Domain patient ID can be mapped from the patientRole/id element using transactions from the ITI

			PIX or PDQ profiles. See sourcePatientId below. If the context of the CDA coincides with that of the affinity domain, then the following x-path may be appropriate: $patID <= /ClinicalDocument/recordTarget/ patientRole/id
practiceSettingCode	R	CAD	This elements should be based on a coarse classification system for the class of specialty practice. Recommend the use of the classification system for Practice Setting, such as that described by the Subject Matter Domain in LOINC.
practiceSettingCodeDisplayName	R	CAD	This element shall contain the display names associated with the codes described above.
serviceStartTime	R2	SAT	/ClinicalDocument/documentationOf/ serviceEvent/effectiveTime/low/ @value Times specified in clinical documents may be specified with a precision in fractional sections, and may contain a time zone offset. In the XDS Metadata, it can be precise to the second, and is always given in UTC, so the timezone offset if present must be added to the current time to obtain the UTC time.
serviceStopTime	R2	SAT	/ClinicalDocument/documentationOf/ serviceEvent/effectiveTime/high/ @value Times specified in clinical documents may be specified with a precision in fractional sections, and may contain a time zone offset. In the XDS Metadata, it can be precise to the second, and is always given in UTC, so the timezone offset if present must be added to the current time to obtain the UTC time.
sourcePatientId	R	SAT	$patID <= /ClinicalDocument/recordTarget/ patientRole/id The patientId can be formatted using the following XPath expression, where **$patID** in the expression below represents the appropriate identifier. concat($patID/@extension,"^^^&", $patID/@root, "&ISO")
sourcePatientInfo	R	SAT	/ClinicalDocument/recordTarget/ patientRole The sourcePatientInfo metadata element can be assembled from various components of the patientRole element in the clinical document.
title	O	SA	/ClinicalDocument/title

typeCode	R	CADT	/ClinicalDocument/code/@code The typeCode should be mapped from the ClinicalDocument/code element to a set of document type codes configured in the affinity domain. One suggested coding system to use for typeCode is LOINC, in which case the mapping step can be omitted.
typeCodeDisplay Name	R	CADT	/ClinicalDocument/code/@displayName
uniqueId	R	SAT	$docID <= /ClinicalDocument/id The uniqueId can be formatted using the following XPath expression, where **$docID** in the expression below represents the identifier. concat($docID/@root,"^", $docID/@extension)

4.1.1.1 XDSSubmissionSet Metadata

The submission set metadata is as defined for XDS, and is not necessarily affected by the content of the clinical document. Metadata values in an XDSSubmissionSet with names identical to those in the XDSDocumentEntry may be inherited from XDSDocumentEntry metadata, but this is left to affinity domain policy and/or application configuration.

4.1.1.2 Use of XDS Submission Set

This content format uses the XDS Submission Set to create a package of information to send from one provider to another. All documents referenced by the Medical Summary in this Package must be in the submission set.

4.1.1.3 Use of XDS Folders

No specific requirements identified.

4.1.1.4 Configuration

IHE Content Profiles using this binding require that Content Creators and Content Consumers be configurable with institution and other specific attributes or parameters. Implementers should be aware of these requirements to make such attributes easily configurable. There shall be a mechanism for the publishing and distribution of style sheets used to view clinical documents.

5 Namespaces and Vocabularies

This section lists the namespaces and identifiers defined or referenced by the IHE PCC Technical Framework, and the vocabularies defined or referenced herein.

The following vocabularies are referenced in this document. An extensive list of registered vocabularies can be found at http://hl7.amg-hq.net/oid/frames.cfm.

codeSystem	codeSystemName	Description
1.3.6.1.4.1.19376.1.5.3.1	IHE PCC Template Identifiers	This is the root OID for all IHE PCC Templates. A list of PCC templates can be found below in CDA Release 2.0 Content Modules.
1.3.6.1.4.1.19376.1.5.3.2	IHEActCode	See IHEActCode Vocabulary below
1.3.6.1.4.1.19376.1.5.3.3	IHE PCC RoleCode	See IHERoleCode Vocabulary below
1.3.6.1.4.1.19376.1.5.3.4		Namespace OID used for IHE Extensions to CDA Release 2.0
2.16.840.1.113883.10.20.1	CCD Root OID	Root OID used for by ASTM/HL7 Continuity of Care Document
2.16.840.1.113883.5.112	RouteOfAdministration	See the HL7 RouteOfAdministration Vocabulary
2.16.840.1.113883.5.1063	SeverityObservation	See the HL7 SeverityObservation Vocabulary
2.16.840.1.113883.6.1	LOINC	Logical Observation Identifier Names and Codes
2.16.840.1.113883.6.96	SNOMED-CT	SNOMED Controlled Terminology
2.16.840.1.113883.6.103	ICD-9CM (diagnosis codes)	International Classification of Diseases, Clinical Modifiers, Version 9
2.16.840.1.113883.6.104	ICD-9CM (procedure codes)	International Classification of Diseases, Clinical Modifiers, Version 9
2.16.840.1.113883.6.26	MEDCIN	A classification system from MEDICOMP Systems.
2.16.840.1.113883.6.88	RxNorm	RxNorm
2.16.840.1.113883.6.63	FDDC	First DataBank Drug Codes
2.16.840.1.113883.6.12	C4	Current Procedure Terminology 4 (CPT-4) codes.
2.16.840.1.113883.6.257	Minimum Data Set for Long Term Care	The root OID for Minimum Data Set Answer Lists

Comment [l1]: This takes reader to later pages in this document – intended, kwb

5.1.1 IHE Format Codes

The table below lists the format codes, template identifiers and media types used by the IHE Profiles specified in the PCC Technical Framework, and also lists, for reference purposes the same values for other selected IHE Profiles from other committees.
Note that the code system for these codes is **1.3.6.1.4.1.19376.1.2.3** as assigned by the ITI Domain for codes used for the purposes of cross-enterprise document sharing (XDS).
For more information see XDS Coding System (1.3.6.1.4.1.19376.1.2.3).

Comment [I2]: Keith – this link does not work

Profile	Format Code	Media Type	Template ID
2006 Profiles			
Medical Summaries (XDS-MS)	urn:ihe:pcc:xds-ms:2007	text/xml	1.3.6.1.4.1.19376.1.5.3.1.1.3 (Referral) 1.3.6.1.4.1.19376.1.5.3.1.1.4 (Discharge Summary)
2007 Profiles			
Exchange of Personal Health Records (XPHR)	urn:ihe:pcc:xphr:2007	text/xml	1.3.6.1.4.1.19376.1.5.3.1.1.5 (Extract) 1.3.6.1.4.1.19376.1.5.3.1.1.6 (Update)
Emergency Department Referral (EDR)	urn:ihe:pcc:edr:2007	text/xml	1.3.6.1.4.1.19376.1.5.3.1.1.10
2008 Profiles			
Antepartum Summary (APS)	urn:ihe:pcc:aps:2007	text/xml	1.3.6.1.4.1.19376.1.5.3.1.1.11.2
Emergency Department Encounter Summary (EDES)	urn:ihe:pcc:edes:2007	text/xml	1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1 (Triage Note) 1.3.6.1.4.1.19376.1.5.3.1.1.13.1.2 (Nursing Note) 1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3 (Composite Triage and Nursing Note) 1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4 (Physician Note)
2009 Profiles			
Antepartum Record (APR) - History and Physical	urn:ihe:pcc:apr:handp:2008	text/xml	1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1 (Antepartum History and Physical)
Antepartum Record (APR) - Laboratory	urn:ihe:pcc:apr:lab:2008	text/xml	1.3.6.1.4.1.19376.1.5.3.1.1.16.1.2 (Antepartum Laboratory)
Antepartum Record (APR) - Education	urn:ihe:pcc:apr:edu:2008	text/xml	1.3.6.1.4.1.19376.1.5.3.1.1.16.1.3 (Antepartum Education)

Immunization Registry Content (IRC)	urn:ihe:pcc:irc:2008	text/xml	1.3.6.1.4.1.19376.1.5.3.1.1.18.1.2 (Immunization Detail)
Cancer Registry Content (CRC)	urn:ihe:pcc:crc:2008	text/xml	
Care Management (CM)	urn:ihe:pcc:cm:2008	text/xml	
ITI Profiles			
Scanned Documents (PDF)	urn:ihe:iti:xds-sd:pdf:2008	text/xml	1.3.6.1.4.1.19376.1.2.20 (Scanned Document)
Scanned Documents (text)	rn:ihe:iti:xds-sd:text:2008	text/xml	1.3.6.1.4.1.19376.1.2.20 (Scanned Document)
Basic Patient Privacy Consents	urn:ihe:iti:bppc:2007	text/xml	1.3.6.1.4.1.19376.1.5.3.1.1.7 (BPPC with *no* scanned part)
Basic Patient Privacy Consents with Scanned Document	urn:ihe:iti:bppc-sd:2007	text/xml	1.3.6.1.4.1.19376.1.5.3.1.1.7.1 (BPPC *with* scanned part)
LAB Profiles			
CDA Laboratory Report	urn:ihe:lab:xd-lab:2008	text/xml	1.3.6.1.4.1.19376.1.3.3 (Laboratory Report)

5.1.2 IHEActCode Vocabulary

CCD ASTM/HL7 Continuity of Care Document

CCR ASTM CCR Implementation Guide

The IHEActCode vocabulary is a small vocabulary of clinical acts that are not presently supported by the HL7 ActCode vocabulary. The root namespace (OID) for this vocabulary is 1.3.5.1.4.1.19376.1.5.3.2. These vocabulary terms are based on the vocabulary and concepts used in the CCR and CCD standards listed above.

Code	Description
COMMENT	This is the act of commenting on another act.
PINSTRUCT	This is the act of providing instructions to a patient regarding the use of medication.
FINSTRUCT	This is the act of providing instructions to the supplier regarding the fulfillment of the medication order.
IMMUNIZ	The act of immunization of a patient using a particular substance or class of substances identified using a specified vocabulary. Use of this vocabulary term requires the use of either the SUBSTANCE or SUBSTCLASS qualifier described below, along with an identified substance or

	class of substances.
DRUG	The act of treating a patient with a particular substance or class of substances identified using a specified vocabulary. Use of this vocabulary term requires the use of either the SUBSTANCE or SUBSTCLASS qualifier described below, along with an identified substance or class of substances.
INTOL	An observation that a patient is somehow intollerant of (e.g., allergic to) a particular substance or class of substances using a specified vocabulary. Use of this vocabulary term requires the use of either the SUBSTANCE or SUBSTCLASS qualifier described below, along with an identified substance or class of substances.
SUBSTANCE	A qualifier that identifies the substance used to treat a patient in an immunization or drug treatment act. The substance is expected to be identified using a vocabulary such as RxNORM, SNOMED CT or other similar vocabulary and should be specific enough to identify the ingredients of the substance used.
SUBSTCLASS	A qualifier that identifies the class of substance used to treat a patient in an immunization or drug treatment act. The class of substances is expected to be identified using a vocabulary such as NDF-RT, SNOMED CT or other similar vocabulary, and should be broad enough to classify substances by mechanism of action (e.g., Beta Blocker), intended effect (Dieuretic, antibiotic) or ...

5.1.3 IHERoleCode Vocabulary

545 The IHERoleCode vocabulary is a small vocabulary of role codes that are not presently supported by the HL7 Role Code vocabulary. The root namespace (OID) for this vocabulary is 1.3.5.1.4.1.19376.1.5.3.3.

Code	Description
EMPLOYER	The employer of a person.
SCHOOL	The school in which a person is enrolled.
AFFILIATED	An organization with which a person is affiliated (e.g., a volunteer organization).
PHARMACY	The pharmacy a person uses.

6 CDA Release 2.0 Content Modules

6.1 HL7 Version 3.0 Content Modules

This section contains content modules based upon the HL7 CDA Release 2.0 Standard, and related standards and/or implementation guides.

6.1.1 CDA Document Content Modules

6.1.1.1 Medical Documents Specification 1.3.6.1.4.1.19376.1.5.3.1.1.1

This section defines the base set of constraints used by almost all medical document profiles described the PCC Technical Framework.

6.1.1.1.1 Standards

CDAR2	HL7 CDA Release 2.0
CDTHP	CDA for Common Document Types History and Physical Notes (DSTU)
XMLXSL	Associating Style Sheets with XML documents

6.1.1.1.2 Conformance

CDA Release 2.0 documents that conform to the requirements of this content module shall indicate their conformance by the inclusion of the appropriate <templateId> elements in the header of the document. This is shown in the sample document below.

```
<ClinicalDocument xmlns='urn:hl7-org:v3'>
  <typeId extension="POCD_HD000040" root="2.16.840.1.113883.1.3"/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.1'/>
  <id root=' ' extension=' '/>
  <code code=' ' displayName=' '
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Medical Documents</title>
  <effectiveTime value='20081004012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
  <languageCode code='en-US'/>
     :
  <component><structuredBody>

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

Figure 6.1-1Sample Medical Documents Document

```
<!-- Verify the document type code -->
<assert test='cda:code[@code = "{{{LOINC}}}"]'>
  Error: The document type code of a Medical Documents must be {{{LOINC}}}
</assert>
<assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
  Error: The document type code must come from the LOINC code
  system (2.16.840.1.113883.6.1).
</assert>
```

6.1.1.1.3 Specification

The constraints for encoding of the CDA Header (Level 1) can be found in the CDA for Common Document Types History and Physical Implementation Guide, in the section 2. CDA Header -- General Constraints.

- IHE Medical Documents **SHALL** follow all constraints found in that section with the exception of the constraint on realmcode found in **CONF-HP-10:**.
- IHE Medical Documents which are implemented for the US Realm **SHALL** follow ALL constraints found in that section, and **SHALL** use both the IHE Medical Document templateId (1.3.6.1.4.1.19376.1.5.3.1.1.1) and the HL7 General Header Constraints templateId (2.16.840.1.113883.10.20.3).}}

Realm	Constraints	Template IDs Required
Universal	**CONF-HP-1** through **CONF-HP-9** **CONF-HP-11** through **CONF-HP-40**	1.3.6.1.4.1.19376.1.5.3.1.1.1
US	**CONF-HP-1** through **CONF-HP-40**	1.3.6.1.4.1.19376.1.5.3.1.1.1 2.16.840.1.113883.10.20.3

6.1.1.1.4 Style Sheets

Document sources **SHOULD** provide an XML style sheet to render the content of the Medical Summary document. The output of this style sheet **SHALL** be an XHTML Basic (see http://www.w3.org/TR/xhtml-basic/) document that renders the clinical content of a Medical Summary Document as closely as possible as the sending provider viewed the completed document. When a style sheet is provided, at least one processing instruction **SHALL** be included in the document that including a link to the URL for the XML style sheet. To ensure that the style sheet is available to all receivers, more than one stylesheet link **MAY** be included.

When a stylesheet is used within an XDS Affinity domain, the link to it **SHALL** be provided using an HTTPS or HTTP URL.

```
<?xml-stylesheet href='https://foobar:8080/mystylesheet.xsl' type='text/xsl'?>
```

When using XDM or XDR to exchange documents, the stylesheet **SHALL** also be exchanged on the media. The link to the stylesheet **SHALL** be recorded as a relative URL.

```
<?xml-stylesheet href='../../stylesheets/mystylesheet.xsl' type='text/xsl'?>
```

Style sheets **SHOULD NOT** rely on graphic or other media resources. If graphics other media resources are used, these **SHALL** be accessible in the same way as the stylesheet. The Content Creator **NEED NOT** be the provider of the resources (stylesheet or graphcs).

When a Content Creator provides a style sheet, Content Consumers **MUST** provide a mechanism to render the document with that style sheet. Content Consumers **MAY** view the document with their own style sheet.

To record the stylesheet within a CDA Document that might be used in both an XDS and XDM environment, more than one stylesheet processing instruction is required. In this case, all style sheet processing instructions included **MUST** include the alternate='yes' attribute.

```
<?xml-stylesheet href='https://foobar:8080/mystylesheet.xsl' type='text/xsl'
alternate='yes'?>
<?xml-stylesheet href='../../stylesheets/mystylesheet.xsl' type='text/xsl'
alternate='yes'?>
```

A Content Consumer that is attempting to render a document using the document supplied stylesheet **MAY** use the first style sheet processing instruction for which it is able to obtain the style sheet content, and **SHALL NOT** report any errors if it is able to find at least one stylesheet to render with.

6.1.1.1.5 Distinctions of None

Information that is sent **MUST** clearly identify distinctions between

None

> It is known with complete confidence that there are none. Used in the context of problem and medication lists, this indicates that the sender knows that there is no relevant information that can be sent.

None Known

> None are known at this time, but it is not known with complete confidence than none exist. Used in the context of allergy lists, where essentially, it is impossible to prove the negative that no allergies exist, it is only possible to assert that none have been found to date.

None Known Did Ask

> None are known at this time, and it is not known with complete confidence than none exist, but the information was requested. Also used in the context of allergy lists, where essentially, it is impossible to prove the negative that no allergies exist, it is only possible to assert that none have been found to date.

Unknown

> The information is not known, or is otherwise unavailable.

In the context of CDA, sections that are required to be present but have no information should use one of the above phrases where appropriate.

An appropriate machine readable entry shall be present for problems, medications and allergies to indicate the reason that no information. Codes for recording unknown or no information are provided in the section on the Problem, Allergy and Medications Entry.

6.1.1.2 Medical Summary Specification 1.3.6.1.4.1.19376.1.5.3.1.1.2

A medical summary contains a snapshot of the patient's medical information, including at the very least, a list of the patients problems, medications and allergies. A Medical Summary is an abstract template that is expected to be further refined by additional document templates. `

6.1.1.2.1 Parent Template

This document is an instance of the Medical Document template.

6.1.1.2.2 Standards

CDAR2 HL7 CDA Release 2.0

6.1.1.2.3 Specification

Data Element Name	Opt	Template ID
Problem Concern Entry	R	1.3.6.1.4.1.19376.1.5.3.1.4.5.2
Allergy Concern Entry	R	1.3.6.1.4.1.19376.1.5.3.1.4.5.3
Medications	R	1.3.6.1.4.1.19376.1.5.3.1.4.7

Table 6.1.1.2.3-1

6.1.1.2.4 Conformance

CDA Release 2.0 documents that conform to the requirements of this content module shall indicate their conformance by the inclusion of the appropriate <templateId> elements in the header of the document. This is shown in the sample document below. A CDA Document may conform to more than one template. This content module inherits from the Medical Document content module, and so must conform to the requirements of that template as well, thus all <templateId> elements shown in the example below shall be included.

```
<ClinicalDocument xmlns='urn:hl7-org:v3'>
  <typeId extension="POCD_HD000040" root="2.16.840.1.113883.1.3"/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.1'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.2'/>
  <id root=' ' extension=' '/>
  <code code=' ' displayName=' '
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Medical Summary</title>
  <effectiveTime value='20081004012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
  <languageCode code='en-US'/>
     :
  <component><structuredBody>

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

Figure 6.1-2Sample Medical Summary Document

6.1.1.2.5 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.2'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.2"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The Medical Summary can only be used on Clinical Documents.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.1"]'>
     Error: The parent template identifier for Medical Summary is not present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='cda:code[@code = "{{{LOINC}}}"]'>
     Error: The document type code of a Medical Summary must be {{{LOINC}}}
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The document type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.5.2"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Medical Summary Document must contain a(n) Problem Concern Entry Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.2
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.5.3"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Medical Summary Document must contain a(n) Allergy Concern Entry Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.2
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.7"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Medical Summary Document must contain a(n) Medications Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.2
   </assert>
 </rule>
</pattern>
```

6.1.1.2.6 Document Specification

A medical summary is a type of medical document, and incorporates the constraints defined for Medical Documents, and requires the recording of Problems, Allergies and Medications.

6.1.1.3 Referral Summary Specification 1.3.6.1.4.1.19376.1.5.3.1.1.3

The use case is described fully in PCC TF-1:3.2.1 for the Ambulatory Specialist Referral. Briefly, it involves a "collaborative" transfer of care for the referral of a patient from a primary care provider (PCP) to a specialist. The important document data elements identified by physicians and nurses for this use case are listed in the table below under the column "Data Elements". These were then mapped to the categories given HL7 Care Record Summary Implementation Guide, and HL7 CDA Release 2.0. These mappings are provided in the next two columns.

A referral summary is a type of Medical Summary, and incorporates the constraints defined for a Medical Summary above. This section defines additional constraints for Medical Summary Content used in a Referral summary. These tables present the Categories, as defined in Section 3 of CRS. In no case are these IHE requirements less strict than those defined by CRS.

6.1.1.3.1 Format Code

The XDSDocumentEntry format code for this content is **urn:ihe:pcc:xds-ms:2007**

6.1.1.3.2 Parent Template

This document is an instance of the Medical Summary template.

6.1.1.3.3 Standards

CDAR2	HL7 CDA Release 2.0
CRS	HL7 Care Record Summary
CCD	ASTM/HL7 Continuity of Care Document

6.1.1.3.4 Data Element Index

Data Elements	HL7 Care Record Summary	CDA Release 2.0
Reason for Referral	Reason for Referral	REASON FOR REFERRAL
History Present Illness	History of Present Illness	HISTORY OF PRESENT ILLNESS
Active Problems	Conditions	PROBLEM LIST
Current Meds	Medications	HISTORY OF MEDICATION USE
Allergies	Allergies and Adverse Reactions	HISTORY OF ALLERGIES
History of Past Illness	Conditions	HISTORY OF PAST ILLNESS

List of Surgeries	Past Surgical History	HISTORY OF PRIOR SURGERIES
Immunizations	Immunizations	HISTORY OF IMMUNIZATIONS
Family History	Family History	HISTORY OF FAMILY ILLNESS
Social History	Social History	SOCIAL HISTORY
Pertinent Review of Systems	Review of Systems	REVIEW OF SYSTEMS
Vital Signs	Physical Exam	VITAL SIGNS
Physical Exam	Physical Exam	GENERAL STATUS, PHYSICAL FINDINGS
Relevant Diagnostic Surgical Procedures / Clinical Reports (including links)	Studies and Reports	RELEVANT DIAGNOSTIC TESTS AND/OR LABORATORY DATA
Relevant Diagnostic Test and Reports (Lab, Imaging, EKG's, etc.) including links.	Studies and Reports	RELEVANT DIAGNOSTIC TESTS AND/OR LABORATORY DATA
Plan of Care (new meds labs, or x-rays ordered)	Care Plan	TREATMENT PLAN
Advance Directives	Advance Directives	ADVANCE DIRECTIVES
Patient Administrative Identifiers	Header	patientRole/id
Pertinent Insurance Information	Participant	participant[@classCode='HLD']
Data needed for state and local referral forms, if different than above	Optional Sections	section

6.1.1.3.5 Specification

Table 6.1.1.3.5-1

Data Element Name	Opt	Template ID
Reason for Referral	R	1.3.6.1.4.1.19376.1.5.3.1.3.1
History Present Illness	R	1.3.6.1.4.1.19376.1.5.3.1.3.4
Active Problems	R	1.3.6.1.4.1.19376.1.5.3.1.3.6
Current Meds	R	1.3.6.1.4.1.19376.1.5.3.1.3.19
Allergies	R	1.3.6.1.4.1.19376.1.5.3.1.3.13
History of Past Illness	R2	1.3.6.1.4.1.19376.1.5.3.1.3.8
List of Surgeries	R2	1.3.6.1.4.1.19376.1.5.3.1.3.11
Immunizations	R2	1.3.6.1.4.1.19376.1.5.3.1.3.23

Family History	R2	1.3.6.1.4.1.19376.1.5.3.1.3.14
Social History	R2	1.3.6.1.4.1.19376.1.5.3.1.3.16
Pertinent Review of Systems	O	1.3.6.1.4.1.19376.1.5.3.1.3.18
Vital Signs	R2	1.3.6.1.4.1.19376.1.5.3.1.3.25
Physical Exam	R2	1.3.6.1.4.1.19376.1.5.3.1.3.24
Relevant Diagnostic Surgical Procedures / Clinical Reports and Relevant Diagnostic Test and Reports (Lab, Imaging, EKG's, etc.) including links.	R2	1.3.6.1.4.1.19376.1.5.3.1.3.27
Plan of Care (new meds, labs, or x-rays ordered)	R2	1.3.6.1.4.1.19376.1.5.3.1.3.31
Advance Directives	R2	1.3.6.1.4.1.19376.1.5.3.1.3.34
Patient Administrative Identifiers Handled by the Medical Documents Content Profile by reference to constraints in HL7 CRS.	R	
Pertinent Insurance Information Refer to Appropriate Payers Section -- TBD	R2	
Data needed for state and local referral forms, if different than above These are handed by including additional sections within the summary.	R2	

6.1.1.3.6 Conformance

CDA Release 2.0 documents that conform to the requirements of this content module shall indicate their conformance by the inclusion of the appropriate <templateId> elements in the header of the document. This is shown in the sample document below. A CDA Document may conform to more than one template. This content module inherits from the Medical Summary content module, and so must conform to the requirements of that template as well, thus all <templateId> elements shown in the example below shall be included.

```
<ClinicalDocument xmlns='urn:hl7-org:v3'>
  <typeId extension="POCD_HD000040" root="2.16.840.1.113883.1.3"/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.2'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.3'/>
  <id root=' ' extension=' '/>
  <code code=' ' displayName=' '
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Referral Summary</title>
  <effectiveTime value='20081004012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
  <languageCode code='en-US'/>
    :
  <component><structuredBody>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.1'/>
        <!-- Required Reason for Referral Section content -->
      </section>
    </component>
```

```
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.4'/>
        <!-- Required History Present Illness Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.6'/>
        <!-- Required Active Problems Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.19'/>
        <!-- Required Current Meds Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.13'/>
        <!-- Required Allergies Section content -->
      </section>
    </component>
```

```
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.8'/>
        <!-- Required if known History of Past Illness Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.11'/>
        <!-- Required if known List of Surgeries Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.23'/>
        <!-- Required if known Immunizations Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.14'/>
        <!-- Required if known Family History Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.16'/>
        <!-- Required if known Social History Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.18'/>
        <!-- Optional Pertinent Review of Systems Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.25'/>
        <!-- Required if known Vital Signs Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.24'/>
        <!-- Required if known Physical Exam Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.27'/>
        <!-- Required if known Relevant Diagnostic Surgical Procedures / Clinical Reports
and Relevant Diagnostic Test and Reports Section content -->
      </section>
    </component>
```

```
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.31'/>
        <!-- Required if known Plan of Care (new meds, labs, or x-rays ordered) Section
content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.34'/>
        <!-- Required if known Advance Directives Section content -->
      </section>
    </component>


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

Figure 6.1-3 Sample Referral Summary Document

6.1.1.3.7 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.3'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.3"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The Referral Summary can only be used on Clinical Documents.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.2"]'>
     Error: The parent template identifier for Referral Summary is not present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='cda:code[@code = "{{{LOINC}}}"]'>
     Error: The document type code of a Referral Summary must be {{{LOINC}}}
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The document type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Referral Summary Document must contain a(n) Reason for Referral Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.4"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Referral Summary Document must contain a(n) History Present Illness
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.6"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Referral Summary Document must contain a(n) Active Problems Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.19"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Referral Summary Document must contain a(n) Current Meds Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.13"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Referral Summary Document must contain a(n) Allergies Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.8"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  Referral Summary Document should contain a(n) History of Past Illness
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.11"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  Referral Summary Document should contain a(n) List of Surgeries
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.23"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  Referral Summary Document should contain a(n) Immunizations Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.14"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  Referral Summary Document should contain a(n) Family History Section.
```

```
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.16"]'>
      <!-- Alert on any missing required if known elements -->
      Warning: The  Referral Summary Document should contain a(n) Social History Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.18"]'>
      <!-- Note any missing optional elements -->
      Note: This Referral Summary Document does not contain a(n) Pertinent Review of
Systems Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.25"]'>
      <!-- Alert on any missing required if known elements -->
      Warning: The  Referral Summary Document should contain a(n) Vital Signs Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.24"]'>
      <!-- Alert on any missing required if known elements -->
      Warning: The  Referral Summary Document should contain a(n) Physical Exam Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.27"]'>
      <!-- Alert on any missing required if known elements -->
      Warning: The  Referral Summary Document should contain a(n) Relevant Diagnostic
Surgical Procedures / Clinical Reports and Relevant Diagnostic Test and Reports Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.31"]'>
      <!-- Alert on any missing required if known elements -->
      Warning: The  Referral Summary Document should contain a(n) Plan of Care (new meds,
labs, or x-rays ordered) Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.34"]'>
      <!-- Alert on any missing required if known elements -->
      Warning: The  Referral Summary Document should contain a(n) Advance Directives
Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
    </assert>
    <assert test='.//cda:templateId[@root = ""]'>
      <!-- Verify that all required data elements are present -->
      Error: The Referral Summary Document must contain a(n) Patient Administrative
Identifiers Entry.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
    </assert>
    <assert test='.//cda:templateId[@root = ""]'>
      <!-- Alert on any missing required if known elements -->
      Warning: The  Referral Summary Document should contain a(n) Pertinent Insurance
Information Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
    </assert>
    <assert test='.//cda:templateId[@root = ""]'>
      <!-- Alert on any missing required if known elements -->
      Warning: The  Referral Summary Document should contain a(n) Data needed for state
and local referral forms, if different than above Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.3
    </assert>
  </rule>
</pattern>
```


6.1.1.4 Discharge Summary Specification 1.3.6.1.4.1.19376.1.5.3.1.1.4

This use case is described fully in the XDS-MS profile found in PCC TF-1:3.2.2. Briefly, it involves an episodic transfer of care in the form of a patient discharge from a hospital to home. The important data elements identified by physicians and nurses for this use case are listed in the table below under the column "Data Elements". These are mapped to the categories given HL7 Care Record Summary Implementation Guide, and HL7 CDA Release 2.0 in the next two columns.

A discharge summary is a type of medical summary, and incorporates the constraints defined for Medical Summaries.

This section defines additional constraints for Medical Summary Content used in a Discharge Summary. These tables present the data elements described above, along with their optionality, and references to the section and template where these sections or header data elements are further defined.

In no case are these IHE requirements less strict than those defined by the HL7 Care Record Summary.

6.1.1.4.1 Format Code

The XDSDocumentEntry format code for this content is **urn:ihe:pcc:xds-ms:2007**

6.1.1.4.2 Parent Template

This document is an instance of the Medical Summary template.

6.1.1.4.3 Standards

CDAR2	HL7 CDA Release 2.0
CRS	HL7 Care Record Summary
CCD	ASTM/HL7 Continuity of Care Document

6.1.1.4.4 Data Element Index

Data Elements	HL7 Care Record Summary	CDA Release 2.0
Date of Admission	Header	encompassingEncounter/effectiveTime
Date of Discharge	Header	encompassingEncounter/effectiveTime
Participating Providers and Roles	Header	documentationOf/serviceEvent/performer
Discharge Disposition (who, how, where)	Care Plan	DISCHARGE DISPOSITION

Admitting Diagnosis	Conditions	HOSPITAL ADMISSION DX
History of Present Illness	History of Present Illness	HISTORY OF PRESENT ILLNESS
Hospital Course	Hospital Course	HOSPITAL COURSE
Discharge Diagnosis (including active and resolved problems)	Conditions	HOSPITAL DISCHARGE DX
Selected Medicine Administered during Hospitalization	Medications	HISTORY OF MEDICATION USE
Discharge Medications	Medications	HOSPITAL DISCHARGE MEDICATIONS
Allergies and adverse reactions	Allergies and Adverse Reactions	HISTORY OF ALLERGIES
Discharge Diet	Optionally found in Care Plan	DISCHARGE DIET
Review of Systems	Review of Systems	REVIEW OF SYSTEMS
Vital Signs (most recent, high/low/average)	Physical Exam	VITAL SIGNS
Functional Status	Functional Status	HISTORY OF FUNCTIONAL STATUS
Relevant Procedures and Reports (including links)	Studies and Reports	HOSPITAL DISCHARGE STUDIES
Relevant Diagnostic Tests and Reports (including links)	Studies and Reports	HOSPITAL DISCHARGE STUDIES
Plan of Care	Care Plan	TREATMENT PLAN
Administrative Identifiers	Header	patient/id
Pertinent Insurance Information	Header	participant[@classCode='HLD']

6.1.1.4.5 Specification

Data Element Name	Opt	Template ID
Active Problems	R	1.3.6.1.4.1.19376.1.5.3.1.3.6
Resolved Problems	R	1.3.6.1.4.1.19376.1.5.3.1.3.8
Discharge Diagnosis	R	1.3.6.1.4.1.19376.1.5.3.1.3.7
Admitting Diagnosis	R	1.3.6.1.4.1.19376.1.5.3.1.3.3
Selected Meds Administered	R2	1.3.6.1.4.1.19376.1.5.3.1.3.21
Discharge Meds	R	1.3.6.1.4.1.19376.1.5.3.1.3.22
Admission Medications	R2	1.3.6.1.4.1.19376.1.5.3.1.3.20

Allergies	R	1.3.6.1.4.1.19376.1.5.3.1.3.13
Hospital Course	R	1.3.6.1.4.1.19376.1.5.3.1.3.5
Advance Directives	O	1.3.6.1.4.1.19376.1.5.3.1.3.34
History of Present Illness	R2	1.3.6.1.4.1.19376.1.5.3.1.3.4
Functional Status	O	1.3.6.1.4.1.19376.1.5.3.1.3.17
Review of Systems	O	1.3.6.1.4.1.19376.1.5.3.1.3.18
Physical Examination	O	1.3.6.1.4.1.19376.1.5.3.1.3.24
Vital Signs	O	1.3.6.1.4.1.19376.1.5.3.1.3.25
Discharge Procedures Tests, Reports	O	1.3.6.1.4.1.19376.1.5.3.1.3.29
Plan of Care	R	1.3.6.1.4.1.19376.1.5.3.1.3.31
Discharge Diet	O	1.3.6.1.4.1.19376.1.5.3.1.3.33

Table 6.1.1.4.5-1

6.1.1.4.6 Conformance

CDA Release 2.0 documents that conform to the requirements of this content module shall indicate their conformance by the inclusion of the appropriate <templateId> elements in the header of the document. This is shown in the sample document below. A CDA Document may conform to more than one template. This content module inherits from the Medical Summary content module, and so must conform to the requirements of that template as well, thus all <templateId> elements shown in the example below shall be included.

```
<ClinicalDocument xmlns='urn:hl7-org:v3'>
  <typeId extension="POCD_HD000040" root="2.16.840.1.113883.1.3"/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.2'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.4'/>
  <id root=' ' extension=' '/>
  <code code=' ' displayName=' '
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Discharge Summary</title>
  <effectiveTime value='20081004012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
  <languageCode code='en-US'/>
     :
  <component><structuredBody>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.6'/>
        <!-- Required Active Problems Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.8'/>
        <!-- Required Resolved Problems Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.7'/>
        <!-- Required Discharge Diagnosis Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.3'/>
        <!-- Required Admitting Diagnosis Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.21'/>
        <!-- Required if known Selected Meds Administered Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.22'/>
        <!-- Required Discharge Meds Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.20'/>
        <!-- Required if known Admission Medications Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.13'/>
```

```
        <!-- Required Allergies Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.5'/>
        <!-- Required Hospital Course Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.34'/>
        <!-- Optional Advance Directives Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.4'/>
        <!-- Required if known History of Present Illness Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.17'/>
        <!-- Optional Functional Status Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.18'/>
        <!-- Optional Review of Systems Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.24'/>
        <!-- Optional Physical Examination Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.25'/>
        <!-- Optional Vital Signs Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.29'/>
        <!-- Optional Discharge Procedures Tests, Reports Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.31'/>
        <!-- Required Plan of Care Section content -->
      </section>
```

```
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.33'/>
        <!-- Optional Discharge Diet Section content -->
      </section>
    </component>


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

Figure 6.1-4Sample Discharge Summary Document

6.1.1.4.7 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.4'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.4"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The Discharge Summary can only be used on Clinical Documents.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.2"]'>
     Error: The parent template identifier for Discharge Summary is not present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='cda:code[@code = "{{{LOINC}}}"]'>
     Error: The document type code of a Discharge Summary must be {{{LOINC}}}
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The document type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.6"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Discharge Summary Document must contain a(n) Active Problems Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.8"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Discharge Summary Document must contain a(n) Resolved Problems Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.7"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Discharge Summary Document must contain a(n) Discharge Diagnosis Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.3"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Discharge Summary Document must contain a(n) Admitting Diagnosis Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.21"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  Discharge Summary Document should contain a(n) Selected Meds
Administered Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.22"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Discharge Summary Document must contain a(n) Discharge Meds Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.20"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  Discharge Summary Document should contain a(n) Admission Medications
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.13"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Discharge Summary Document must contain a(n) Allergies Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.5"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Discharge Summary Document must contain a(n) Hospital Course Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
```



```
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.34"]'>
     <!-- Note any missing optional elements -->
     Note: This Discharge Summary Document does not contain a(n) Advance Directives
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.4"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  Discharge Summary Document should contain a(n) History of Present
Illness Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.17"]'>
     <!-- Note any missing optional elements -->
     Note: This Discharge Summary Document does not contain a(n) Functional Status
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.18"]'>
     <!-- Note any missing optional elements -->
     Note: This Discharge Summary Document does not contain a(n) Review of Systems
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.24"]'>
     <!-- Note any missing optional elements -->
     Note: This Discharge Summary Document does not contain a(n) Physical Examination
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.25"]'>
     <!-- Note any missing optional elements -->
     Note: This Discharge Summary Document does not contain a(n) Vital Signs Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.29"]'>
     <!-- Note any missing optional elements -->
     Note: This Discharge Summary Document does not contain a(n) Discharge Procedures
Tests, Reports Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.31"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Discharge Summary Document must contain a(n) Plan of Care Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.33"]'>
     <!-- Note any missing optional elements -->
     Note: This Discharge Summary Document does not contain a(n) Discharge Diet Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.4
   </assert>
 </rule>
</pattern>
```

6.1.1.5 PHR Extract Specification 1.3.6.1.4.1.19376.1.5.3.1.1.5

The PHR Extract module describes the document content that summarizes information contained within a Personal Health Record. While a PHR can contain a great deal more information (including clinical documents, lab reported, images, trend data, monitoring data) et cetera, this content module only deals with the format of the summary information from the PHR.

An PHR Extract Module is a type of medical summary, and incorporates the constraints defined for Medical Summaries. While mappings have been provided to various standards, this content module conforms to the ASTM/HL7 Continuity of Care Document as well as this guide.

The following table describes the data elements that may be present in a PHR Extract. The first column of this table is drawn from the Common Data Elements in the PHR found in Appendix B of the AHIMA Report: The Role of the Personal Health Record in the EHR. Indented items in this column of the table provide more detail for the item they appear underneath.

These data elements were then mapped to the ASTM CCR, HL7 CDA, CRS and CCD and the implicit data elements referenced by the HL7 PHR Conformance Criteria.

A further requirement of transfers of information between PHR and EHR systems is that authorship of the information stored within the PHR shall be tracable through the various import/export cycles. PHR Manager Actors must be secure nodes, which requires logging of any updates to or accesses of PHR information. The DSG profile should be used to ensure that information coming into, or exiting these systems is verifiably authored.

6.1.1.5.1 Format Code

The XDSDocumentEntry format code for this content is **urn:ihe:pcc:xphr:2007**

6.1.1.5.2 Parent Template

This document is an instance of the Medical Summary template.

6.1.1.5.3 LOINC Code

The LOINC code for this document is **34133-9** Summary of Episode Note

6.1.1.5.4 Standards

AHIMA-PHR	AHIMA PHR Common Data Elements
CDAR2	HL7 CDA Release 2.0
CRS	HL7 Care Record Summary
CCD	ASTM/HL7 Continuity of Care Document
HL7-PHR	HL7 PHR Functional Model (Draft)
LOINC	Logical Observation Identifier Names and Codes

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6.1.1.5.5 Data Element Index

AHIMA Common Data Elements	ASTM Continuity of Care Record	HL7 Clincial Document Architecture, Care Record Summary or Continuity of Care Document	HL7 PHR Conformance Criteria
Personal Information	Patient	patientRole	Demographic Information
Name	Patient	patient/name	Demographic Information
Address	Patient	patientRole/addr	Contact Information
Contact Information	Patient	patientRole/telecom	Contact Information
Personal Identification Information	Patient	patientRole/id	Demographic Information
Gender	Patient	patient/administrativeGenderCode	Demographic Information
Date of Birth	Patient	patient/birthTime	Demographic Information
Marital Status	Patient	patient/maritalStatusCode	
Race	Patient	patient/raceCode	
Ethnicity	Patient	patient/ethnicGroupCode	Demographic Information
(Religious Affiliation[1])	Patient	patient/religiousAffiliationCode	Spiritual Affiliation / Considerations
Languages Spoken	Patient	patient/languageCommunication	
Employer and School Contacts	Social History		
Hazardous Working Conditions	Social History	HISTORY OF OCCUPATIONAL EXPOSURE	
Emergency Contacts	Support		
Healthcare Providers	Practitioners	serviceEvent/performer	Healthcare Providers

Insurance Providers	Insurance	Health Insurance or Pharmacy Insurance	
Pharamacy		performer	
Legal Documents and Medical Directives	Advance Directives	ADVANCE DIRECTIVES	Advance Directive
General Medical Information Height, Weight	Vital Signs	VITAL SIGNS	
Blood Type	Results	RELEVANT DIAGNOSTIC TESTS AND/OR LABORATORY DATA	
Last Physical or Checkup	Encounters	HISTORY OF OUTPATIENT VISITS	Clinical Encounters and Procedures List
Allergies and Drug Sensitivies	Alerts	HISTORY OF ALLERGIES	Allergy and Reaction List
Conditions	Problems	HISTORY OF PAST ILLNESS - or - PROBLEM LIST	Problem List
Surgeries	Procedures	HISTORY OF SURGICAL PROCEDURES	Clinical Encounters and Procedures List
Medications – Prescription and Non-Prescription	Medications	HISTORY OF MEDICATION USE	Medication List
Immunizations	Immunizations	HISTORY OF IMMUNIZATIONS	Immunizations List
Doctor Visits	Encounters	HISTORY OF OUTPATIENT VISITS	Clinical Encounters and Procedures List
Hospitalizations	Encounters	HISTORY OF HOSPITALIZATIONS	Clinical Encounters and Procedures List
Other Healthcare Visits	Encounters	HISTORY OF OUTPATIENT VISITS	Clinical Encounters and Procedures List
Clinical Tests	Results	RELEVANT DIAGNOSTIC TESTS AND/OR LABORATORY DATA	Laboratory and Test Results
Pregnancies		HISTORY OF PREGNANCIES	
Medical Devices	Medical Devices	HISTORY OF MEDICAL DEVICE USE	
Family Member History	Family History	HISTORY OF FAMILY MEMBER DISEASES	Family History
Foreign Travel		HISTORY OF TRAVEL	

Therapy	Plan of Care	TREATMENT PLAN	Care Plans, Goals and Disease Management
Vital Signs	Vital signs	VITAL SIGNS	
(Functional Status[2])	Functional Status	FUNCTIONAL STATUS	

6.1.1.5.6 Specification

Data Element Name	Opt	Template ID
Personal Information Name Address Contact Information Personal Identification Gender Date of Birth Thes components are required of all Medical Documents	R	1.3.6.1.4.1.19376.1.5.3.1.1.1
Personal Information Marital Status This commponent is optional in Medical Documents, but required if known in this specification.	R2	1.3.6.1.4.1.19376.1.5.3.1.1.1
Personal Information Race Ethnicity Religious Affiliation [2] These components are optional in Medical Documents	O	1.3.6.1.4.1.19376.1.5.3.1.1.1
Languages Spoken	R2	1.3.6.1.4.1.19376.1.5.3.1.2.1
Employer and School Contacts	O	1.3.6.1.4.1.19376.1.5.3.1.2.2
Hazardous Working Conditions	O	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.1
Patient Contacts	R2	1.3.6.1.4.1.19376.1.5.3.1.2.4
Healthcare Providers	R	1.3.6.1.4.1.19376.1.5.3.1.2.3
Insurance Providers	R2	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.7
Pharamacy	R2	1.3.6.1.4.1.19376.1.5.3.1.2.3
Legal Documents and Medical Directives	R2	1.3.6.1.4.1.19376.1.5.3.1.3.34
Allergies and Drug Sensitivities	R	1.3.6.1.4.1.19376.1.5.3.1.3.13
Conditions	R	1.3.6.1.4.1.19376.1.5.3.1.3.8
Conditions (cont)	R	1.3.6.1.4.1.19376.1.5.3.1.3.6
Surgeries	R2	1.3.6.1.4.1.19376.1.5.3.1.3.12

Medications – Prescription and Non-Prescription	R	1.3.6.1.4.1.19376.1.5.3.1.3.19
Immunizations	R2	1.3.6.1.4.1.19376.1.5.3.1.3.23
Doctor Visits / Last Physical or Checkup	O	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3
Hospitalizations	O	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3
Other Healthcare Visits	O	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3
Clinical Tests / Blood Type	O	1.3.6.1.4.1.19376.1.5.3.1.3.28
Pregnancies	O	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4
Medical Devices	R2	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.5
Family Member History	O	1.3.6.1.4.1.19376.1.5.3.1.3.15
Foreign Travel	O	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.6
Plan of Care	O	1.3.6.1.4.1.19376.1.5.3.1.3.31
Coded Vital signs	O	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2
Functional Status	O	1.3.6.1.4.1.19376.1.5.3.1.3.17

Table 6.1.1.5.6-1

6.1.1.5.7 Conformance

CDA Release 2.0 documents that conform to the requirements of this content module shall indicate their conformance by the inclusion of the appropriate <templateId> elements in the header of the document. This is shown in the sample document below. A CDA Document may conform to more than one template. This content module inherits from the Medical Summary content module, and so must conform to the requirements of that template as well, thus all <templateId> elements shown in the example below shall be included.

```
<ClinicalDocument xmlns='urn:hl7-org:v3'>
  <typeId extension="POCD_HD000040" root="2.16.840.1.113883.1.3"/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.2'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5'/>
  <id root=' ' extension=' '/>
  <code code='34133-9' displayName='Summary of Episode Note'
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>PHR Extract</title>
  <effectiveTime value='20081004012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
  <languageCode code='en-US'/>
     :
  <component><structuredBody>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.1'/>
        <!-- Optional Hazardous Working Conditions Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.34'/>
        <!-- Required if known Legal Documents and Medical Directives Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.13'/>
        <!-- Required Allergies and Drug Sensitivities Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.8'/>
        <!-- Required Conditions Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.6'/>
        <!-- Required Conditions (cont) Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.12'/>
        <!-- Required if known Surgeries Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.19'/>
        <!-- Required Medications - Prescription and Non-Prescription Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.23'/>
```

```
        <!-- Required if known Immunizations Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3'/>
        <!-- Optional Doctor Visits / Last Physical or Checkup Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3'/>
        <!-- Optional Hospitalizations Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3'/>
        <!-- Optional Other Healthcare Visits Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.28'/>
        <!-- Optional Clinical Tests / Blood Type Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4'/>
        <!-- Optional Pregnancies Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.5'/>
        <!-- Required if known Medical Devices Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.15'/>
        <!-- Optional Family Member History Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.6'/>
        <!-- Optional Foreign Travel Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.31'/>
        <!-- Optional Plan of Care Section content -->
      </section>
```

```
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2'/>
        <!-- Optional Coded Vital signs Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.17'/>
        <!-- Optional Functional Status Section content -->
      </section>
    </component>


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

Figure 6.1-5Sample PHR Extract Document

6.1.1.5.8 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.5"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The PHR Extract can only be used on Clinical Documents.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.2"]'>
     Error: The parent template identifier for PHR Extract is not present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='cda:code[@code = "34133-9"]'>
     Error: The document type code of a PHR Extract must be 34133-9
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The document type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: The PHR Extract Document must contain a(n) Personal Information Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.1"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  PHR Extract Document should contain a(n) Personal Information Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.1"]'>
     <!-- Note any missing optional elements -->
     Note: This PHR Extract Document does not contain a(n) Personal Information Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.2.1"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  PHR Extract Document should contain a(n) Languages Spoken Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.2.2"]'>
     <!-- Note any missing optional elements -->
     Note: This PHR Extract Document does not contain a(n) Employer and School Contacts
Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.1"]'>
     <!-- Note any missing optional elements -->
     Note: This PHR Extract Document does not contain a(n) Hazardous Working Conditions
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.2.4"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  PHR Extract Document should contain a(n) Patient Contacts Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.2.3"]'>
     <!-- Verify that all required data elements are present -->
     Error: The PHR Extract Document must contain a(n) Healthcare Providers Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.7"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  PHR Extract Document should contain a(n) Insurance Providers Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
```



```
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.2.3"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  PHR Extract Document should contain a(n) Pharamacy Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.34"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  PHR Extract Document should contain a(n) Legal Documents and Medical
Directives Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.13"]'>
     <!-- Verify that all required data elements are present -->
     Error: The PHR Extract Document must contain a(n) Allergies and Drug Sensitivities
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.8"]'>
     <!-- Verify that all required data elements are present -->
     Error: The PHR Extract Document must contain a(n) Conditions Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.6"]'>
     <!-- Verify that all required data elements are present -->
     Error: The PHR Extract Document must contain a(n) Conditions (cont) Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.12"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  PHR Extract Document should contain a(n) Surgeries Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.19"]'>
     <!-- Verify that all required data elements are present -->
     Error: The PHR Extract Document must contain a(n) Medications - Prescription and
Non-Prescription Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.23"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  PHR Extract Document should contain a(n) Immunizations Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3"]'>
     <!-- Note any missing optional elements -->
     Note: This PHR Extract Document does not contain a(n) Doctor Visits / Last Physical
or Checkup Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3"]'>
     <!-- Note any missing optional elements -->
     Note: This PHR Extract Document does not contain a(n) Hospitalizations Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3"]'>
     <!-- Note any missing optional elements -->
     Note: This PHR Extract Document does not contain a(n) Other Healthcare Visits
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.28"]'>
     <!-- Note any missing optional elements -->
     Note: This PHR Extract Document does not contain a(n) Clinical Tests / Blood Type
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
```



```
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4"]'>
      <!-- Note any missing optional elements -->
      Note: This PHR Extract Document does not contain a(n) Pregnancies Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.5"]'>
      <!-- Alert on any missing required if known elements -->
      Warning: The  PHR Extract Document should contain a(n) Medical Devices Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.15"]'>
      <!-- Note any missing optional elements -->
      Note: This PHR Extract Document does not contain a(n) Family Member History Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.6"]'>
      <!-- Note any missing optional elements -->
      Note: This PHR Extract Document does not contain a(n) Foreign Travel Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.31"]'>
      <!-- Note any missing optional elements -->
      Note: This PHR Extract Document does not contain a(n) Plan of Care Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2"]'>
      <!-- Note any missing optional elements -->
      Note: This PHR Extract Document does not contain a(n) Coded Vital signs Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.17"]'>
      <!-- Note any missing optional elements -->
      Note: This PHR Extract Document does not contain a(n) Functional Status Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5
    </assert>
  </rule>
</pattern>
```

6.1.1.5.9 Additional Constraints

The assignedAuthoring device shall be populated with information about the EHR and/or PHR which assisted in creation of the document.

All sections and entries within the document shall contain an <id> element.

6.1.1.6 PHR Update Specification 1.3.6.1.4.1.19376.1.5.3.1.1.6

The PHR Update Content Module is similar to the PHR Extract content module, except that it has a number of different constraints. First of all, it is not required to contain all of the information that the PHR Extract content module does. The reason for this is because the purpose of this module is to reflect the changes that should be made to a PHR based on a previously existing PHR Extract content module. So, while it makes use of the same data element index, almost all of the data elements are optional. The purpose of this module is to make it easier for an EHR to create content that can be used to update a PHR.

6.1.1.6.1 Format Code

The XDSDocumentEntry format code for this content is **urn:ihe:pcc:xphr:2007**

6.1.1.6.2 Conformance

CDA Release 2.0 documents that conform to the requirements of this content module shall indicate their conformance by the inclusion of the appropriate <templateId> elements in the header of the document. This is shown in the sample document below.

```
<ClinicalDocument xmlns='urn:hl7-org:v3'>
  <typeId extension="POCD_HD000040" root="2.16.840.1.113883.1.3"/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.6'/>
  <id root=' ' extension=' '/>
  <code code=' ' displayName=' '
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>PHR Update</title>
  <effectiveTime value='20081004012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
  <languageCode code='en-US'/>
     :
  <component><structuredBody>

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

Figure 6.1-6Sample PHR Update Document

```
   <!-- Verify the document type code -->
   <assert test='cda:code[@code = "{{{LOINC}}}"]'>
     Error: The document type code of a PHR Update must be {{{LOINC}}}
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The document type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
```

6.1.1.6.3 Requirements

The requirements of this module are that it support recording updates to the original PHR Extract. The PHR Extract is made up of a header, and several sections, each of which may contain one or more entries. Suggestions to add, remove or update a section or entry are described in more detail below.

6.1.1.6.4 Adding a New Section or Appending to an Existing Section

A PHR Reviewer Actor may suggest additional material for an existing or new section by simply adding that section to the PHR Update document.

6.1.1.6.5 Replacing a Section

A PHR Reviewer Actor may suggest a revision to a section in the PHR Extract by replacing that section. To replace a section, the PHR Reviewer Actor creates a section in the PHR Update document that is of the same type as the section to be replaced in the

PHR Extract document, and adds a <ppc:replacementOf> element to that section to indicate the section that it replaces.

The replacementOf element is an extension to the CDA Release 2.0 standard, and is further described below in Appendix C Extensions to CDA Release 2.0.

6.1.1.6.6 Adding an Entry

A PHR Reviewer Actor may suggest a new entry be added to a section by simply including that entry in a like section in the PHR Update document.

6.1.1.6.7 Replacing or Removing an Entry

The PHR Review Actor can replace an existing entry by adding an entry of the same type with new or modified information, and including in that entry a <reference> element that has an <externalAct> element. The <id> element of the <externalAct> shall be that of the act that is being replaced

6.1.1.6.8 Removing an Entry

The PHR Reviewer Actor can suggest that an entry be removed by replacing it with an act who <statusCode> element has been set to nullified.

6.1.1.6.9 Constraints

The LOINC document type code is the same as for the PHR Extract content module. The PHR Update Content module must record the PHR Extract which it is updating

6.1.1.7 Emergency Department Referral Specification 1.3.6.1.4.1.19376.1.5.3.1.1.10

An ED Referral is a type of Referral Summary, and incorporates the constraints defined for Referral Summaries.

This use case is described fully in the EDR Profile in PCC TF-1. Briefly, it involves a collaborative transfer of care for the referral of a patient from a care provider to an emergency department. Using this use case the contents of documents used in collaborative transfers of care were discussed with physicians and nurses in detail to identify major sections. The sections identified by physicians during the use case exercise as important are listed in the table below.

Using this information from the use case, the following mappings were made to existing standards.

6.1.1.7.1 Format Code

The XDSDocumentEntry format code for this content is **urn:ihe:pcc:edr:2007**

6.1.1.7.2 Parent Template

This document is an instance of the Medical Summary template.

6.1.1.7.3 Data Element Index

Data Elements	HL7 Care Record Summary	CDA Release 2.0
Reason for Referral	Reason for Referral	REASON FOR REFERRAL
History Present Illness	History of Present Illness	HISTORY OF PRESENT ILLNESS
Active Problems	Conditions	PROBLEM LIST
Current Meds	Medications	HISTORY OF MEDICATION USE
Allergies	Allergies and Adverse Reactions	HISTORY OF ALLERGIES
Resolved Problems	Conditions	HISTORY OF PAST ILLNESS
List of Surgeries	Past Surgical History	HISTORY OF PRIOR SURGERIES
Immunizations	Immunizations	HISTORY OF IMMUNIZATIONS
Family History	Family History	HISTORY OF FAMILY ILLNESS
Social History	Social History	SOCIAL HISTORY
Pertinent Review of Systems	Review of Systems	REVIEW OF SYSTEMS
Vital Signs	Physical Exam	VITAL SIGNS
Physical Exam	Physical Exam	GENERAL STATUS, PHYSICAL FINDINGS
Relevant Surgical Procedures / Clinical Reports (including links)	Studies and Reports	RELEVANT DIAGNOSTIC TESTS AND/OR LABORATORY DATA
Relevant Diagnostic Test and Reports (Lab, Imaging, EKG's, etc.) including links.	Studies and Reports	RELEVANT DIAGNOSTIC TESTS AND/OR LABORATORY DATA
Care Plan (new meds labs, or x-rays ordered)	Care Plan	TREATMENT PLAN
Proposed ED Disposition	ED DISPOSITION	
Mode of Transport to the Emergency Department	Care Plan	MODE OF TRANSPORT

Estimated Time of Arrival to the ED	Care Plan	MODE OF TRANSPORT
Advance Directives	Advance Directives	ADVANCE DIRECTIVES
Patient Administrative Identifiers	Header	patientRole/id
Pertinent Insurance Information	Participant	participant[@roleCode='HLD']
Data needed for state and local referral forms, if different than above	Optional Sections	section

6.1.1.7.4 Specification

Data Element Name	Opt	Template ID
Reason for Referral	R	1.3.6.1.4.1.19376.1.5.3.1.3.1
History Present Illness	R	1.3.6.1.4.1.19376.1.5.3.1.3.4
Active Problems	R	1.3.6.1.4.1.19376.1.5.3.1.3.6
Current Meds	R	1.3.6.1.4.1.19376.1.5.3.1.3.19
Allergies	R	1.3.6.1.4.1.19376.1.5.3.1.3.13
Resolved Problems	R2	1.3.6.1.4.1.19376.1.5.3.1.3.8
List of Surgeries	R2	1.3.6.1.4.1.19376.1.5.3.1.3.11
Immunizations	R2	1.3.6.1.4.1.19376.1.5.3.1.3.23
Family History	R2	1.3.6.1.4.1.19376.1.5.3.1.3.14
Social History	R2	1.3.6.1.4.1.19376.1.5.3.1.3.16
Pertinent Review of Systems	O	1.3.6.1.4.1.19376.1.5.3.1.3.18
Vital Signs	R2	1.3.6.1.4.1.19376.1.5.3.1.3.25
Physical Exam	R2	1.3.6.1.4.1.19376.1.5.3.1.3.24
Relevant Diagnostic Results and/or Clinical Reports Includes Diagnostic Surgical Procedures, Clinical Reports and Diagnostic Tests and Results (Lab, Imaging, EKG's, etc.) including links to relevant documents.	R2	1.3.6.1.4.1.19376.1.5.3.1.3.27
Care Plan (new meds, labs, or x-rays ordered)	R2	1.3.6.1.4.1.19376.1.5.3.1.3.31
Mode of Transport to the Emergency Department (includes ETA)	R	1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2
Proposed ED Disposition	R2	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10
Advance Directives The availability of information about Advance Directives must provided. A common concern among ED providers is over situations where patients presented to the ED require extensive resuscitative efforts, only later to discover that the patient had a DNR order.	R	1.3.6.1.4.1.19376.1.5.3.1.3.34
Patient Administrative Identifiers These are handed by the Medical Documents Content Profile by	R	

reference to constraints in HL7 CRS.		
Pertinent Insurance Information	R2	
Data needed for state and local referral forms, if different than above These are handed by including additional sections within the summary.	R2	

Note: *Highlighted* items in the table above are different from what appears in the XDS-MS profile. All other data elements have identical definitions.

6.1.1.7.5 Conformance

CDA Release 2.0 documents that conform to the requirements of this content module shall indicate their conformance by the inclusion of the appropriate <templateId> elements in the header of the document. This is shown in the sample document below. A CDA Document may conform to more than one template. This content module inherits from the Medical Summary content module, and so must conform to the requirements of that template as well, thus all <templateId> elements shown in the example below shall be included.

```
<ClinicalDocument xmlns='urn:hl7-org:v3'>
  <typeId extension="POCD_HD000040" root="2.16.840.1.113883.1.3"/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.3'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10'/>
  <id root=' ' extension=' '/>
  <code code=' ' displayName=' '
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Emergency Department Referral</title>
  <effectiveTime value='20081004012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
  <languageCode code='en-US'/>
     :
  <component><structuredBody>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.1'/>
        <!-- Required Reason for Referral Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.4'/>
        <!-- Required History Present Illness Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.6'/>
        <!-- Required Active Problems Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.19'/>
        <!-- Required Current Meds Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.13'/>
        <!-- Required Allergies Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.8'/>
        <!-- Required if known Resolved Problems Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.11'/>
        <!-- Required if known List of Surgeries Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.23'/>
```

```
        <!-- Required if known Immunizations Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.14'/>
        <!-- Required if known Family History Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.16'/>
        <!-- Required if known Social History Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.18'/>
        <!-- Optional Pertinent Review of Systems Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.25'/>
        <!-- Required if known Vital Signs Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.24'/>
        <!-- Required if known Physical Exam Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.27'/>
        <!-- Required if known Relevant Diagnostic Results and/or Clinical Reports
Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.31'/>
        <!-- Required if known Care Plan Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2'/>
        <!-- Required Mode of Transport to the Emergency Department
(includes ETA)  Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10'/>
        <!-- Required if known Proposed ED Disposition Section content -->
```

```
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.34'/>
        <!-- Required Advance Directives Section content -->
      </section>
    </component>


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

Figure 6.1-7Sample Emergency Department Referral Document

6.1.1.7.6 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.10'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.10"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The Emergency Department Referral can only be used on Clinical Documents.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.3"]'>
     Error: The parent template identifier for Emergency Department Referral is not
present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='cda:code[@code = "{{{LOINC}}}"]'>
     Error: The document type code of a Emergency Department Referral must be {{{LOINC}}}
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The document type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Emergency Department Referral Document must contain a(n) Reason for
Referral Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.4"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Emergency Department Referral Document must contain a(n) History Present
Illness Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.6"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Emergency Department Referral Document must contain a(n) Active Problems
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.19"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Emergency Department Referral Document must contain a(n) Current Meds
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.13"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Emergency Department Referral Document must contain a(n) Allergies
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.8"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  Emergency Department Referral Document should contain a(n) Resolved
Problems Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.11"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  Emergency Department Referral Document should contain a(n) List of
Surgeries Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.23"]'>
     <!-- Alert on any missing required if known elements -->
```



```
      Warning: The  Emergency Department Referral Document should contain a(n)
Immunizations Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.14"]'>
     <!-- Alert on any missing required if known elements -->
      Warning: The  Emergency Department Referral Document should contain a(n) Family
History Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.16"]'>
     <!-- Alert on any missing required if known elements -->
      Warning: The  Emergency Department Referral Document should contain a(n) Social
History Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.18"]'>
     <!-- Note any missing optional elements -->
      Note: This Emergency Department Referral Document does not contain a(n) Pertinent
Review of Systems Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.25"]'>
     <!-- Alert on any missing required if known elements -->
      Warning: The  Emergency Department Referral Document should contain a(n) Vital Signs
Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.24"]'>
     <!-- Alert on any missing required if known elements -->
      Warning: The  Emergency Department Referral Document should contain a(n) Physical
Exam Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.27"]'>
     <!-- Alert on any missing required if known elements -->
      Warning: The  Emergency Department Referral Document should contain a(n) Relevant
Diagnostic Results and/or Clinical Reports Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.31"]'>
     <!-- Alert on any missing required if known elements -->
      Warning: The  Emergency Department Referral Document should contain a(n) Care Plan
Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2"]'>
     <!-- Verify that all required data elements are present -->
      Error: The Emergency Department Referral Document must contain a(n) Mode of
Transport to the Emergency Department
(includes ETA)  Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10"]'>
     <!-- Alert on any missing required if known elements -->
      Warning: The  Emergency Department Referral Document should contain a(n) Proposed ED
Disposition Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.34"]'>
     <!-- Verify that all required data elements are present -->
      Error: The Emergency Department Referral Document must contain a(n) Advance
Directives Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
   </assert>
   <assert test='.//cda:templateId[@root = ""]'>
```



```
      <!-- Verify that all required data elements are present -->
      Error: The Emergency Department Referral Document must contain a(n) Patient
Administrative Identifiers Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
    </assert>
    <assert test='.//cda:templateId[@root = ""]'>
      <!-- Alert on any missing required if known elements -->
      Warning: The  Emergency Department Referral Document should contain a(n) Pertinent
Insurance Information Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
    </assert>
    <assert test='.//cda:templateId[@root = ""]'>
      <!-- Alert on any missing required if known elements -->
      Warning: The  Emergency Department Referral Document should contain a(n) Data needed
for state and local referral forms, if different than above Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10
    </assert>
  </rule>
</pattern>
```

6.1.2 CDA Header Content Modules

6.1.2.1 Language Communication 1.3.6.1.4.1.19376.1.5.3.1.2.1

Languages spoken shall be recorded using the languageCommunication infrastructure class associated with the patient. The <languageCommunication> element describes the primary and secondary languages of communication for a person. When used, these shall be described using the languageCommunication element as follows.

6.1.2.1.1 Specification

```
<languageCommunication>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.1'/>
  <languageCode code='en-US'/>
  <modeCode code='' codeSystem='2.16.840.1.113883.5.60'
    codeSystemName='LanguageAbilityMode'/>
  <preferenceInd value='true|false'/>
</languageCommunication>
```

6.1.2.1.2 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.1'/>

The <templateId> element identifies this <languageCommunication> element for validation of the content. The templateId must have root='1.3.6.1.4.1.19376.1.5.3.1.2.1'.

6.1.2.1.3 <languageCode code=' '/>

This element describes the language code. It uses the same vocabulary described for the ClinicalDocument/languageCode element described in more detail in HL7 CRS: 2.1.1. This element is required.

6.1.2.1.4 <modeCode code=' ' codeSystem='2.16.840.1.113883.5.60' codeSystemName='LanguageAbilityMode'/>

This element describes the mode of use, and is only necessary when there are differences between expressive and receptive abilities. This element is optional. When not present, the assumption is that any further detail provided within the languageCommunication

element refers to all common modes of communication. The coding system used shall be the HL7 LanguageAbilityMode vocabulary when this element is communicated.

6.1.2.1.5 <proficiencyLevelCode code=' ' codeSystem='2.16.840.1.113883.5.61' codeSystemName='LanguageProficiencyCode' />

This element describes the proficiency of the patient (with respect to the mode if specified). This element is optional. The coding system used shall be the HL7 LanguageProficiencyCode vocabulary when this element is communicated.

6.1.2.1.6 <preferenceInd value=' '/>

This element shall be present on all languageCommunication elements when more than one is provided. It shall be valued "true" if this language is the patient's preferred language for communication, or "false" if this is not the patient's preferred language. More than one language may be preferred, and at least one must be preferred.

6.1.2.2 Employer and School Contacts 1.3.6.1.4.1.19376.1.5.3.1.2.2

Employer and school informational contacts shall be recorded as participants in the CDA Header as demonstrated in the figure below. These contacts shall conform to the General Constraints found in HL7 CRS: 2.1.1 with respect to the requirements for name, address, telephone numbers and other contact information.

The figure below shows how the information for this element is coded, and further constraints are provided in the following sections.

6.1.2.2.1 Specification

```
<participant typeCode='IND'>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.2'/>
  <time>
    <low value=''/>
    <high value=''/>
  </time>
  <associatedEntity classCode='CON'>
    <id root='' extension=''/>
    <code code='EMPLOYER|SCHOOL|AFFILIATED' codeSystem='1.3.5.1.4.1.19376.1.5.3.3'
codeSystemName='IHERoleCode'/>
    <associatedPerson><name>…</name></associatedPerson>
    <scopingOrganization>
      <name>…</name>
      <telecom value='' use=''/>
      <addr>…</addr>
    </scopingOrganization>
  </associatedEntity>
</participant>
```

6.1.2.2.2 <participant typeCode='IND'>

The typeCode of the participant shall be IND.

6.1.2.2.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.2'/>

The <templateId> element identifies this <participant> as a school or employer contact for validation of the content. The templateId must have root='1.3.6.1.4.1.19376.1.5.3.1.2.2'.

6.1.2.2.4 <time><low value=' '/><high value=' '/></time>

The time element indicates the start and stop time range for this contact. These dates shall correspond to the start and stop dates for employment, enrollment, or other affiliation with the organization described.

6.1.2.2.5 <associatedEntity classCode='CON'>

The <associatedEntity> element provides the contact information (classCode='CON') for the school, employer or affiliated organization.

6.1.2.2.6 <code code='EMPLOYER|SCHOOL|AFFILIATED' codeSystem='1.3.5.1.4.1.19376.1.5.3.3' codeSystemName='IHERoleCode'/>

The code value shall indicate whether the participant is the employer, school or other affiliated (e.g., volunteer) organization. See also the IHE Role Code Vocabulary(1.3.5.1.4.1.19376.1.5.3.3)

6.1.2.2.7 <associatedPerson><name>…</name></associatedPerson>

This element should be present. When present is shall provide the name of a contact person within the organization.

6.1.2.2.8 <scopingOrganization><name>…</name><telecom value= *use*=/><addr>…</addr></scopingOrganization>

This element shall be present, and shall provide the name, address and telephone number of the organization.

6.1.2.3 Healthcare Providers and Pharmacies 1.3.6.1.4.1.19376.1.5.3.1.2.3

Healthcare providers (including pharmacies) shall be recorded as described in CCD: 3.17. The identifier that the patient is known by to these providers may be included using the Patient Identifier extension described in Extensions to HL7 CDA Release 2.0. See the example shown in for use of this extension element.

6.1.2.3.1 Specification

```
<documentationOf>
  <serviceEvent classCode="PCPR">
    <effectiveTime><low value=""/><high value=""/></effectiveTime>
    <performer typeCode="PRF">
      <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.3'/>
      <functionCode code='' displayName='' codeSystem='' codeSystemName=''/>
      <time>
        <low value=''/>
        <high value=''/>
      </time>
      <assignedEntity>
        <id root='' extension=''/>
        <code code='' displayName='' codeSystem='' codeSystemName=''/>
        <addr></addr>
        <telecom value='' use=''/>
        <assignedPerson><name></name></assignedPerson>
        <representedOrganization><name></name></representedOrganization>
        <sdtc:patient>
          <sdtc:id root='' extension=''/>
        </sdtc:patient>
      </assignedEntity>
    </performer>
  </serviceEvent>
<documentationOf>
```

6.1.2.3.2 <documentationOf>

The <documentationOf> element records the service events that were performed. This element shall be present.

6.1.2.3.3 <serviceEvent classCode="PCPR">

The <serviceEvent> element describes the activity being documented. This element shall be present, and shall have a classCode attribute of 'PCPR'.

6.1.2.3.4 <effectiveTime><low value=""/><high value=""/></effectiveTime>

The <effectiveTime> element records the time over which care provision activities are recorded in the document. There shall be a <low> element which records the starting date of care provision, and a <high> element which records the ending date of care provision. The ending date may extend into the future in the document describes care that is intended to be provided, but that has not actually occurred.

6.1.2.3.5 <performer typeCode="PRF">

The <performer> elements in the <serviceEvent> identify the providers of care. At least one <performer> element should be present. When a provider gives care over two distinct time intervals (e.g., as in the case of a specialist who treats the patient for short periods of time in different years), the provider may be recorded multiple times as a performer.

6.1.2.3.6 <functionCode code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '/>

The function of the provider in the care of the patient should be present, and will be described in the <functionCode> element. This may be used for example, to identify the primary care provider.

6.1.2.3.7 <time><low value=' '/><high value=' '/></time>

The <time> element is used to show the time period over which the provider gave care to the patient. The <low> and <high> elements must be present, and indicate the time over which care was (or is to be) provided.

6.1.2.3.8 <assignedEntity classCode='ASSIGNED'>

The <assignedEntity> element contains elements that identify the individual provider, and shall be present.

6.1.2.3.9 <id root=' ' extension=' '/>

The <id> element may be present and identifies the provider.

6.1.2.3.10<code code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '/>

The <code> element describes the type of provider and can be used to distinguish pharmacies from other providers.

6.1.2.3.11<addr></addr>

The <addr> element gives the address of the provider.

6.1.2.3.12<telecom value=' ' use=' '/>

The <telecom> element gives the telephone number of the provider.

6.1.2.3.13<assignedPerson><name></name></assignedPerson>

The providers name should be present. If not present, then the <scopingOrganization> shall be present (see below).

6.1.2.3.14<representedOrganization><name></name></representedOrganization>

This element should be present, and shall provide the name of the organization.

6.1.2.3.15<sdtc:patient><sdtc:id root=' ' extension=' '/></sdtc:patient>

The <sdtc:patient> element may be present to represent the patient's medical record number with the given provider. The root attribute of <sdtc:id> element shall be present

and identifies the namespace used for the identifier. The extension attribute shall be present and is the patient's medical record or account number with the provider. This element is an HL7 extension to CDA Release 2.0.

6.1.2.4 Patient Contacts 1.3.6.1.4.1.19376.1.5.3.1.2.4

Patient contacts are recorded as described in HL7 CCD: 3.3

6.1.2.4.1 Specification

```
<guardian classCode='GUARD'>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.4'/>
  <code code='' displayName='' codeSystem='2.16.840.1.113883.5.111'
codeSystemName='RoleCode'/>
  <addr></addr>
  <telecom />
  <guardianPerson>
    <name></name>
  </guardianPerson>
</guardian>
```

Figure 6.1-8 Guardians

```
<participant typeCode='IND'>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.4'/>
  <time value='20070213'/>
  <associatedEntity classCode='AGNT|CAREGIVER|ECON|NOK|PRS'>
    <code code='' displayName='' codeSystem='2.16.840.1.113883.5.111'
codeSystemName='RoleCode'/>
    <addr></addr>
    <telecom value='' use=''/>
    <assignedPerson><name></name></assignedPerson>
  </associatedEntity>
</participant>
```

Figure 6.1-9 Other Contacts

6.1.2.4.2 <guardian classCode='GUARD'>

The guardians of a patient shall be recorded in the <guardian> element beneath the <patient> element.

6.1.2.4.3 <participant typeCode='IND'>

Other contacts are recorded as <participant> elements appearing in the document header. The classCode attribute shall be set to 'IND'.

6.1.2.4.4 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.4'/>

The <templateId> element identifies this person as a patient contact and must be recorded exactly as shown above.

6.1.2.4.5 <time value=' '>

The <time> element may be present and indicates the time of the participation.

6.1.2.4.6 <associatedEntity classCode='AGNT|CAREGIVER|ECON|NOK|PRS'>

The <associatedEntity> element identifies the type of contact. The classCode attribute shall be present, and contains a value from the set AGNT, CAREGIVER, ECON, NOK, or PRS to identify contacts that are agents of the patient, care givers, emergency contacts, next of kin, or other relations respectively.

6.1.2.4.7 <code code=' ' displayName=' ' codeSystem='2.16.840.1.113883.5.111' codeSystemName='RoleCode'/>

The relationship between the patient and the guardian or other contact should be recorded in the <code> element. The code attribute is required and comes from the HL7 PersonalRelationshipRoleType vocabulary. The codeSystem attribute is required and shall be represented exactly as shown above.

6.1.2.4.8 <addr>

The address of the guardian or other contact should be present, and shall be represented as any other address would be in CDA.

6.1.2.4.9 <telecom>

The phone number of the guardian or other contact should be present, and shall be represented as any other phone number would be in CDA.

6.1.2.4.10<guardianPerson><name/> or <assignedPerson><name/>

The name of the guardian or other contact shall be present, and shall be represented as any other name would be in CDA.

6.1.3 CDA Section Content Modules

This list defines the sections that may appear in a medical document. It is intended to be a comprehensive list of all document sections that are used by any content profile defined in the Patient Care Coordination Technical Framework. All sections shall have a narrative component that may be freely formatted into normal text, lists, tables, or other appropriate human-readable presentations. Additional subsections or entry content modules may be required.

6.1.3.1 Reasons for Care

The sections described below describe various reasons why healthcare is being provided to the patient.

6.1.3.1.1 Reason for Referral Section 1.3.6.1.4.1.19376.1.5.3.1.3.1

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.1	
General Description	The reason for referral section shall contain a narrative description of the reason that the patient is being referred.	
LOINC Code	Opt	Description
42349-1	R	REASON FOR REFERRAL

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.1'/>
    <id root=' ' extension=' '/>
    <code code='42349-1' displayName='REASON FOR REFERRAL'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-10Sample Reason for Referral Section

6.1.3.1.1.1Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.1'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.1"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Reason for Referral can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "42349-1"]'>
     Error: The section type code of a Reason for Referral must be 42349-1
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.1.2 Coded Reason for Referral Section 1.3.6.1.4.1.19376.1.5.3.1.3.2

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.2	
Parent Template	Reason for Referral (1.3.6.1.4.1.19376.1.5.3.1.3.1)	
General Description	This section shall include at least one entry describing the reason for referral as described in the Entry Content Module.	
LOINC Code	Opt	Description
42349-1	R	REASON FOR REFERRAL
Entries	Opt	Description

1.3.6.1.4.1.19376.1.5.3.1.4.13	R	Simple Observations
1.3.6.1.4.1.19376.1.5.3.1.4.5	R	Conditions Entry

6.1.3.1.2.1 Parent Template

The parent of this template is Reason for Referral.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.1'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.2'/>
    <id root=' ' extension=' '/>
    <code code='42349-1' displayName='REASON FOR REFERRAL'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Simple Observations element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
        :
    </entry>
    <entry>
        :
      <!-- Required Conditions Entry element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-11 Sample Coded Reason for Referral Section

6.1.3.1.2.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.2'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.2"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Coded Reason for Referral can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.3.1"]'>
     Error: The parent template identifier for Coded Reason for Referral is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "42349-1"]'>
     Error: The section type code of a Coded Reason for Referral must be 42349-1
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.13"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Coded Reason for Referral Section must contain a(n) Simple Observations
Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.2
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.5"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Coded Reason for Referral Section must contain a(n) Conditions Entry
Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.2
   </assert>
 </rule>
</pattern>
```

6.1.3.1.3 Chief Complaint Section 1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1	
General Description	This contains a narrative description of the patient's chief complaint.	
LOINC Code	**Opt**	**Description**
10154-3	R	CHIEF COMPLAINT

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1'/>
    <id root=' ' extension=' '/>
    <code code='10154-3' displayName='CHIEF COMPLAINT'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-12 Sample Chief Complaint Section

6.1.3.1.3.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Chief Complaint can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10154-3"]'>
     Error: The section type code of a Chief Complaint must be 10154-3
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.1.4 Hospital Admission Diagnosis Section 1.3.6.1.4.1.19376.1.5.3.1.3.3

Template ID		1.3.6.1.4.1.19376.1.5.3.1.3.3
General Description		The hospital admitting diagnosis section shall contain a narrative description of the primary reason for admission to a hospital facility. It shall include entries for observations as described in the Entry Content Modules.
LOINC Code	**Opt**	**Description**
46241-6	R	HOSPITAL ADMISSION DX
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.5.2	R	Problem Concern Entry

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.3'/>
    <id root=' ' extension=' '/>
    <code code='46241-6' displayName='HOSPITAL ADMISSION DX'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Problem Concern Entry element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.2'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-13Sample Hospital Admission Diagnosis Section

6.1.3.1.4.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.3'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.3"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Hospital Admission Diagnosis can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "46241-6"]'>
     Error: The section type code of a Hospital Admission Diagnosis must be 46241-6
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.5.2"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Hospital Admission Diagnosis Section must contain a(n) Problem Concern
Entry Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.3
   </assert>
 </rule>
</pattern>
```

6.1.3.2 Other Condition Histories

The sections defined below provide historical information about the patient's conditions.

6.1.3.2.1 History of Present Illness Section 1.3.6.1.4.1.19376.1.5.3.1.3.4

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.4	
General Description	The history of present illness section shall contain a narrative description of the sequence of events preceding the patient's current complaints.	
LOINC Code	**Opt**	**Description**
10164-2	R	HISTORY OF PRESENT ILLNESS

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.4'/>
    <id root=' ' extension=' '/>
    <code code='10164-2' displayName='HISTORY OF PRESENT ILLNESS'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-14 Sample History of Present Illness Section

6.1.3.2.1.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.4'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.4"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The History of Present Illness can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10164-2"]'>
     Error: The section type code of a History of Present Illness must be 10164-2
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.2.2 Hospital Course Section 1.3.6.1.4.1.19376.1.5.3.1.3.5

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.5	
General Description	The hospital course section shall contain a narrative description of the sequence of events from admission to discharge in a hospital facility.	
LOINC Code	**Opt**	**Description**
8648-8	R	HOSPITAL COURSE

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.5'/>
    <id root=' ' extension=' '/>
    <code code='8648-8' displayName='HOSPITAL COURSE'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-15 Sample Hospital Course Section

6.1.3.2.2.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.5'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.5"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Hospital Course can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "8648-8"]'>
     Error: The section type code of a Hospital Course must be 8648-8
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.2.3 Active Problems Section 1.3.6.1.4.1.19376.1.5.3.1.3.6

Template ID		1.3.6.1.4.1.19376.1.5.3.1.3.6
Parent Template		CCD 3.5 (2.16.840.1.113883.10.20.1.11)
General Description		The active problem section shall contain a narrative description of the conditions currently being monitored for the patient. It shall include entries for patient conditions as described in the Entry Content Module.
LOINC Code	**Opt**	**Description**
11450-4	R	PROBLEM LIST
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.5.2	R	Problem Concern Entry

6.1.3.2.3.1 Parent Template

The parent of this template is CCD 3.5.

```
<component>
  <section>
    <templateId root='2.16.840.1.113883.10.20.1.11'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.6'/>
    <id root=' ' extension=' '/>
    <code code='11450-4' displayName='PROBLEM LIST'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
         :
      <!-- Required Problem Concern Entry element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.2'/>
         :
    </entry>

  </section>
</component>
```

Figure 6.1-16Sample Active Problems Section

6.1.3.2.3.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.6'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.6"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Active Problems can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="2.16.840.1.113883.10.20.1.11"]'>
     Error: The parent template identifier for Active Problems is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11450-4"]'>
     Error: The section type code of a Active Problems must be 11450-4
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.5.2"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Active Problems Section must contain a(n) Problem Concern Entry Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.6
   </assert>
 </rule>
</pattern>
```

6.1.3.2.4 Discharge Diagnosis Section 1.3.6.1.4.1.19376.1.5.3.1.3.7

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.7	
General Description	The discharge diagnosis section shall contain a narrative description of the conditions that need to be monitored after discharge from the hospital and those that were resolved during the hospital course. It shall include entries for patient conditions as described in the Entry Content Module.	
LOINC Code	**Opt**	**Description**
11535-2	R	HOSPITAL DISCHARGE DX
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.5.2	R	Problem Concern Entry

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.7'/>
    <id root=' ' extension=' '/>
    <code code='11535-2' displayName='HOSPITAL DISCHARGE DX'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
         :
      <!-- Required Problem Concern Entry element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.2'/>
         :
    </entry>

  </section>
</component>
```

Figure 6.1-17Sample Discharge Diagnosis Section

6.1.3.2.4.1Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.7'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.7"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Discharge Diagnosis can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11535-2"]'>
     Error: The section type code of a Discharge Diagnosis must be 11535-2
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.5.2"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Discharge Diagnosis Section must contain a(n) Problem Concern Entry
Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.7
   </assert>
 </rule>
</pattern>
```

6.1.3.2.5 History of Past Illness Section 1.3.6.1.4.1.19376.1.5.3.1.3.8

Template ID		1.3.6.1.4.1.19376.1.5.3.1.3.8
General Description		The History of Past Illness section shall contain a narrative description of the conditions the patient suffered in the past. It shall include entries for problems as described in the Entry Content Modules.
LOINC Code	**Opt**	**Description**
11348-0	R	HISTORY OF PAST ILLNESS
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.5.2	R	Problem Concern Entry

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.8'/>
    <id root=' ' extension=' '/>
    <code code='11348-0' displayName='HISTORY OF PAST ILLNESS'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Problem Concern Entry element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.2'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-18Sample History of Past Illness Section

6.1.3.2.5.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.8'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.8"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The History of Past Illness can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11348-0"]'>
     Error: The section type code of a History of Past Illness must be 11348-0
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.5.2"]'>
     <!-- Verify that all required data elements are present -->
     Error: The History of Past Illness Section must contain a(n) Problem Concern Entry
Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.8
   </assert>
 </rule>
</pattern>
```

6.1.3.2.6 Encounter Histories Section 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3	
Parent Template	2.16.840.1.113883.10.20.1.3 (2.16.840.1.113883.10.20.1.3)	
General Description	The encounter history section contains coded entries describing the patient history of encounters.	
LOINC Code	**Opt**	**Description**
46240-8	R	HISTORY OF ENCOUNTERS
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.14	R	Encounters

6.1.3.2.6.1 Parent Template

The parent of this template is 2.16.840.1.113883.10.20.1.3.

```
<component>
  <section>
    <templateId root='2.16.840.1.113883.10.20.1.3'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3'/>
    <id root=' ' extension=' '/>
    <code code='46240-8' displayName='HISTORY OF ENCOUNTERS'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Encounters element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.14'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-19 Sample Encounter Histories Section

6.1.3.2.6.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Encounter Histories can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="2.16.840.1.113883.10.20.1.3"]'>
     Error: The parent template identifier for Encounter Histories is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "46240-8"]'>
     Error: The section type code of a Encounter Histories must be 46240-8
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.14"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Encounter Histories Section must contain a(n) Encounters Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3
   </assert>
 </rule>
</pattern>
```

6.1.3.2.7 History of Outpatient Visits Section 1.3.6.1.4.1.19376.1.5.3.1.3.9

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.9	
General Description	The outpatients visit section shall contain a narrative description of the completed visits to ambulatory facilities.	
LOINC Code	**Opt**	**Description**
11346-4	R	HISTORY OF OUTPATIENT VISITS

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.9'/>
    <id root=' ' extension=' '/>
    <code code='11346-4' displayName='HISTORY OF OUTPATIENT VISITS'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-20Sample History of Outpatient Visits Section

6.1.3.2.7.1Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.9'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.9"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The History of Outpatient Visits can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11346-4"]'>
     Error: The section type code of a History of Outpatient Visits must be 11346-4
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.2.8 History of Inpatient Visits Section 1.3.6.1.4.1.19376.1.5.3.1.3.10

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.10	
General Description	The inpatient admissions section shall contain a narrative description of the admissions and discharges to inpatient facilities.	
LOINC Code	**Opt**	**Description**
11336-5	R	HISTORY OF HOSPITALIZATIONS

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.10'/>
    <id root=' ' extension=' '/>
    <code code='11336-5' displayName='HISTORY OF HOSPITALIZATIONS'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-21Sample History of Inpatient Visits Section

6.1.3.2.8.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.10'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.10"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The History of Inpatient Visits can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11336-5"]'>
     Error: The section type code of a History of Inpatient Visits must be 11336-5
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.2.9 List of Surgeries Section 1.3.6.1.4.1.19376.1.5.3.1.3.11

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.11	
Parent Template	CCD 3.14 (2.16.840.1.113883.10.20.1.12)	
General Description	The list of surgeries section shall contain a narrative description of the diagnostic and therapeutic operative procedures and associated anesthetic techniques the patient received in the past.	
LOINC Code	**Opt**	**Description**
47519-4	R	HISTORY OF PROCEDURES

6.1.3.2.9.1 Parent Template

The parent of this template is CCD 3.14.

```
<component>
  <section>
    <templateId root='2.16.840.1.113883.10.20.1.12'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.11'/>
    <id root=' ' extension=' '/>
    <code code='47519-4' displayName='HISTORY OF PROCEDURES'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-22Sample List of Surgeries Section

6.1.3.2.9.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.11'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.11"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The List of Surgeries can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="2.16.840.1.113883.10.20.1.12"]'>
     Error: The parent template identifier for List of Surgeries is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "47519-4"]'>
     Error: The section type code of a List of Surgeries must be 47519-4
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.2.10 Coded List of Surgeries Section 1.3.6.1.4.1.19376.1.5.3.1.3.12

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.12	
Parent Template	List of Surgeries (1.3.6.1.4.1.19376.1.5.3.1.3.11)	
General Description	The list of surgeries section shall include entries for procedures and references to procedure reports when known as described in the Entry Content Modules.	
LOINC Code	**Opt**	**Description**
47519-4	R	HISTORY OF PROCEDURES
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.19	R	Procedure Entry
1.3.6.1.4.1.19376.1.5.3.1.4.4	R2	References Entry

6.1.3.2.10.1 Parent Template

The parent of this template is List of Surgeries.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.11'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.12'/>
    <id root=' ' extension=' '/>
    <code code='47519-4' displayName='HISTORY OF PROCEDURES'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Procedure Entry  element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.19'/>
        :
    </entry>
    <entry>
        :
      <!-- Required if known References Entry element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-23Sample Coded List of Surgeries Section

6.1.3.2.10.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.12'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.12"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Coded List of Surgeries can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.3.11"]'>
     Error: The parent template identifier for Coded List of Surgeries is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "47519-4"]'>
     Error: The section type code of a Coded List of Surgeries must be 47519-4
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.19"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Coded List of Surgeries Section must contain a(n) Procedure Entry  Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.12
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.4"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  Coded List of Surgeries Section should contain a(n) References Entry
Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.12
   </assert>
 </rule>
</pattern>
```

6.1.3.2.11 Allergies and Other Adverse Reactions Section 1.3.6.1.4.1.19376.1.5.3.1.3.13

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.13	
Parent Template	CCD 3.8 (2.16.840.1.113883.10.20.1.2)	
General Description	The adverse and other adverse reactions section shall contain a narrative description of the substance intolerances and the associated adverse reactions suffered by the patient. It shall include entries for intolerances and adverse reactions as described in the Entry Content Modules.	
LOINC Code	**Opt**	**Description**
48765-2	R	Allergies, adverse reactions, alerts
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.5.3	R	Allergies and Intolerances Concern

6.1.3.2.11.1 Parent Template

The parent of this template is CCD 3.8. This template is compatible with the ASTM/HL7 Continuity of Care Document template: 2.16.840.1.113883.10.20.1.2

```
<component>
  <section>
    <templateId root='2.16.840.1.113883.10.20.1.2'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.13'/>
    <id root=' ' extension=' '/>
    <code code='48765-2' displayName='Allergies, adverse reactions, alerts'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Allergies and Intolerances Concern element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.3'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-24Sample Allergies and Other Adverse Reactions Section

6.1.3.2.11.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.13'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.13"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Allergies and Other Adverse Reactions can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="2.16.840.1.113883.10.20.1.2"]'>
     Error: The parent template identifier for Allergies and Other Adverse Reactions is
not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "48765-2"]'>
     Error: The section type code of a Allergies and Other Adverse Reactions must be
48765-2
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.5.3"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Allergies and Other Adverse Reactions Section must contain a(n) Allergies
and Intolerances Concern Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.13
   </assert>
 </rule>
</pattern>
```

6.1.3.2.12Family Medical History Section 1.3.6.1.4.1.19376.1.5.3.1.3.14

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.14	
Parent Template	CCD 3.6 (2.16.840.1.113883.10.20.1.4)	
General Description	The family history section shall contain a narrative description of the genetic family members, to the extent that they are known, the diseases they suffered from, their ages at death, and other relevant genetic information.	
LOINC Code	**Opt**	**Description**

10157-6	R	HISTORY OF FAMILY MEMBER DISEASES

6.1.3.2.12.1 Parent Template

The parent of this template is CCD 3.6.

```
<component>
  <section>
    <templateId root='2.16.840.1.113883.10.20.1.4'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.14'/>
    <id root=' ' extension=' '/>
    <code code='10157-6' displayName='HISTORY OF FAMILY MEMBER DISEASES'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-25Sample Family Medical History Section

6.1.3.2.12.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.14'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.14"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Family Medical History can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="2.16.840.1.113883.10.20.1.4"]'>
     Error: The parent template identifier for Family Medical History is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10157-6"]'>
     Error: The section type code of a Family Medical History must be 10157-6
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.2.13Coded Family Medical History Section 1.3.6.1.4.1.19376.1.5.3.1.3.15

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.15	
Parent Template	Family Medical History (1.3.6.1.4.1.19376.1.5.3.1.3.14)	
General Description	The family history section shall include entries for family history as described in the Entry Content Modules.	
LOINC Code	**Opt**	**Description**
10157-6	R	HISTORY OF FAMILY MEMBER DISEASES
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.15	R	Family History Organizer

6.1.3.2.13.1 Parent Template

The parent of this template is Family Medical History.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.14'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.15'/>
    <id root=' ' extension=' '/>
    <code code='10157-6' displayName='HISTORY OF FAMILY MEMBER DISEASES'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Family History Organizer element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.15'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-26Sample Coded Family Medical History Section

6.1.3.2.13.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.15'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.15"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Coded Family Medical History can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.3.14"]'>
     Error: The parent template identifier for Coded Family Medical History is not
present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10157-6"]'>
     Error: The section type code of a Coded Family Medical History must be 10157-6
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.15"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Coded Family Medical History Section must contain a(n) Family History
Organizer Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.15
   </assert>
 </rule>
</pattern>
```

6.1.3.2.14Social History Section 1.3.6.1.4.1.19376.1.5.3.1.3.16

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.16
Parent Template	CCD 3.7 (2.16.840.1.113883.10.20.1.15)

General Description	The social history section shall contain a narrative description of the person's beliefs, home life, community life, work life, hobbies, and risky habits.	
LOINC Code	**Opt**	**Description**
29762-2	R	SOCIAL HISTORY

6.1.3.2.14.1 Parent Template

The parent of this template is CCD 3.7.

```
<component>
  <section>
    <templateId root='2.16.840.1.113883.10.20.1.15'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.16'/>
    <id root=' ' extension=' '/>
    <code code='29762-2' displayName='SOCIAL HISTORY'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-27Sample Social History Section

6.1.3.2.14.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.16'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.16"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Social History can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="2.16.840.1.113883.10.20.1.15"]'>
     Error: The parent template identifier for Social History is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "29762-2"]'>
     Error: The section type code of a Social History must be 29762-2
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.2.15Functional Status Section 1.3.6.1.4.1.19376.1.5.3.1.3.17

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.17	
Parent Template	CCD 3.4 (2.16.840.1.113883.10.20.1.5)	
General Description	The functional status section shall contain a narrative description of capability of the patient to perform acts of daily living.	
LOINC Code	**Opt**	**Description**
47420-5	R	FUNCTIONAL STATUS ASSESSMENT

6.1.3.2.15.1 Parent Template

The parent of this template is CCD 3.4.

```
<component>
  <section>
    <templateId root='2.16.840.1.113883.10.20.1.5'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.17'/>
    <id root=' ' extension=' '/>
    <code code='47420-5' displayName='FUNCTIONAL STATUS ASSESSMENT'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-28Sample Functional Status Section

6.1.3.2.15.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.17'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.17"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Functional Status can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="2.16.840.1.113883.10.20.1.5"]'>
     Error: The parent template identifier for Functional Status is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "47420-5"]'>
     Error: The section type code of a Functional Status must be 47420-5
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.2.16Review of Systems Section 1.3.6.1.4.1.19376.1.5.3.1.3.18

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.18	
General Description	The review of systems section shall contain a narrative description of the responses the patient gave to a set of routine questions on the functions of each anatomic body system.	
LOINC Code	**Opt**	**Description**
10187-3	R	REVIEW OF SYSTEMS

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.18'/>
    <id root=' ' extension=' '/>
    <code code='10187-3' displayName='REVIEW OF SYSTEMS'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-29Sample Review of Systems Section

6.1.3.2.16.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.18'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.18"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Review of Systems can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10187-3"]'>
     Error: The section type code of a Review of Systems must be 10187-3
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.2.17Hazardous Working Conditions Section 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.1

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.1	
General Description	Hazardous working conditions contains a narrative description of the patient's hazardous risks.	
LOINC Code	**Opt**	**Description**
10161-8	R	HISTORY OF OCCUPATIONAL EXPOSURE

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.1'/>
    <id root=' ' extension=' '/>
    <code code='10161-8' displayName='HISTORY OF OCCUPATIONAL EXPOSURE'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-30Sample Hazardous Working Conditions Section

6.1.3.2.17.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5.3.1'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.5.3.1"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Hazardous Working Conditions can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10161-8"]'>
     Error: The section type code of a Hazardous Working Conditions must be 10161-8
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.2.18 Pregnancy History Section 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4

Template ID		1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4
General Description		The pregnancy history section contains coded entries describing the patient history of pregnancies.
LOINC Code	**Opt**	**Description**
10162-6	R	HISTORY OF PREGNANCIES
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.13.5	R	Pregnancy Observation

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4'/>
    <id root=' ' extension=' '/>
    <code code='10162-6' displayName='HISTORY OF PREGNANCIES'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Pregnancy Observation  element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.5'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-31 Sample Pregnancy History Section

6.1.3.2.18.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Pregnancy History can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10162-6"]'>
     Error: The section type code of a Pregnancy History must be 10162-6
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.13.5"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Pregnancy History Section must contain a(n) Pregnancy Observation  Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4
   </assert>
 </rule>
</pattern>
```

6.1.3.2.19 Medical Devices Section 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.5

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.5	
Parent Template	2.16.840.1.11383.10.20.1.7 (2.16.840.1.11383.10.20.1.7)	
General Description	The medical devices section contains narrative text describing the patient history of medical device use.	
LOINC Code	**Opt**	**Description**
46264-8	R	HISTORY OF MEDICAL DEVICE USE

6.1.3.2.19.1 Parent Template

The parent of this template is 2.16.840.1.11383.10.20.1.7.

```
<component>
  <section>
    <templateId root='2.16.840.1.11383.10.20.1.7'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.5'/>
    <id root=' ' extension=' '/>
    <code code='46264-8' displayName='HISTORY OF MEDICAL DEVICE USE'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-32 Sample Medical Devices Section

6.1.3.2.19.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5.3.5'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.5.3.5"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Medical Devices can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="2.16.840.1.11383.10.20.1.7"]'>
     Error: The parent template identifier for Medical Devices is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "46264-8"]'>
     Error: The section type code of a Medical Devices must be 46264-8
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.2.20 Foreign Travel Section 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.6

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.6	
General Description	The foreign travel section contains only narrative text describing the patient's travel history.	
LOINC Code	**Opt**	**Description**
10182-4	R	HISTORY OF TRAVEL

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.6'/>
    <id root=' ' extension=' '/>
    <code code='10182-4' displayName='HISTORY OF TRAVEL'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-33 Sample Foreign Travel Section

6.1.3.2.20.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5.3.6'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.5.3.6"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Foreign Travel can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10182-4"]'>
     Error: The section type code of a Foreign Travel must be 10182-4
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.3 Medications

This section contains section content modules that describe activities surrounding the use of medication.

6.1.3.3.1 Medications Section 1.3.6.1.4.1.19376.1.5.3.1.3.19

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.19	
Parent Template	CCD 3.9 (2.16.840.1.113883.10.20.1.8)	
General Description	The medications section shall contain a description of the relevant medications for the patient, e.g. an ambulatory prescription list. It shall include entries for medications as described in the Entry Content Module.	
LOINC Code	**Opt**	**Description**
10160-0	R	HISTORY OF MEDICATION USE
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.7	R	Medications

6.1.3.3.1.1 Parent Template

The parent of this template is CCD 3.9.

```
<component>
  <section>
    <templateId root='2.16.840.1.113883.10.20.1.8'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.19'/>
    <id root=' ' extension=' '/>
    <code code='10160-0' displayName='HISTORY OF MEDICATION USE'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Medications element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-34Sample Medications Section

6.1.3.3.1.2Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.19'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.19"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Medications can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="2.16.840.1.113883.10.20.1.8"]'>
     Error: The parent template identifier for Medications is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10160-0"]'>
     Error: The section type code of a Medications must be 10160-0
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.7"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Medications Section must contain a(n) Medications Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.19
   </assert>
 </rule>
</pattern>
```

Note: This LOINC code is typically used to record the current medication list found in an EHR.

6.1.3.3.2 Admission Medication History Section 1.3.6.1.4.1.19376.1.5.3.1.3.20

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.20
General Description	The admission medication history section shall contain a narrative description of the relevant medications administered to a patient prior to admission to a facility. It shall include entries for medication administration as described in the Entry Content Module.

LOINC Code	Opt	Description
42346-7	R	MEDICATIONS ON ADMISSION
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.7	R	Medications

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.20'/>
    <id root=' ' extension=' '/>
    <code code='42346-7' displayName='MEDICATIONS ON ADMISSION'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Medications element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-35Sample Admission Medication History Section

6.1.3.3.2.1Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.20'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.20"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Admission Medication History can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "42346-7"]'>
     Error: The section type code of a Admission Medication History must be 42346-7
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.7"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Admission Medication History Section must contain a(n) Medications Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.20
   </assert>
 </rule>
</pattern>
```

6.1.3.3.3 Medications Administered Section 1.3.6.1.4.1.19376.1.5.3.1.3.21

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.21	
General Description	The medications administered section shall contain a narrative description of the relevant medications administered to a patient during the course of an encounter. It shall include entries for medication administration as described in the Entry Content Module.	
LOINC Code	**Opt**	**Description**

18610-6	R	MEDICATION ADMINISTERED
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.7	R	Medications

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.21'/>
    <id root=' ' extension=' '/>
    <code code='18610-6' displayName='MEDICATION ADMINISTERED'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Medications element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-36Sample Medications Administered Section

6.1.3.3.3.1Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.21'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.21"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Medications Administered can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "18610-6"]'>
     Error: The section type code of a Medications Administered must be 18610-6
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.7"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Medications Administered Section must contain a(n) Medications Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.21
   </assert>
 </rule>
</pattern>
```

6.1.3.3.4 Hospital Discharge Medications Section 1.3.6.1.4.1.19376.1.5.3.1.3.22

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.22	
General Description	The hospital discharge medications section shall contain a narrative description of the medications requested (ordered) to be administered to the patient after discharge from the hospital. It shall include entries for medication requests as described in the Entry Content Module.	
LOINC Code	**Opt**	**Description**

10183-2	R	HOSPITAL DISCHARGE MEDICATIONS
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.7	R	Medications

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.22'/>
    <id root=' ' extension=' '/>
    <code code='10183-2' displayName='HOSPITAL DISCHARGE MEDICATIONS'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Medications element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-37Sample Hospital Discharge Medications Section

6.1.3.3.4.1Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.22'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.22"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Hospital Discharge Medications can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10183-2"]'>
     Error: The section type code of a Hospital Discharge Medications must be 10183-2
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.7"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Hospital Discharge Medications Section must contain a(n) Medications
Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.22
   </assert>
 </rule>
</pattern>
```

Note: All medications in this section must have sustanceAdministration/@moodCode = "INT"

6.1.3.3.5 Immunizations Section 1.3.6.1.4.1.19376.1.5.3.1.3.23

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.23
Parent Template	CCD 3.11 (2.16.840.1.113883.10.20.1.6)
General Description	The immunizations section shall contain a narrative description of the immunizations administered to the patient in the past. It shall include entries for medication administration as described in the Entry Content Modules.

LOINC Code	Opt	Description
11369-6	R	HISTORY OF IMMUNIZATIONS
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.12	R	Immunization

6.1.3.3.5.1 Parent Template

The parent of this template is CCD 3.11.

```
<component>
  <section>
    <templateId root='2.16.840.1.113883.10.20.1.6'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.23'/>
    <id root=' ' extension=' '/>
    <code code='11369-6' displayName='HISTORY OF IMMUNIZATIONS'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Immunization element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.12'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-38 Sample Immunizations Section

6.1.3.3.5.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.23'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.23"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Immunizations can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="2.16.840.1.113883.10.20.1.6"]'>
     Error: The parent template identifier for Immunizations is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11369-6"]'>
     Error: The section type code of a Immunizations must be 11369-6
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.12"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Immunizations Section must contain a(n) Immunization Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.23
   </assert>
 </rule>
</pattern>
```

6.1.3.4 Physical Exams

6.1.3.4.1 Physical Exam Section 1.3.6.1.4.1.19376.1.5.3.1.3.24

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.24	
General Description	The physical exam section shall contain a narrative description of the patient's physical findings.	
LOINC Code	**Opt**	**Description**
29545-1	R	PHYSICAL EXAMINATION

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.24'/>
    <id root=' ' extension=' '/>
    <code code='29545-1' displayName='PHYSICAL EXAMINATION'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-39 Sample Physical Exam Section

6.1.3.4.1.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.24'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.24"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Physical Exam can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "29545-1"]'>
     Error: The section type code of a Physical Exam must be 29545-1
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.2 Physical Exam Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.15

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.15	
Parent Template	1.3.6.1.4.1.19376.1.5.3.1.3.24 (1.3.6.1.4.1.19376.1.5.3.1.3.24)	
General Description	The physical exam section shall contain only the required and optional subsections performed.	
LOINC Code	**Opt**	**Description**
29545-1	R	PHYSICAL EXAMINATION
Entries	**Opt**	**Description**
Subsections	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.3.25	O	Vital Signs Vital signs may be a subsection of the physical exam or they may stand alone
1.3.6.1.4.1.19376.1.5.3.1.1.9.16	O	General Appearance
1.3.6.1.4.1.19376.1.5.3.1.1.9.48	O	Visible Implanted Medical Devices
1.3.6.1.4.1.19376.1.5.3.1.1.9.17	O	Integumentary System
1.3.6.1.4.1.19376.1.5.3.1.1.9.18	O	Head
1.3.6.1.4.1.19376.1.5.3.1.1.9.19	O	Eyes
1.3.6.1.4.1.19376.1.5.3.1.1.9.20	O	Ears, Nose, Mouth and Throat
1.3.6.1.4.1.19376.1.5.3.1.1.9.21	O	Ears
1.3.6.1.4.1.19376.1.5.3.1.1.9.22	O	Nose
1.3.6.1.4.1.19376.1.5.3.1.1.9.23	O	Mouth, Throat, and Teeth
1.3.6.1.4.1.19376.1.5.3.1.1.9.24	O	Neck
1.3.6.1.4.1.19376.1.5.3.1.1.9.25	O	Endocrine System
1.3.6.1.4.1.19376.1.5.3.1.1.9.26	O	Thorax and Lungs
1.3.6.1.4.1.19376.1.5.3.1.1.9.27	O	Chest Wall
1.3.6.1.4.1.19376.1.5.3.1.1.9.28	O	Breasts

1.3.6.1.4.1.19376.1.5.3.1.1.9.29	O	Heart
1.3.6.1.4.1.19376.1.5.3.1.1.9.30	O	Respiratory System
1.3.6.1.4.1.19376.1.5.3.1.1.9.31	O	Abdomen
1.3.6.1.4.1.19376.1.5.3.1.1.9.32	O	Lymphatic System
1.3.6.1.4.1.19376.1.5.3.1.1.9.33	O	Vessels
1.3.6.1.4.1.19376.1.5.3.1.1.9.34	O	Musculoskeletal System
1.3.6.1.4.1.19376.1.5.3.1.1.9.35	O	Neurologic System
1.3.6.1.4.1.19376.1.5.3.1.1.9.36	O	Genitalia
1.3.6.1.4.1.19376.1.5.3.1.1.9.37	O	Rectum
1.3.6.1.4.1.19376.1.5.3.1.1.16.2.1	O	Extremeties

3585 #### 6.1.3.4.2.1 Parent Template

The parent of this template is 1.3.6.1.4.1.19376.1.5.3.1.3.24.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.24'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.15'/>
    <id root=' ' extension=' '/>
    <code code='29545-1' displayName='PHYSICAL EXAMINATION'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.25'/>
        <!-- Optional Vital Signs Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.16'/>
        <!-- Optional General Appearance Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.48'/>
        <!-- Optional Visible Implanted Medical Devices Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.17'/>
        <!-- Optional Integumentary System Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.18'/>
        <!-- Optional Head Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.19'/>
        <!-- Optional Eyes Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.20'/>
        <!-- Optional Ears, Nose, Mouth and Throat Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.21'/>
        <!-- Optional Ears Section content -->
      </section>
    </component>
```

```
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.22'/>
        <!-- Optional Nose Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.23'/>
        <!-- Optional Mouth, Throat, and Teeth Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.24'/>
        <!-- Optional Neck Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.25'/>
        <!-- Optional Endocrine System Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.26'/>
        <!-- Optional Thorax and Lungs Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.27'/>
        <!-- Optional Chest Wall Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.28'/>
        <!-- Optional Breasts Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.29'/>
        <!-- Optional Heart Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.30'/>
        <!-- Optional Respiratory System Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.31'/>
```

```
        <!-- Optional Abdomen Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.32'/>
        <!-- Optional Lymphatic System Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.33'/>
        <!-- Optional Vessels Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.34'/>
        <!-- Optional Musculoskeletal System Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.35'/>
        <!-- Optional Neurologic System Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.36'/>
        <!-- Optional Genitalia Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.37'/>
        <!-- Optional Rectum Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.16.2.1'/>
        <!-- Optional Extremeties Section content -->
      </section>
    </component>


  </section>
</component>
```

Figure 6.1-40Sample Physical Exam Section

6.1.3.4.2.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.15'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.15"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Physical Exam can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.3.24"]'>
     Error: The parent template identifier for Physical Exam is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "29545-1"]'>
     Error: The section type code of a Physical Exam must be 29545-1
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.25"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Vital Signs Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.16"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) General Appearance Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.48"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Visible Implanted Medical
Devices Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.17"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Integumentary System Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.18"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Head Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.19"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Eyes Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.20"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Ears, Nose, Mouth and Throat
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.21"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Ears Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.22"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Nose Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
```



```
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.23"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Mouth, Throat, and Teeth
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.24"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Neck Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.25"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Endocrine System Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.26"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Thorax and Lungs Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.27"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Chest Wall Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.28"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Breasts Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.29"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Heart Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.30"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Respiratory System Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.31"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Abdomen Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.32"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Lymphatic System Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.33"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Vessels Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.34"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Musculoskeletal System
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.35"]'>
     <!-- Note any missing optional elements -->
     Note: This Physical Exam Section does not contain a(n) Neurologic System Section.
```



```
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.36"]'>
      <!-- Note any missing optional elements -->
      Note: This Physical Exam Section does not contain a(n) Genitalia Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.37"]'>
      <!-- Note any missing optional elements -->
      Note: This Physical Exam Section does not contain a(n) Rectum Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.16.2.1"]'>
      <!-- Note any missing optional elements -->
      Note: This Physical Exam Section does not contain a(n) Extremeties Section.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
    </assert>
  </rule>
</pattern>
```

6.1.3.4.3 Hospital Discharge Physical Exam Section 1.3.6.1.4.1.19376.1.5.3.1.3.26

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.26	
General Description	The hospital discharge physical exam section shall contain a narrative description of the patient's physical findings at discharge from a hospital facility.	
LOINC Code	**Opt**	**Description**
10184-0	R	HOSPITAL DISCHARGE PHYSICAL

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.26'/>
    <id root=' ' extension=' '/>
    <code code='10184-0' displayName='HOSPITAL DISCHARGE PHYSICAL'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-41Sample Hospital Discharge Physical Exam Section

6.1.3.4.3.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.26'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.26"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Hospital Discharge Physical Exam can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10184-0"]'>
     Error: The section type code of a Hospital Discharge Physical Exam must be 10184-0
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.4 Vital Signs Section 1.3.6.1.4.1.19376.1.5.3.1.3.25

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.25	
Parent Template	CCD 3.12 (2.16.840.1.113883.10.20.1.16)	
General Description	The vital signs section shall contain a narrative description of the measurement results of a patient's vital signs.	
LOINC Code	**Opt**	**Description**
8716-3	R	VITAL SIGNS

6.1.3.4.4.1 Parent Template

The parent of this template is CCD 3.12.

```
<component>
  <section>
    <templateId root='2.16.840.1.113883.10.20.1.16'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.25'/>
    <id root=' ' extension=' '/>
    <code code='8716-3' displayName='VITAL SIGNS'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-42 Sample Vital Signs Section

6.1.3.4.4.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.25'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.25"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Vital Signs can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="2.16.840.1.113883.10.20.1.16"]'>
     Error: The parent template identifier for Vital Signs is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "8716-3"]'>
     Error: The section type code of a Vital Signs must be 8716-3
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.5 Coded Vital Signs Section 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2

Template ID		1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2
Parent Template		Vital Signs (1.3.6.1.4.1.19376.1.5.3.1.3.25)
General Description		The vital signs section contains coded measurement results of a patient's vital signs.
LOINC Code	**Opt**	**Description**
8716-3	R	VITAL SIGNS
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.13.1	R	Vital Signs Organizer

6.1.3.4.5.1 Parent Template

The parent of this template is Vital Signs.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.25'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2'/>
    <id root=' ' extension=' '/>
    <code code='8716-3' displayName='VITAL SIGNS'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Vital Signs Organizer element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.1'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-43Sample Coded Vital Signs Section

6.1.3.4.5.2Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Coded Vital Signs can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.3.25"]'>
     Error: The parent template identifier for Coded Vital Signs is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "8716-3"]'>
     Error: The section type code of a Coded Vital Signs must be 8716-3
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.13.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Coded Vital Signs Section must contain a(n) Vital Signs Organizer Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2
   </assert>
 </rule>
</pattern>
```

6.1.3.4.6 General Appearance Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.16

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.16	
General Description	The general appearance section shall contain a description of the overall, visibly-apparent condition of the patient.	
LOINC Code	**Opt**	**Description**
10210-3	R	GENERAL STATUS

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.16'/>
    <id root=' ' extension=' '/>
    <code code='10210-3' displayName='GENERAL STATUS'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-44Sample General Appearance Section

6.1.3.4.6.1Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.16'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.16"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The General Appearance can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10210-3"]'>
     Error: The section type code of a General Appearance must be 10210-3
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.7 Visible Implanted Medical Devices Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.48

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.48	
General Description	The visible implanted medical devices section shall contain a description of the medical devices apparent on physical exam that have been inserted into the patient, whether internal or partially external.	
LOINC Code	**Opt**	**Description**
TBD	R	TBD

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.48'/>
    <id root=' ' extension=' '/>
    <code code='TBD' displayName='TBD'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-45Sample Visible Implanted Medical Devices Section

6.1.3.4.7.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.48'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.48"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Visible Implanted Medical Devices can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "TBD"]'>
     Error: The section type code of a Visible Implanted Medical Devices must be TBD
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.8 Integumentary System Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.17

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.17	
General Description	The integumentary system section shall contain a description of any type of integumentary system exam.	
LOINC Code	**Opt**	**Description**
29302-7	R	INTEGUMENTARY SYSTEM

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.17'/>
    <id root=' ' extension=' '/>
    <code code='29302-7' displayName='INTEGUMENTARY SYSTEM'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-46Sample Integumentary System Section

6.1.3.4.8.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.17'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.17"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Integumentary System can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "29302-7"]'>
     Error: The section type code of a Integumentary System must be 29302-7
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.9 Head Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.18

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.18	
General Description	The head section shall contain a description of any type of head exam.	
LOINC Code	**Opt**	**Description**
10199-8	R	HEAD

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.18'/>
    <id root=' ' extension=' '/>
    <code code='10199-8' displayName='HEAD'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-47 Sample Head Section

6.1.3.4.9.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.18'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.18"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Head can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10199-8"]'>
     Error: The section type code of a Head must be 10199-8
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.10 Eyes Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.19

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.19	
General Description	The eyes section shall contain a description of any type of eye exam.	
LOINC Code	**Opt**	**Description**
10197-2	R	EYE

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.19'/>
    <id root=' ' extension=' '/>
    <code code='10197-2' displayName='EYE'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-48 Sample Eyes Section

6.1.3.4.10.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.19'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.19"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Eyes can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10197-2"]'>
     Error: The section type code of a Eyes must be 10197-2
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.11 Ears, Nose, Mouth and Throat Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.20

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.20	
General Description	The ears, nose, mouth, and throat section shall contain a description of any type of ears, nose, mouth, or throat exam.	
LOINC Code	**Opt**	**Description**
11393-6	R	EARS and NOSE and MOUTH and THROAT

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.20'/>
    <id root=' ' extension=' '/>
    <code code='11393-6' displayName='EARS and NOSE and MOUTH and THROAT'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-49 Sample Ears, Nose, Mouth and Throat Section

6.1.3.4.11.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.20'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.20"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Ears, Nose, Mouth and Throat can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11393-6"]'>
     Error: The section type code of a Ears, Nose, Mouth and Throat must be 11393-6
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.12Ears Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.21

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.21	
General Description	The ears section shall contain a description of any type of ear exam.	
LOINC Code	**Opt**	**Description**
10195-6	R	EAR

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.21'/>
    <id root=' ' extension=' '/>
    <code code='10195-6' displayName='EAR'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-50Sample Ears Section

6.1.3.4.12.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.21'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.21"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Ears can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10195-6"]'>
     Error: The section type code of a Ears must be 10195-6
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.13 Nose Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.22

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.22	
General Description	The nose section shall contain a description of any type of nose exam.	
LOINC Code	**Opt**	**Description**
10203-8	R	NOSE

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.22'/>
    <id root=' ' extension=' '/>
    <code code='10203-8' displayName='NOSE'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-51 Sample Nose Section

6.1.3.4.13.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.22'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.22"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Nose can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10203-8"]'>
     Error: The section type code of a Nose must be 10203-8
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.14 Mouth, Throat and Teeth Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.23

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.23	
General Description	The mouth, throat, and teeth section shall contain a description of any type of mouth, throat, or teeth exam.	
LOINC Code	**Opt**	**Description**
10201-2	R	MOUTH and THROAT and TEETH

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.23'/>
    <id root=' ' extension=' '/>
    <code code='10201-2' displayName='MOUTH and THROAT and TEETH'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-52 Sample Mouth, Throat and Teeth Section

6.1.3.4.14.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.23'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.23"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Mouth, Throat and Teeth can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10201-2"]'>
     Error: The section type code of a Mouth, Throat and Teeth must be 10201-2
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.15Neck Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.24

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.24	
General Description	The neck section shall contain a description of any type of neck exam.	
LOINC Code	**Opt**	**Description**
11411-6	R	NECK

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.24'/>
    <id root=' ' extension=' '/>
    <code code='11411-6' displayName='NECK'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-53Sample Neck Section

6.1.3.4.15.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.24'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.24"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Neck can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11411-6"]'>
     Error: The section type code of a Neck must be 11411-6
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.16 Endocrine System Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.25

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.25	
General Description	The endocrine system section shall contain a description of any type of endocrine system exam.	
LOINC Code	**Opt**	**Description**
29307-6	R	ENDOCRINE SYSTEM

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.25'/>
    <id root=' ' extension=' '/>
    <code code='29307-6' displayName='ENDOCRINE SYSTEM'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-54 Sample Endocrine System Section

6.1.3.4.16.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.25'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.25"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Endocrine System can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "29307-6"]'>
     Error: The section type code of a Endocrine System must be 29307-6
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.17 Thorax and Lungs Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.26

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.26	
General Description	The thorax and lungs section shall contain a description of any type of thoracic or lung exams.	
LOINC Code	**Opt**	**Description**
10207-9	R	THORAX+LUNGS

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.26'/>
    <id root=' ' extension=' '/>
    <code code='10207-9' displayName='THORAX+LUNGS'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-55 Sample Thorax and Lungs Section

6.1.3.4.17.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.26'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.26"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Thorax and Lungs can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10207-9"]'>
     Error: The section type code of a Thorax and Lungs must be 10207-9
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.18 Chest Wall Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.27

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.27	
General Description	The chest wall section shall contain a description of any type of chest wall exam.	
LOINC Code	**Opt**	**Description**
11392-8	R	CHEST WALL

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.27'/>
    <id root=' ' extension=' '/>
    <code code='11392-8' displayName='CHEST WALL'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-56 Sample Chest Wall Section

6.1.3.4.18.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.27'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.27"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Chest Wall can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11392-8"]'>
     Error: The section type code of a Chest Wall must be 11392-8
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.19 Breast Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.28

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.28	
General Description	The breast section shall contain a description of any type of breast exam.	
LOINC Code	**Opt**	**Description**
10193-1	R	BREASTS

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.28'/>
    <id root=' ' extension=' '/>
    <code code='10193-1' displayName='BREASTS'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-57 Sample Breast Section

6.1.3.4.19.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.28'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.28"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Breast can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10193-1"]'>
     Error: The section type code of a Breast must be 10193-1
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.20 Heart Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.29

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.29	
General Description	The heart section shall contain a description of any type of heart exam.	
LOINC Code	**Opt**	**Description**
10200-4	R	HEART

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.29'/>
    <id root=' ' extension=' '/>
    <code code='10200-4' displayName='HEART'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-58 Sample Heart Section

6.1.3.4.20.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.29'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.29"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Heart can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10200-4"]'>
     Error: The section type code of a Heart must be 10200-4
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.21 Respiratory System Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.30

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.30	
General Description	The respiratory system section shall contain a description of any type of respiratory exam.	
LOINC Code	**Opt**	**Description**
11412-4	R	RESPIRATORY SYSTEM

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.30'/>
    <id root=' ' extension=' '/>
    <code code='11412-4' displayName='RESPIRATORY SYSTEM'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-59 Sample Respiratory System Section

6.1.3.4.21.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.30'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.30"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Respiratory System can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11412-4"]'>
     Error: The section type code of a Respiratory System must be 11412-4
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.22 Abdomen Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.31

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.31	
General Description	The abdomen system section shall contain a description of any type of abdominal exam.	
LOINC Code	**Opt**	**Description**
10191-5	R	ABDOMEN

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.31'/>
    <id root=' ' extension=' '/>
    <code code='10191-5' displayName='ABDOMEN'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-60 Sample Abdomen Section

6.1.3.4.22.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.31'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.31"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Abdomen can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10191-5"]'>
     Error: The section type code of a Abdomen must be 10191-5
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.23 Lymphatic System Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.32

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.32	
General Description	The lymphatic system section shall contain a description of any type of lymphatic exam.	
LOINC Code	**Opt**	**Description**
11447-0	R	HEMATOLOGIC+LYMPHATIC+IMMUNOLOGIC SYSTEM

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.32'/>
    <id root=' ' extension=' '/>
    <code code='11447-0' displayName='HEMATOLOGIC+LYMPHATIC+IMMUNOLOGIC SYSTEM'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-61 Sample Lymphatic System Section

6.1.3.4.23.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.32'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.32"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Lymphatic System can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11447-0"]'>
     Error: The section type code of a Lymphatic System must be 11447-0
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.24 Vessels Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.33

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.33	
General Description	The vessels section shall contain a description of any type of vessels exam.	
LOINC Code	**Opt**	**Description**
10208-7	R	VESSELS

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.33'/>
    <id root=' ' extension=' '/>
    <code code='10208-7' displayName='VESSELS'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-62 Sample Vessels Section

6.1.3.4.24.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.33'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.33"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Vessels can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10208-7"]'>
     Error: The section type code of a Vessels must be 10208-7
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.25 Musculoskeletal System Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.34

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.34	
General Description	The musculoskeletal system section shall contain a description of any type of musculoskeletal exam.	
LOINC Code	**Opt**	**Description**
11410-8	R	MUSCULOSKELETAL SYSTEM

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.34'/>
    <id root=' ' extension=' '/>
    <code code='11410-8' displayName='MUSCULOSKELETAL SYSTEM'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-63 Sample Musculoskeletal System Section

6.1.3.4.25.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.34'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.34"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Musculoskeletal System can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11410-8"]'>
     Error: The section type code of a Musculoskeletal System must be 11410-8
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.26 Neurologic System Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.35

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.35	
General Description	The neurologic system section shall contain a description of any type of neurologic exam.	
LOINC Code	**Opt**	**Description**
10202-0	R	NEUROLOGIC SYSTEM

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.35'/>
    <id root=' ' extension=' '/>
    <code code='10202-0' displayName='NEUROLOGIC SYSTEM'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-64 Sample Neurologic System Section

6.1.3.4.26.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.35'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.35"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Neurologic System can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10202-0"]'>
     Error: The section type code of a Neurologic System must be 10202-0
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.27 Genitalia Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.36

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.36	
General Description	The genitalia section shall contain a description of any type of genital exam.	
LOINC Code	**Opt**	**Description**
11400-9	R	GENITALIA

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.36'/>
    <id root=' ' extension=' '/>
    <code code='11400-9' displayName='GENITALIA'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-65 Sample Genitalia Section

6.1.3.4.27.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.36'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.36"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Genitalia can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11400-9"]'>
     Error: The section type code of a Genitalia must be 11400-9
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.28 Rectum Section 1.3.6.1.4.1.19376.1.5.3.1.1.9.37

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.37	
General Description	The rectum section shall contain a description of any type of rectal exam.	
LOINC Code	**Opt**	**Description**
10205-3	R	RECTUM

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.37'/>
    <id root=' ' extension=' '/>
    <code code='10205-3' displayName='RECTUM'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-66 Sample Rectum Section

6.1.3.4.28.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.37'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.37"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Rectum can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10205-3"]'>
     Error: The section type code of a Rectum must be 10205-3
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.4.29 Extremities Section 1.3.6.1.4.1.19376.1.5.3.1.1.16.2.1

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.16.2.1	
General Description	The Extremities section SHALL contain a description of any type of exam on the patient's extremities.	
LOINC Code	**Opt**	**Description**
10196-4	R	EXTREMITIES

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.16.2.1'/>
    <id root=' ' extension=' '/>
    <code code='10196-4' displayName='EXTREMITIES'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-67 Sample Extremities Section

6.1.3.4.29.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.16.2.1'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.16.2.1"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Extremities  can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "10196-4"]'>
     Error: The section type code of a Extremities  must be 10196-4
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.5 Relevant Studies

6.1.3.5.1 Results Section 1.3.6.1.4.1.19376.1.5.3.1.3.27

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.27	
General Description	The results section shall contain a narrative description of the patient's relevant studies.	
LOINC Code	**Opt**	**Description**
30954-2	R	STUDIES SUMMARY

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.27'/>
    <id root=' ' extension=' '/>
    <code code='30954-2' displayName='STUDIES SUMMARY'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-68Sample Results Section

6.1.3.5.1.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.27'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.27"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Results can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "30954-2"]'>
     Error: The section type code of a Results must be 30954-2
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.5.2 Coded Results Section 1.3.6.1.4.1.19376.1.5.3.1.3.28

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.28	
General Description	The results section shall contain a narrative description of the relevant diagnostic procedures the patient received in the past. It shall include entries for procedures and references to procedure reports when known as described in the Entry Content Modules.	
LOINC Code	**Opt**	**Description**
30954-2	R	STUDIES SUMMARY
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.19	R	Procedure Entry
1.3.6.1.4.1.19376.1.5.3.1.4.4	R2	References Entry
1.3.6.1.4.1.19376.1.5.3.1.4.13	O	Simple Observation

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.28'/>
    <id root=' ' extension=' '/>
    <code code='30954-2' displayName='STUDIES SUMMARY'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
         :
      <!-- Required Procedure Entry element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.19'/>
         :
    </entry>
    <entry>
         :
      <!-- Required if known References Entry element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4'/>
         :
    </entry>
    <entry>
         :
      <!-- Optional Simple Observation element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
         :
    </entry>

  </section>
</component>
```

Figure 6.1-69Sample Coded Results Section

6.1.3.5.2.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.28'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.28"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Coded Results can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "30954-2"]'>
     Error: The section type code of a Coded Results must be 30954-2
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.19"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Coded Results Section must contain a(n) Procedure Entry Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.28
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.4"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  Coded Results Section should contain a(n) References Entry Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.28
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.13"]'>
     <!-- Note any missing optional elements -->
     Note: This Coded Results Section does not contain a(n) Simple Observation Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.28
   </assert>
 </rule>
</pattern>
```

6.1.3.5.3 Hospital Studies Summary Section 1.3.6.1.4.1.19376.1.5.3.1.3.29

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.29	
General Description	The hospital studies summary section shall contain a narrative description of the relevant diagnostic procedures the patient received during the hospital admission.	
LOINC Code	**Opt**	**Description**
11493-4	R	HOSPITAL DISCHARGE STUDIES SUMMARY

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.29'/>
    <id root=' ' extension=' '/>
    <code code='11493-4' displayName='HOSPITAL DISCHARGE STUDIES SUMMARY'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-70 Sample Hospital Studies Summary Section

6.1.3.5.3.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.29'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.29"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Hospital Studies Summary can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11493-4"]'>
     Error: The section type code of a Hospital Studies Summary must be 11493-4
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.5.4 Coded Hospital Studies Summary Section 1.3.6.1.4.1.19376.1.5.3.1.3.30

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.30	
Parent Template	Hospital Studies Summary (1.3.6.1.4.1.19376.1.5.3.1.3.29)	
General Description	The hospital studies summary section shall include entries for diagnostic procedures and references to procedure reports when known as described in the Entry Content Modules.	
LOINC Code	**Opt**	**Description**
11493-4	R	HOSPITAL DISCHARGE STUDIES SUMMARY
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.16	R	Procedure Entry
1.3.6.1.4.1.19376.1.5.3.1.4.4	R2	References Entry

6.1.3.5.4.1 Parent Template

The parent of this template is Hospital Studies Summary.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.29'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.30'/>
    <id root=' ' extension=' '/>
    <code code='11493-4' displayName='HOSPITAL DISCHARGE STUDIES SUMMARY'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Procedure Entry element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.16'/>
        :
    </entry>
    <entry>
        :
      <!-- Required if known References Entry element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-71Sample Coded Hospital Studies Summary Section

6.1.3.5.4.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.30'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.30"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Coded Hospital Studies Summary can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.3.29"]'>
     Error: The parent template identifier for Coded Hospital Studies Summary is not
present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11493-4"]'>
     Error: The section type code of a Coded Hospital Studies Summary must be 11493-4
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.16"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Coded Hospital Studies Summary Section must contain a(n) Procedure Entry
Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.30
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.4"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  Coded Hospital Studies Summary Section should contain a(n) References
Entry Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.30
   </assert>
 </rule>
</pattern>
```

6.1.3.6 Plans of Care

This section provides content modules for sections that describe the plan of care intended for the patient.

6.1.3.6.1 Care Plan Section 1.3.6.1.4.1.19376.1.5.3.1.3.31

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.31	
Parent Template	CCD 3.16 (2.16.840.1.113883.10.20.1.10)	
General Description	The care plan section shall contain a narrative description of the expectations for care including proposals, goals, and order requests for monitoring, tracking, or improving the condition of the patient.	
LOINC Code	**Opt**	**Description**
18776-5	R	TREATMENT PLAN

6.1.3.6.1.1 Parent Template

The parent of this template is CCD 3.16.

```
<component>
  <section>
    <templateId root='2.16.840.1.113883.10.20.1.10'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.31'/>
    <id root=' ' extension=' '/>
    <code code='18776-5' displayName='TREATMENT PLAN'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-72Sample Care Plan Section

6.1.3.6.1.2Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.31'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.31"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Care Plan can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="2.16.840.1.113883.10.20.1.10"]'>
     Error: The parent template identifier for Care Plan is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "18776-5"]'>
     Error: The section type code of a Care Plan must be 18776-5
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.6.2 Assessment and Plan Section 1.3.6.1.4.1.19376.1.5.3.1.1.13.2.5

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.5	
General Description	The assessment and plan section shall contain a narrative description of the assessment of the patient condition and expectations for care including proposals, goals, and order requests for monitoring, tracking, or improving the condition of the patient.	
LOINC Code	**Opt**	**Description**
51847-2	R	ASSESSMENT AND PLAN

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.5'/>
    <id root=' ' extension=' '/>
    <code code='51847-2' displayName='ASSESSMENT AND PLAN'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-73Sample Assessment and Plan Section

6.1.3.6.2.1Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.2.5'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.13.2.5"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Assessment and Plan can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "51847-2"]'>
     Error: The section type code of a Assessment and Plan must be 51847-2
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.6.3 Discharge Disposition Section 1.3.6.1.4.1.19376.1.5.3.1.3.32

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.32	
General Description	The plan of care section shall contain a narrative description of the expectations for care including proposals, goals, and order requests for monitoring, tracking, or improving the condition of the patient, specifically used in a discharge from a facility such as a hospital or nursing home.	
LOINC Code	**Opt**	**Description**
18776-5	R	TREATMENT PLAN

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.32'/>
    <id root=' ' extension=' '/>
    <code code='18776-5' displayName='TREATMENT PLAN'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-74Sample Discharge Disposition Section

6.1.3.6.3.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.32'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.32"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Discharge Disposition can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "18776-5"]'>
     Error: The section type code of a Discharge Disposition must be 18776-5
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.6.4 Discharge Diet Section 1.3.6.1.4.1.19376.1.5.3.1.3.33

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.33	
General Description	The discharge diet section shall contain a narrative description of the expectations for diet including proposals, goals, and order requests for monitoring, tracking, or improving the dietary control of the patient, specifically used in a discharge from a facility such as an emergency department, hospital, or nursing home.	
LOINC Code	**Opt**	**Description**
42344-2	R	DISCHARGE DIET

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.33'/>
    <id root=' ' extension=' '/>
    <code code='42344-2' displayName='DISCHARGE DIET'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-75 Sample Discharge Diet Section

6.1.3.6.4.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.33'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.33"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Discharge Diet can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "42344-2"]'>
     Error: The section type code of a Discharge Diet must be 42344-2
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.6.5 Advance Directives Section 1.3.6.1.4.1.19376.1.5.3.1.3.34

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.34	
Parent Template	CCD 3.2 (2.16.840.1.113883.10.20.1.1)	
General Description	The advance directive section shall contain a narrative description of the list of documents that define the patient's expectations and requests for care along with the locations of the documents.	
LOINC Code	**Opt**	**Description**
42348-3	R	ADVANCE DIRECTIVES

6.1.3.6.5.1 Parent Template

The parent of this template is CCD 3.2. This template is compatible with the ASTM/HL7 Continuity of Care Document template: 2.16.840.1.113883.10.20.1.1

```
<component>
  <section>
    <templateId root='2.16.840.1.113883.10.20.1.1'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.34'/>
    <id root=' ' extension=' '/>
    <code code='42348-3' displayName='ADVANCE DIRECTIVES'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-76 Sample Advance Directives Section

6.1.3.6.5.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.34'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.34"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Advance Directives can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="2.16.840.1.113883.10.20.1.1"]'>
     Error: The parent template identifier for Advance Directives is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "42348-3"]'>
     Error: The section type code of a Advance Directives must be 42348-3
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.6.6 Coded Advance Directives Section 1.3.6.1.4.1.19376.1.5.3.1.3.35

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.35	
Parent Template	Advance Directives (1.3.6.1.4.1.19376.1.5.3.1.3.34)	
General Description	The advance directive section shall include entries for references to consent and advance directive documents when known as described in the Entry Content Modules.	
LOINC Code	**Opt**	**Description**
42348-3	R	ADVANCE DIRECTIVES
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.13.7	R2	Advance Directive Observation

6.1.3.6.6.1 Parent Template

The parent of this template is Advance Directives.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.34'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.35'/>
    <id root=' ' extension=' '/>
    <code code='42348-3' displayName='ADVANCE DIRECTIVES'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required if known Advance Directive Observation element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.7'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-77Sample Coded Advance Directives Section

6.1.3.6.6.2Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.35'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.35"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Coded Advance Directives can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.3.34"]'>
     Error: The parent template identifier for Coded Advance Directives is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "42348-3"]'>
     Error: The section type code of a Coded Advance Directives must be 42348-3
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.13.7"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  Coded Advance Directives Section should contain a(n) Advance Directive
Observation Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.35
   </assert>
 </rule>
</pattern>
```

6.1.3.6.7 Transport Mode Section 1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2

Template ID		1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2
General Description		The transport mode section contains a description of the mode of transport and the time of departure or arrival of the patient to a facility.
LOINC Code	**Opt**	**Description**
11459-5	R	TRANSPORT MODE
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.1.10.4.1	R	Transport

		This entry provides coded values giving the mode and time of departure or arrival of the patient to a facility.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2'/>
    <id root=' ' extension=' '/>
    <code code='11459-5' displayName='TRANSPORT MODE'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Transport element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.4.1'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-78Sample Transport Mode Section

6.1.3.6.7.1Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Transport Mode can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11459-5"]'>
     Error: The section type code of a Transport Mode must be 11459-5
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.10.4.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Transport Mode Section must contain a(n) Transport Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2
   </assert>
 </rule>
</pattern>
```

6.1.3.7 Administrative and Other Information

6.1.3.7.1 Payers Section 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.7

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.7	
Parent Template	CCD 3.1 (2.16.840.1.113883.10.20.1.9)	
General Description	The Payers section contains data on the patient's payers, whether a 'third party' insurance, self-pay, other payer or guarantor, or some combination.	
LOINC Code	**Opt**	**Description**
48768-6	R	PAYMENT SOURCES

Entries	Opt	Description
1.3.6.1.4.1.19376.1.5.3.1.4.17	R2	Coverage Entry

6.1.3.7.1.1 Parent Template

The parent of this template is CCD 3.1.

```
<component>
  <section>
    <templateId root='2.16.840.1.113883.10.20.1.9'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.7'/>
    <id root=' ' extension=' '/>
    <code code='48768-6' displayName='PAYMENT SOURCES'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required if known Coverage Entry element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.17'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-79 Sample Payers Section

6.1.3.7.1.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5.3.7'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.5.3.7"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Payers can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="2.16.840.1.113883.10.20.1.9"]'>
     Error: The parent template identifier for Payers is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "48768-6"]'>
     Error: The section type code of a Payers must be 48768-6
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.17"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: The  Payers Section should contain a(n) Coverage Entry Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5.3.7
   </assert>
 </rule>
</pattern>
```

6.1.3.7.2 Referral Source Section 1.3.6.1.4.1.19376.1.5.3.1.1.13.2.3

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.3

General Description	The Referral Source section shall contain a narrative description of the referral source of the patient. Patients who are not referred by a particular agency or health care provider should be designated as "self referred".	
LOINC Code	**Opt**	**Description**
11293-8	R	ED REFERRAL SOURCE

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.3'/>
    <id root=' ' extension=' '/>
    <code code='11293-8' displayName='ED REFERRAL SOURCE'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 6.1-80Sample Referral Source Section

6.1.3.7.2.1Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.2.3'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.13.2.3"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Referral Source can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11293-8"]'>
     Error: The section type code of a Referral Source must be 11293-8
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.1.3.7.3 Transport Mode Section 1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2	
General Description	The transport mode section contains a description of the mode of transport and the time of departure or arrival of the patient to a facility.	
LOINC Code	**Opt**	**Description**
11459-5	R	TRANSPORT MODE
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.1.10.4.1	R	Transport This entry provides coded values giving the mode and time of departure or arrival of the patient to a facility.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2'/>
    <id root=' ' extension=' '/>
    <code code='11459-5' displayName='TRANSPORT MODE'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Transport element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.4.1'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.1-81 Sample Transport Mode Section

6.1.3.7.3.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Transport Mode can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11459-5"]'>
     Error: The section type code of a Transport Mode must be 11459-5
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.10.4.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: The Transport Mode Section must contain a(n) Transport Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2
   </assert>
 </rule>
</pattern>
```

6.1.3.7.4 ED Disposition Section 1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10	
General Description	The ED Disposition section contains descriptions of the various components of ED Disposition, including disposition from the ED, time of disposition, intended transportation mode, time of transport, and the non-ED practitioner the patient's care will be transferred to.	
LOINC Code	**Opt**	**Description**
11302-7	R	ED DISPOSITION
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.1.10.4.2	R	Encounter Disposition This required entry describes the expected or actual disposition of the patient after the emergency department encounter has been completed.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10'/>
    <id root=' ' extension=' '/>
    <code code='11302-7' displayName='ED DISPOSITION'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Encounter Disposition element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.4.2'/>
         :
    </entry>

  </section>
</component>
```

Figure 6.1-82Sample ED Disposition Section

6.1.3.7.4.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The ED Disposition can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='cda:code[@code = "11302-7"]'>
     Error: The section type code of a ED Disposition must be 11302-7
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.10.4.2"]'>
     <!-- Verify that all required data elements are present -->
     Error: The ED Disposition Section must contain a(n) Encounter Disposition Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10
   </assert>
 </rule>
</pattern>
```

6.1.4 CDA and HL7 Version 3 Entry Content Modules

6.1.4.1 Authors and Informants

Each clinical statement that can be made in a CDA Document or HL7 Version 3 message shall be attributable to one or more authors. These are found in <author> elements, either directly within the clinical statement, or in one of its ancestors in the XML document or message.

Each clinical statement may also contain information from zero or more informants. These are found in <informant> elements, again, either directly within the clinical statement, or in one of its ancestors in the XML document or message.

6.1.4.1.1 <author>

Authors shall be described in an <author> element that is either directly on the clinical statement, or which can be reached by one of its ancestors.

6.1.4.1.2 <time value=' '/>

The time of authorship shall be recorded in the <time> element.

6.1.4.1.3 <assignedAuthor> -OR- <assignedEntity1> <id root=' ' extension=' '> <addr></addr> <telecom value=' ' use=' '>

In a CDA document details about the author are provided in the <assignedAuthor> element. In Version 3 messages, they are provided in the <assignedEntity1> element. The semantics are identical even though the element names differ. The identifier of the author, and their address and telephone number shall be present inside the <id>, <addr> and <telecom> elements.

6.1.4.1.4 <assignedPerson><name></name></assignedPerson> <representedOrganization><name></name></representedOrganization>

The author's and/or the organization's name shall be present when the <author> element is present.

6.1.4.2 Linking Narrative and Coded Entries

This section defines a linking mechanism that allows entries or portions thereof to be connected to the text of the clinical document.

6.1.4.2.1 Standards

RIM	HL7 Version 3 Reference Information Model
CDAR2	HL7 Clinical Document Architecture Release 2.0

6.1.4.2.2 Constraints for CDA

Elements within the narrative <text> will use the ID attribute to provide a destination for links. Elements within an <entry> will be linked to the text via a URI reference using this attribute as the fragment identifier. This links the coded entry to the specific narrative text it is related to within the CDA instance, and can be traversed in either direction. This serves three purposes:

1. It supports diagnostics during software development and testing.

2. It provides a mechanism to enrich the markup that can be supported in the viewing application.
3. It eliminates the need to duplicate content in two places, which prevents a common source of error, and eliminates steps needed to validate that content that should be identical in fact is.

Each narrative content element within CDA may have an ID attribute. This attribute is of type xs:ID. This means that each ID in the document must be unique within that document. Within an XML document, an attribute of type xs:ID must start with a letter, and may be followed one or more letters, digits, hyphens or underscores . Three different examples showing the use of the ID attribute, and references to it appear below:

Use of ID	References to ID
<tr ID='foo'> <td ID='bar'>Table Cell 1</td> <td>Table Cell 2</td> </tr>	<code> <originalText><reference value='#foo'></originalText> </code> <code> <originalText><reference value='#bar'></originalText> </code>
<list> <item ID='baz'>List item 1</item> </list>	<code> <originalText><reference value='#baz'></originalText> </code>
<paragraph ID='p-1'>A paragraph <content ID='c-1'>with content</content> </paragraph>	<code> <originalText><reference value='#p-1'></originalText> </code> <code> <originalText><reference value='#c-1'></originalText> </code>

Table 6.1.4.2.2-1Example Uses of ID

This allows the text to be located with a special type of URI reference, which simply contains a fragment identifier. This URI is local to the document and so just begins with a hash mark (#), and is followed by the value of the ID being referenced. Given one of these URIs stored in a variable named theURI, the necessary text value can be found via the following XPath expression:

```
string(//*[@ID=substring-after('#',$theURI)])
```

The table below shows the result of this expression using the examples above:

$theURI	Returned Value
"#bar"	"Table Cell 1"
"#foo"	"Table Cell 1Table Cell 2" (note the spacing issue between 1 and T)
"#p-1"	"A paragraph with content"
"#c-1"	"with content"

If your XSLT processor is schema aware, even more efficient mechanisms exist to locate the element than the above expression.

Having identified the critical text in the narrative, any elements using the HL7 CD datatype (e.g., <code>) can then contain a <reference> to the <originalText> found in the narrative. That is why, although CDA allows <value> to be of any type in <entry> elements, this profile restricts them to always be of xsi:type='CD'.

Now, given an item with an ID stored in a variable named theID all <reference> elements referring to it can be found via the following XPath expression:

```
//cda:reference[@URI=concat('#',$theID)]
```

6.1.4.2.3 Constraints for HL7 Version 3 Messages

Unlike CDA entries, structured statements in HL7 Version 3 Messages do not have a related narrative text section. Therefore full text representations should be included in the <text> element care statement acts.

6.1.4.3 Severity 1.3.6.1.4.1.19376.1.5.3.1.4.1

Any condition or allergy may be the subject of a severity observation. This structure is included in the target act using the <entryRelationship> element defined in the CDA Schema.

The example below shows the recording the condition or allergy severity, and is used as the context for the following sections.

6.1.4.3.1 Standards

PatCareStruct	HL7 Care Provision Domain (DSTU)
CCD	ASTM/HL7 Continuity of Care Document

6.1.4.3.2 Specification

```
<observation classCode='COND' moodCode='EVN'>


  <entryRelationship typeCode='SUBJ' inversionInd='true'>
    <observation classCode='OBS' moodCode='EVN'>
      <templateId root='2.16.840.1.113883.10.20.1.55'/>
      <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.1'/>
      <code code='SEV' displayName='Severity'
        codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActCode' />
      <text><reference value='#severity-2'/></text>
      <statusCode code='completed'/>
      <value xsi:type='CD' code='H|M|L'
        codeSystem='2.16.840.1.113883.5.1063'
        codeSystemName='ObservationValue' />
    </observation>
  </entryRelationship>


</observation>
```

This specification models a severity observation as a separate observation from the condition. While this model is different from work presently underway by various organizations (i.e., SNOMED, HL7, TermInfo), it is not wholly incompatible with that work. In that work, qualifiers may be used to identify severity in the coded condition observation, and a separate severity observation is no longer necessary. The use of qualifiers is not precluded by this specification. However, to support semantic interoperability between EMR systems using different vocabularies, this specification does require that severity information also be provided in a separate observation. This ensures that all EMR systems have equal access to the information, regardless of the vocabularies they support.

6.1.4.3.2.1 <entryRelationship typeCode='SUBJ' inversionInd='true'>

The related statement is made about the severity of the condition (or allergy). For CDA, this observation is recorded inside an <entryRelationship> element occurring in the condition, allergy or medication entry. The containing <entry> is the subject (typeCode='SUBJ') of this new observation, which is the inverse of the normal containment structure, thus inversionInd='true'. For HL7 Version 3 Messages this relationship is represented with a <sourceOf> element, however the semantics, typeCode, and inversionInd is unchanged.

6.1.4.3.2.2 <observation moodCode='EVN' classCode='OBS'>

The related statement is another event (moodCode='EVN') observing (<observation classCode='OBS'>) the severity of the (surrounding) related entry (e.g., a condition or allergy).

6.1.4.3.2.3 <templateId root='2.16.840.1.113883.10.20.1.55'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.1'/>

The <templateId> elements identifies this <observation> as a severity observation, allowing for validation of the content. As a side effect, readers of the CDA can quickly locate and identify severity observations. The templateId elements shown above must be present.

6.1.4.3.2.4 <code code='SEV' codeSystem='2.16.840.1.113883.5.4' displayName='Severity' codeSystemName='ActCode' />

This observation is of severity, as indicated by the <code> element listed above. This element is required. The code and codeSystem attributes shall be recorded exactly as shown above.

6.1.4.3.2.5 <text><reference value='#severity-2'/></text>

The <observation> element shall contain a <text> element. For CDA, the <text> elements shall contain a <reference> element pointing to the narrative where the severity is recorded, rather than duplicate text to avoid ambiguity. For HL7 Version 3 Messages, the <text> element should contain the full narrative text.

6.1.4.3.2.6 <statusCode code='completed'/>

The code attribute of <statusCode> for all severity observations shall be completed. While the <statusCode> element is required in all acts to record the status of the act, the only sensible value of this element in this context is completed.

6.1.4.3.2.7 <value xsi:type='CD' code='H|M|L' codeSystem='2.16.840.1.113883.5.1063' codeSystemName='SeverityObservation'>

The <value> element contains the level of severity. It is always represented using the CD datatype (xsi:type='CD'), even though the value may be a coded or uncoded string. If coded, it should use the HL7 SeverityObservation vocabulary (codeSystem='2.16.840.1.113883.5.1063') containing three values (H, M, and L), representing high, moderate and low severity depending upon whether the severity is life threatening, presents noticeable adverse consequences, or is unlikely substantially effect the situation of the subject.

6.1.4.4 Problem Status Observation 1.3.6.1.4.1.19376.1.5.3.1.4.1.1

Any problem or allergy observation may reference a problem status observation. This structure is included in the target observation using the <entryRelationship> element defined in the CDA Schema. The clinical status observation records information about the current status of the problem or allergy, for example, whether it is active, in remission, resolved, et cetera. The example below shows the recording of clinical status of a condition or allergy, and is used as the context for the following sections.

6.1.4.4.1 Standards

CCD ASTM/HL7 Continuity of Care Document

6.1.4.4.2 Specification

```
 <entry>
   <observation classCode='OBS' moodCode='EVN'>

     <entryRelationship typeCode='REFR' inversionInd='false'>
       <observation classCode='OBS' moodCode='EVN'>
         <templateId root='2.16.840.1.113883.10.20.1.57'/>
         <templateId root='2.16.840.1.113883.10.20.1.50'/>
         <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.1.1'/>
         <code code='33999-4' displayName='Status'
           codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC' />
         <text><reference value='#cstatus-2'/></text>
         <statusCode code='completed'/>
         <value xsi:type='CE' code=' ' codeSystem='2.16.840.1.113883.6.96'
codeSystemName='SNOMED CT'/>
       </observation>
     </entryRelationship>

   </observation>
 </entry>
```

This CCD models a problem status observation as a separate observation from the problem, allergy or medication observation. While this model is different from work presently underway by various organizations (i.e., SNOMED, HL7, TermInfo), it is not wholly incompatible with that work. In that work, qualifiers may be used to identify problem status in the coded condition observation, and a separate clinical status observation is no longer necessary. The use of qualifiers in the problem observation is not precluded by this specification or by CCD. However, to support semantic interoperability between EMR systems using different vocabularies, this specification does require that problem status information also be provided in a separate observation. This ensures that all EMR systems have equal access to the information, regardless of the vocabularies they support.

6.1.4.4.3 <entryRelationship typeCode='REFR' inversionInd='false'>

The related statement is made about the clinical status of the problem or allergy. For CDA, this observation is recorded inside an <entryRelationship> element occurring in the problem or allergy. For HL7 Version 3 Messages, the <entryRelationship> tag name is <sourceOf>, though the typeCode and inversionInd attributes and other semantics remain the same. The containing observation refers to (typeCode='REFR') this new observation.

6.1.4.4.4 <observation moodCode='EVN' classCode='OBS'>

The related statement is another event (moodCode='EVN') observing (<observation classCode='OBS'>) the clinical status of the (surrounding) related observation (e.g., a problem or allergy).

6.1.4.4.5 <templateId root='2.16.840.1.113883.10.20.1.57'/> <templateId root='2.16.840.1.113883.10.20.1.50'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.1.1'/>

These <templateId> elements identify this <observation> as a problem status observation, allowing for validation of the content.

6.1.4.4.6 <code code='33999-4' codeSystem='2.16.840.1.113883.6.1' displayName='Status' codeSystemName='LOINC' />

This observation is of clinical status, as indicated by the <code> element. This element must be present. The code and codeSystem shall be recorded exactly as shown above.

6.1.4.4.7 <text><reference value='#cstatus-2'/></text>

The <observation> element shall contain a <text> element that points to the narrative text describing the clinical status. For CDA, the <text> elements shall contain a <reference> element pointing to the narrative section (see Linking Narrative and Coded Entries), rather than duplicate text to avoid ambiguity. For HL7 Version 3 Messages, the <text> element SHALL contain the full narrative text.

6.1.4.4.8 <statusCode code='completed'/>

The code attribute of <statusCode> for all clinical status observations shall be completed. While the <statusCode> element is required in all acts to record the status of the act, the only sensible value of this element in this context is completed.

6.1.4.4.9 <value xsi:type='CE' code=' ' displayName=' ' codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'>

The <value> element contains the clinical status. It is always represented using the CE datatype (xsi:type='CE'). It shall contain a code from the following set of values from SNOMED CT.

Code	Description
55561003	Active
73425007	Inactive
90734009	Chronic
7087005	Intermittent
255227004	Recurrent
415684004	Rule out
410516002	Ruled out
413322009	Resolved

6.1.4.5 Health Status 1.3.6.1.4.1.19376.1.5.3.1.4.1.2

A problem observation may reference a health status observation. This structure is included in the target observation using the <entryRelationship> element defined in the CDA Schema. The health status observation records information about the current health status of the patient. The example below shows the recording the health status, and is used as the context for the following sections.

6.1.4.5.1 Specification

```
<entry>
 <observation classCode='OBS' moodCode='EVN'>

   <entryRelationship typeCode='REFR' inversionInd='false'>
     <observation classCode='OBS' moodCode='EVN'>
       <templateId root='2.16.840.1.113883.10.20.1.51'/>
       <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.1.2'/>
       <code code='11323-3' displayName='Health Status'
         codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC' />
       <text><reference value='#hstatus-2'/></text>
       <statusCode code='completed'/>
       </value>
       <value xsi:type='CE' code=' ' codeSystem='2.16.840.1.113883.6.96'
codeSystemName='SNOMED CT'/>
     </observation>
   </entryRelationship>

 </observation>
</entry>
```

This specification models a health status observation as a separate observation about the patient.

6.1.4.5.2 <entryRelationship typeCode='REFR'>

The related statement is made about the health status of the patient. For CDA, this observation is recorded inside an <entryRelationship> element occurring in the observation. The contained observersation is referenced (typeCode='REFR') by the observation entry. For HL7 Version 3 Messages, the entryRelationship tagName is sourceOf, though the typeCode and inversionInd attributes and other semantics remain the same.

6.1.4.5.3 <observation moodCode='EVN' classCode='OBS'>

The related statement is another event (moodCode='EVN') observing (<observation classCode='OBS'>) the health status of the patient.

6.1.4.5.4 <templateId root='2.16.840.1.113883.10.20.1.51'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.1.2'/>

The <templateId> element identifies this <observation> as a health status observation, allowing for validation of the content.

6.1.4.5.5 <code code='11323-3' displayName='Health Status' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC' />

This observation is of health status, as indicated by the <code> element. This element must be present. The code and codeSystem attributes shall be recorded exactly as shown above.

6.1.4.5.6 <text><reference value='#hstatus-2'/></text>

The <observation> element shall contain a <text> element that contains the narrative text describing the clinical status. For CDA, the <text> elements shall contain a <reference> element pointing to the narrative section (see Linking Narrative and Coded Entries, rather than duplicate text to avoid ambiguity. For HL7 Version 3 Messages, the <text> element shall contain the full narrative text.

6.1.4.5.7 <statusCode code='completed'/>

The code attribute of <statusCode> for all health status observations shall be completed. While the <statusCode> element is required in all acts to record the status of the act, the only sensible value of this element in this context is completed.

6.1.4.5.8 <value xsi:type='CE' code=' ' displayName=' ' codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'>

The <value> element contains the clinical status. It is always represented using the CE datatype (xsi:type='CE').

Code	Description
81323004	Alive and well
313386006	In remission
162467007	Symptom free
161901003	Chronically ill
271593001	Severely ill
21134002	Disabled
161045001	Severely disabled
419099009	Deceased

6.1.4.6 Comments 1.3.6.1.4.1.19376.1.5.3.1.4.2

This entry allows for a comment to be supplied with each entry. For CDA this structure is usually included in the target act using the <entryRelationship> element defined in the CDA Schema, but can also be used in the <component> element when the comment

appears within an <organizer>. The example below shows recording a comment for an <entry>, and is used as context for the following sections. For HL7 Version 3 Messages, this relationship is represented with the element <sourceOf>, although the remainder of the typecodes and semantics are unchanged.

Any condition or allergy may be the subject of a comment.

6.1.4.6.1 Standards

CareStruct	HL7 Care Provision Care Structures (DSTU)
CCD	ASTM/HL7 Continuity of Care Document

6.1.4.6.2 Specification

```
<entry>
  <observation classCode='OBS' moodCode='EVN'>
    <entryRelationship typeCode='SUBJ' inversionInd='true'>
      <act classCode='ACT' moodCode='EVN'>
        <templateId root='2.16.840.1.113883.10.20.1.40'/>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.2'/>
        <code code='48767-8' displayName='Annotation Comment'
          codeSystem='2.16.840.1.113883.6.1'
          codeSystemName='LOINC' />
        <text><reference value='#comment-2'/></text>
        <statusCode code='completed' />
        <author>
          <time value=''/>
          <assignedAuthor>
            <id root='' extension=''>
            <addr></addr>
            <telecom value='' use=''>
            <assignedPerson><name></name></assignedPerson>
            <representedOrganization><name></name></representedOrganization>
          </assignedAuthor>
        </author>
      </act>
    </entryRelationship>
  </observation>
</entry>
<entry>
  <organizer>
    <component typeCode='COMP'>
      <act classCode='ACT' moodCode='EVN'>
        <templateId root='2.16.840.1.113883.10.20.1.40'/>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.2'/>
        <code code='48767-8' displayName='Annotation Comment'
          codeSystem='2.16.840.1.113883.6.1'
          codeSystemName='LOINC' />
            :
      </act>
    </component>
  </organizer>
</entry>
```

6.1.4.6.3 <entryRelationship typeCode='SUBJ' inversionInd='true'> or <component typeCode='COMP'/>

A related statement is made about an act, or a cluster or battery of results. In CDA the former shall be recorded inside an <entryRelationship> element occurring at the end of the entry. The containing act is the subject (typeCode='SUBJ') of this new observation, which is the inverse of the normal containment structure, thus inversionInd='true'.

For HL7 Version 3 Messages, the relationship element is <sourceOf>, however the typeCode and inversionInd remain the same.

In the latter case, the comment shall be recorded inside a <commponent> element contained within the <organizer> element.

6.1.4.6.4 <act classCode='ACT' moodCode='EVN'>

The related statement is an event (moodCode='EVN') describing the act (classCode='ACT') of making an arbitrary comment or providing instruction on the related entry.

6.1.4.6.5 <templateId root='2.16.840.1.113883.10.20.1.40'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.2'/>

These <templateId> elements identify this <act> as a comment, allowing for validation of the content.

6.1.4.6.6 <code code='48767-8' displayName='Annotation Comment' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC' />

The <code> element indicates that this is a comment and shall be recorded as shown above. The codeSystem and code attributes shall use the values specified above.

6.1.4.6.7 <text><reference value='#comment-2'/></text>

The <text> element provides a way to represent the <reference> to the text of the comment in the narrative portion of the document. For CDA, this SHALL be represented as a <reference> element that points to the narrative text section of the CDA. The comment itself is not the act being coded, so it appears in the <text> of the <observation>, not as part of the <code>. For HL7 Version 3 Messages, the <text> element SHALL contain the full narrative text.

6.1.4.6.8 <statusCode code='completed' />

The code attribute of <statusCode> for all comments must be completed.

6.1.4.6.9 <author>

The comment may have an author.

6.1.4.6.10 <time value=' '/>

The time of the comment creation shall be recorded in the <time> element when the <author> element is present.

6.1.4.6.11 <assignedAuthor> <id root=' ' extension=' '> <addr></addr> <telecom value=' ' use=' '>

The identifier of the author, and their address and telephone number must be present inside the <id>, <addr> and <telecom> elements when the <author> element is present.

6.1.4.6.12 <assignedPerson><name></name></assignedPerson> <representedOrganization><name></name></representedOrganization>

The author's and/or the organization's name must be present when the <author> element is present.

6.1.4.7 Patient Medication Instructions 1.3.6.1.4.1.19376.1.5.3.1.4.3

Any medication may be the subject of further instructions to the patient, for example to indicate that it should be taken with food, et cetera.

This structure is included in the target substance administration or supply act using the <entryRelationship> element defined in the CDA Schema. The example below shows the recording of patient medication instruction for an <entry>, and is used as context for the following section.

6.1.4.7.1 Standards

Pharmacy HL7 Pharmacy Domain (Normative)

6.1.4.7.2 Specification

```
<entry>
 <substanceAdministration classCode='SBADM' moodCode='EVN'>
        □
   <entryRelationship typeCode='SUBJ' inversionInd='true'>
     <act classCode='ACT' moodCode='INT'>
       <templateId root='2.16.840.1.113883.10.20.1.49'/>
       <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.3'/>
       <code code='PINSTRUCT' codeSystem='1.3.6.1.4.1.19376.1.5.3.2'
         codeSystemName='IHEActCode' />
       <text><reference value='#comment-2'/></text>
       <statusCode code='completed' />
     </act>
   </entryRelationship>
        □
 </substanceAdministration>
</entry>
```

6.1.4.7.3 <entryRelationship typeCode='SUBJ' inversionInd='true'>

Again, a related statement is made about the medication or immunization. This observation is recorded inside an <entryRelationship> element occurring at the end of the substance administration or supply entry. The containing <entry> is the subject (typeCode='SUBJ') of this new observation, which is the inverse of the normal containment structure, thus inversionInd='true'.

6.1.4.7.4 <act classCode='ACT' moodCode='INT'>

The related statement is the intent (moodCode='INT') on how the related entry is to be performed. .

6.1.4.7.5 <templateId root='2.16.840.1.113883.10.20.1.49'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.3'/>

These <templateId> elements identify this <act> as a medication instruction, allowing for validation of the content. As a side effect, readers of the CDA can quickly locate and identify medication instructions.

6.1.4.7.6 <code code='PINSTRUCT' codeSystem='1.3.6.1.4.1.19376.1.5.3.2' codeSystemName='IHEActCode' />

The <code> element indicates that this is a patient medication instruction. This element shall be recorded exactly as specified above.

Note: These values will be sent to HL7 for harmonization with the HL7 Act Vocabulary.

6.1.4.7.7 <text><reference value='#comment-2'/></text>

The <text> element indicates the text of the comment. For CDA, this SHALL be represented as a <reference> element that points at the narrative portion of the document. The comment itself is not the act being coded, so it appears in the <text> of the <observation>, not as part of the <code>. For HL7 Version 3 Messages, the full text SHALL be represented here.

6.1.4.7.8 <statusCode code='completed' />

The code attribute of <statusCode> for all comments must be completed.

6.1.4.8 Medication Fulfillment Instructions 1.3.6.1.4.1.19376.1.5.3.1.4.3.1

Any medication may be the subject of further instructions to the pharmacist, for example to indicate that it should be labeled in Spanish, et cetera.

This structure is included in the target substance administration or supply act using the <entryRelationship> element defined in the CDA Schema. The figure below is an example of recording an instruction for an <entry>, and is used as context for the following sections.

6.1.4.8.1 Standards

Pharmacy HL7 Pharmacy Domain (Normative)

6.1.4.8.2 Specification

```
<entry>
 <supply classCode='SPLY' moodCode='EVN'>
        □
   <entryRelationship typeCode='SUBJ' inversionInd='true'>
     <act classCode='ACT' moodCode='INT'>
       <templateId root='2.16.840.1.113883.10.20.1.43'/>
       <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.3.1'/>
       <code code='FINSTRUCT' codeSystem='1.3.6.1.4.1.19376.1.5.3.2'
         codeSystemName='IHEActCode' />
       <text><reference value='#comment-2'/></text>
       <statusCode code='completed' />
     </act>
   </entryRelationship>
        □
 </supply>
</entry>
```

6.1.4.8.3 <entryRelationship typeCode='SUBJ' inversionInd='true'>

Again, a related statement is made about the medication or immunization. In CDA, this observation is recorded inside an <entryRelationship> element occurring at the end of the substance administration or supply entry. The containing <act> is the subject (typeCode='SUBJ') of this new observation, which is the inverse of the normal containment structure, thus inversionInd='true'. For HL7 Version 3 Messages, this relationship is represented with the <sourceOf> element however the semantics, typeCode, and inversionInd remain the same.

6.1.4.8.4 <act classCode='ACT' moodCode='INT'>

The related statement is the intent (moodCode='INT') on how the related entry is to be performed.

6.1.4.8.5 <templateId root='2.16.840.1.113883.10.20.1.43'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.3.1'/>

These <templateId> elements identify this <act> as a medication fulfillment instruction, allowing for validation of the content.

6.1.4.8.6 <code code='FINSTRUCT' codeSystem='1.3.6.1.4.1.19376.1.5.3.2' codeSystemName='IHEActCode' />

The <code> element indicates that this is a medication fulfillment instruction. This element shall be recorded exactly as specified above.

Note: These values will be sent to HL7 for harmonization with the HL7 Act Vocabulary.

6.1.4.8.7 <text><reference value='#comment-2'/></text>

The <text> element contains a free text representation of the instruction. For CDA this SHALL contain a provides a <reference>element to thelink text of the comment in the narrative portion of the document. The comment itself is not the act being coded, so it appears in the <text> of the <observation>, not as part of the <code>. For HL7 Version 3 Messages, the full text SHALL be represented here.

6.1.4.8.8 <statusCode code='completed' />

The code attribute of <statusCode> for all comments must be completed.

6.1.4.9 External References 1.3.6.1.4.1.19376.1.5.3.1.4.4

CDA Documents may reference information contained in other documents. While CDA Release 2.0 supports references in content via the <linkHtml> element, this is insufficient for many EMR systems as the link is assumed to be accessible via a URL, which is often not the case. In order to link an external reference, one needs the document identifier, and access to the clinical system wherein the document resides. For a variety of reasons, it is desirable to refer to the document by its identity, rather than by linking through a URL.

1. The identity of a document does not change, but the URLs used to access it may vary depending upon location, implementation, or other factors.
2. Referencing clinical documents by identity does not impose any implementation specific constraints on the mechanism used to resolve these references, allowing the content to be implementation neutral. For example, in the context of an XDS Affinity domain the clinical system used to access documents would be an XDS Registry and one or more XDS Repositories where documents are stored. In other contexts, access might be through a Clincial Data Repository (CDR), or

Document Content Management System (DCMS). Each of these may have different mechanisms to resolve a document identifier to the document resource.

3. The identity of a document is known before the document is published (e.g., in an XDS Repository, Clincial Data Repository, or Document Content Management System), but its URL is often not known. Using the document identity allows references to existing documents to be created before those documents have been published to a URL. This is important to document creators, as it does not impose workflow restrictions on how links are created during the authoring process.

Fortunately, CDA Release 2.0 also provides a mechanism to refer to external documents in an entry, as shown below.

6.1.4.9.1 Specification

```
<entry>
  <act classCode='ACT' moodCode='EVN'>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4'/>
    <id root='' extension=''/>
    <code nullFlavor='NA' />
    <text><reference value='#study-1'/></text>
    <!-- For CDA -->
    <reference typeCode='REFR|SPRT'>
      <externalDocument classCode='DOC' moodCode='EVN'>
        <id extension='' root=''/>
        <text><reference value='http://foo..'/></text>
      </externalDocument>
    </reference>
    <!-- For HL7 Version 3 Messages
    <sourceOf typeCode='REFR|SPRT'>
       <act classCode='DOC' moodCode='EVN'>
          <id extension='' root=''/>
          <text><reference value='http://foo…'</text>
       </act>
    </sourceOf>
     -->
  </act>
</entry>
```

6.1.4.9.2 <act classCode='ACT' moodCode='EVN'>

The external reference is an act that refers to documentation of an <act> (classCode='ACT'), that previously occurred (moodCode='EVN').

6.1.4.9.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4'/>

The <templateId> element identifies this <act> as a reference act, allowing for validation of the content. As a side effect, readers of the CDA can quickly locate and identify reference acts. The templateId must have root='1.3.6.1.4.1.19376.1.5.3.1.4.1.4.4'.

6.1.4.9.4 <id root=' ' extension=' '/>

The reference is an act of itself, and must be uniquely identified. If there is no explicit identifier for this act in the source EMR system, a GUID may be used for the root

attribute, and the extension may be omitted. Although HL7 allows for multiple identifiers, this profile requires that one and only one be used.

6.1.4.9.5 <code nullFlavor='NA'/>

The reference act has no code associated with it.

6.1.4.9.6 <text><reference value='#study-1'/></text>

In order to connect this external reference to the narrative text which it refers, the value of the <reference> element in the <text> element is a URI to an element in the CDA narrative of this document.

6.1.4.9.7 <reference typeCode='SPRT|REFR'> <externalDocument classCode='DOC' moodCode='EVN'>

External references are listed as either supporting documentation (typeCode='SPRT') or simply reference material (typeCode='REFR') for the reader. If this distinction is not supported by the source EMR system, the value of typeCode should be REFR. For CDA, the reference is indicated by a <reference> element containing an <externalDocument> element which documents (classCode='DOC') the event (moodCode='EVN'). For HL7 Version 3 Messages, the reference is represented with the element <sourceOf> and the external document is representated with a <act> element, however semantics, and attributes remain otherwise without change.

6.1.4.9.8 <id extension=' ' root=' '/>

The identifier of the document is supplied in the <id> element.

6.1.4.9.9 <text><reference value=' '/></text>

A link to the original document may be provided here. This shall be a URL where the referenced document can be located. For CDA, the link should also be present in the narrative inside the CDA Narrative in a <linkHTML> element.

6.1.4.10 Internal References 1.3.6.1.4.1.19376.1.5.3.1.4.4.1

CDA and HL7 Version 3 Entries may reference (point to) information contained in other entries within the same document or message as shown below.

6.1.4.10.1 Specification

```
<entryRelationship typeCode='' inversionInd='true|false'>
    <act classCode='' moodCode=''>
      <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4.1'/>
      <id root='' extension=''/>
      <code code='' displayName='' codeSystem='' codeSystemName=''/>
    </act>
</entryRelationship>
```

6.1.4.10.2 <entryRelationship typeCode=' ' inversionInd='true|false'>

For CDA the act being referenced appears inside a related entryRelationship. The type (typeCode) and direction (inversionInd) attributes will be specified in the entry content module that contains the reference. For HL7 Version 3 Messages, the relationship is indicated with a <sourceOf> element, however typeCodes and semantics remain unchanged.

6.1.4.10.3 <act classCode=' ' moodCode=' '>

The act being referred to can be any CDA Clinical Statement element type (act, procedure, observation, substanceAdministration, supply, et cetera). For compatibility with the Clinical Statement model the internal reference shall always use the <act> class, regardless of the XML element type of the act it refers to.

6.1.4.10.4 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4.1'/>

The <templateId> element identifies this as an internal reference that conforms to all rules specified in this section.

6.1.4.10.5 <id root=' ' extension=' '/>

This element shall be present. The root and extension attributes shall identify an element defined elsewhere in the same document.

6.1.4.10.6 <code code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '/>

This element shall be present. It shall be valued when the internal reference is to element that has a <code> element, and shall have the same attributes as the <code> element in the act it references. If the element it references does not have a <code> element, then the nullFlavor attribute should be set to "NA".

6.1.4.11 Concern Entry 1.3.6.1.4.1.19376.1.5.3.1.4.5.1

This event (moodCode='EVN') represents an act (<act classCode='ACT') of being concerned about a problem, allergy or other issue. The <effectiveTime> element describes the period of concern. The subject of concern is one or more observations about related problems (see 1.3.6.1.4.1.19376.1.5.3.1.4.5.2) or allergies and intolerances (see 1.3.6.1.4.1.19376.1.5.3.1.4.5.3). Additional references can be provided having additional information related to the concern. The concern entry allows related acts to be grouped.

This allows representing the history of a problem as a series of observation over time, for example.

6.1.4.11.1 Standards

CCD	ASTM/HL7 Continuity of Care Document
CareStruct	HL7 Care Provision Care Structures (DSTU)
ClinStat	ClinStat HL7 Clinical Statement (DRAFT)

6.1.4.11.2 Specification

```
<act classCode='ACT' moodCode='EVN'>
  <templateId root='2.16.840.1.113883.10.20.1.27'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.1'/>
  <id root='' extension=''/>
  <code nullFlavor='NA'/>
  <statusCode code='active|suspended|aborted|completed'/>
  <effectiveTime>
    <low value=''/>
    <high value=''/>
  </effectiveTime>
  <!-- one or more entry relationships identifying problems of concern -->
  <entryRelationship typeCode='SUBJ' inversionInd='false'>
     :
  </entryRelationship>
  <!-- For HL7 Version 3 Messages
  <sourceOf typeCode='SUBJ' inversionInd='false'>
     :
  </sourceOf>
  -->
  <!-- optional entry relationship providing more information about the concern -->
  <entryRelationship typeCode='REFR'>
     :
  </entryRelationship>
  <!-- For HL7 Version 3 Messages
  <sourceOf typeCode='REFR' inversionInd='false'>
     :
  </sourceOf>
  -->

</act>
```

6.1.4.11.3 <act classCode='ACT' moodCode='EVN'>

All concerns reflect the act of recording (<act classCode='ACT'>) the event (moodCode='EVN') of being concerned about a problem, allergy or other issue about the patient condition.

6.1.4.11.4 <templateId root='2.16.840.1.113883.10.20.1.27'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.1'/>

These template identifiers indicates this entry conforms to the concern content module. This content module inherits constraints from the HL7 CCD Template for problem acts, and so also includes that template identifier.

6.1.4.11.5<id root=' ' extension=' '/>

This required element identifies the concern.

6.1.4.11.6<code nullFlavor='NA'/>

The code is not applicable to a concern act, and so shall be recorded as shown above.

6.1.4.11.7<statusCode code='active|suspended|aborted|completed'/>

The statusCode associated with any concern must be one of the following values:

Value	Description
active	A concern that is still being tracked.
suspended	A concern that is active, but which may be set aside. For example, this value might be used to suspend concern about a patient problem after some period of remission, but before assumption that the concern has been resolved.
aborted	A concern that is no longer actively being tracked, but for reasons other than because the problem was resolved. This value might be used to mark a concern as being aborted after a patient leaves care against medical advice.
completed	The problem, allergy or medical state has been resolved and the concern no longer needs to be tracked except for historical purposes.

Note: A concern in the "active" state represents one for which some ongoing clinical activity is expected, and that no activity is expected in other states. Specific uses of the suspended and aborted states are left to the implementation.

6.1.4.11.8<effectiveTime><low value=' '/><high value=' '/></effectiveTime>

The <effectiveTime> element records the starting and ending times during which the concern was active. The <low> element shall be present. The <high> element shall be present for concerns in the completed or aborted state, and shall not be present otherwise.

6.1.4.11.9<!-- 1..* entry relationships identifying problems of concern --> <entryRelationship type='SUBJ' inversionInd='false'>

Each concern is about one or more related problems or allergies. This entry shall contain one or more problem or allergy entries that conform to the specification in section Problem Entry or Allergies and Intolerances. This is how a series of related observations can be grouped as a single concern.

For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <sourceOf> element. The typeCode SHALL be ‘SUBJ’ for both HL7 Version 3 and CDA. HL7 Version 3 additionally requires that inversionInd SHALL be ‘false’.

Note: The Allergy and Intolerances entry is a refinement of the Problem entry.

6.1.4.11.10 <!-- 0..n optional entry relationship providing more information about the concern --> <entryRelationship type='REFR' inversionInd='false'>

Each concern may have 0 or more related references. These may be used to represent related statements such related visits. This may be any valid CDA clinical statement, and SHOULD be an IHE entry template. For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <subjectOf> element. The typeCode SHALL be 'SUBJ' and inversionInd SHALL be 'false'

6.1.4.12 Problem Concern Entry 1.3.6.1.4.1.19376.1.5.3.1.4.5.2

This entry is a specialization of the Concern Entry, wherein the subject of the concern is focused on a problem. Elements shown in the example below in gray are explained in the Concern Entry.

6.1.4.12.1 Standards

CCD	ASTM/HL7 Continuity of Care Document
CareStruct	HL7 Care Provision Care Structures (DSTU)
ClinStat	HL7 Clinical Statement Pattern (Draft)

6.1.4.12.2 Parent Template

The parent of this template is Concern Entry. This template is compatible with the ASTM/HL7 Continuity of Care Document template: 2.16.840.1.113883.10.20.1.27

6.1.4.12.3 Specification

```
<act classCode='ACT' moodCode='EVN'>
 <templateId root='2.16.840.1.113883.10.20.1.27'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.1'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.2'/>
 <id root=' ' extension=' '/>
 <code nullFlavor='NA'/>
 <statusCode code='active|suspended|aborted|completed'/>
 <effectiveTime>
   <low value=' '/>
   <high value=' '/>
 </effectiveTime>
 <!-- 1..* entry relationships identifying problems of concern -->
 <entryRelationship type='SUBJ'>
   <observation classCode='OBS' moodCode='EVN'/>
      <templateID root='1.3.6.1.4.1.19376.1.5.3.1.4.5'>
        :
   </observation>
 </entryRelationship>
 <!-- optional entry relationship providing more information about the concern -->
 <entryRelationship type='REFR'>
 </entryRelationship>
</act>
```

6.1.4.12.4<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.1'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.2'/>

This entry has a template identifier of 1.3.6.1.4.1.19376.1.5.3.1.4.5.2, and is a subtype of the Concern Entry, and so must also conform to that specification, with the template identifier of 1.3.6.1.4.1.19376.1.5.3.1.4.5.1. These elements are required and shall be recorded exactly as shown above.

6.1.4.12.5<!-- 1..* entry relationships identifying problems of concern -->

```
<observation classCode='OBS' moodCode='EVN'>
 <templateID root=' 1.3.6.1.4.1.19376.1.5.3.1.4.5'/>
  …
</observation>
<entryRelationship type='SUBJ'>
```

This entry shall contain one or more problem entries that conform to the Problem Entry template 1.3.6.1.4.1.19376.1.5.3.1.4.5. For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <subjectOf> element. The typeCode SHALL be ‘SUBJ’ and inversionInd SHALL be ‘false’

6.1.4.13 Allergy and Intolerance Concern 1.3.6.1.4.1.19376.1.5.3.1.4.5.3

This entry is a specialization of the Concern Entry, wherein the subject of the concern is focused on an allergy or intolerance. Elements shown in the example below in gray are explained in that entry.

6.1.4.13.1 Standards

CCD	ASTM/HL7 Continuity of Care Document
CareStruct	HL7 Care Provision Care Structures (DSTU)
ClinStat	HL7 Clinical Statement Pattern (Draft)

6.1.4.13.2 Parent Template

The parent of this template is Concern Entry. This template is compatible with the ASTM/HL7 Continuity of Care Document template: 2.16.840.1.113883.10.20.1.27

6.1.4.13.3 Specification

```
<act classCode='ACT' moodCode='EVN'>
 <templateId root='2.16.840.1.113883.10.20.1.27'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.1'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.3'/>
 <id root=' ' extension=' '/>
 <code nullFlavor='NA'/>
 <statusCode code='active|suspended|aborted|completed'/>
 <effectiveTime>
   <low value=' '/>
   <high value=' '/>
 </effectiveTime>
 <!-- 1..* entry relationships identifying allergies of concern -->
 <entryRelationship typeCode='SUBJ'>
   <observation classCode='OBS' moodCode='EVN'/>
      <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.6'/>
        :
   </observation>
 </entryRelationship>
 <!-- optional entry relationship providing more information about the concern -->
 <entryRelationship type='REFR'>
 </entryRelationship>
</act>
```

6.1.4.13.4 <templateId root='2.16.840.1.113883.10.20.1.27'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.1'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.3'/>

This entry has a template identifier of 1.3.6.1.4.1.19376.1.5.3.1.4.5.3, and is a subtype of the Concern entry, and so must also conform to the rules of the Concern Entry. These elements are required and shall be recorded exactly as shown above.

```
6.1.4.13.5<!-- 1..* entry relationships identifying allergies of concern -->
6245          <observation classCode='OBS' moodCode='EVN'/>
               <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.6'/>
                :
              </observation>
              <entryRelationship typeCode='SUBJ'>
```

6250 This entry shall contain one or more allergy or intolerance entries that conform to the Allergy and Intolerance Entry. For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <sourceOf> element. The typeCode SHALL be 'SUBJ' and inversionInd SHALL be 'false'

6.1.4.14 Problem Entry 1.3.6.1.4.1.19376.1.5.3.1.4.5

This section makes use of the linking, severity, clinical status and comment content specifications defined elsewhere in the technical framework. In HL7 RIM parlance, observations about a problem, complaint, symptom, finding, diagnosis, or functional limitation of a patient is the event (moodCode='EVN') of observing (<observation
6260 classCode='OBS'>) that problem. The <value> of the observation comes from a controlled vocabulary representing such things. The <code> contained within the <observation> describes the method of determination from yet another controlled vocabulary. An example appears below in the figure below.

6.1.4.14.1 Standards

CCD	ASTM/HL7 Continuity of Care Document
CareStruct	HL7 Care Provision Care Structures (DSTU)
ClinStat	HL7 Clinical Statement Pattern (Draft)

6.1.4.14.2 Parent Template

This template is compatible with the ASTM/HL7 Continuity of Care Document template: 2.16.840.1.113883.10.20.1.28

6.1.4.14.3 Specification

6270

```
<observation classCode='OBS' moodCode='EVN' negationInd=' false|true '>
 <templateId root='2.16.840.1.113883.10.20.1.28'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5'/>
 <id root=' ' extension=' '/>
 <code code=' ' displayName=' '
   codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'/>
 <text><reference value=' '/></text>
 <statusCode code='completed'/>
 <effectiveTime><low value=' '/><high value=' '/></effectiveTime>
 <value xsi:type='CD' code=' '
   codeSystem=' ' displayName=' ' codeSystemName=' '>
   <originalText><reference value=' '/></originalText>
 </value>
 <
 <!-- zero or one <entryRelationship typeCode='REFR' inversionInd='false'> elements
      identifying the health status of concern -->
 <!-- zero or one <entryRelationship typeCode='REFR' inversionInd='false'> elements
      containing clinical status -->
 <!-- zero to many <entryRelationship typeCode='REFR' inversionInd='true'> elements
      containing comments -->
</observation>
```

6.1.4.14.4<observation classCode='OBS' moodCode='EVN' negationInd='false|true'>

The basic pattern for reporting a problem uses the CDA <observation> element, setting the classCode='OBS' to represent that this is an observation of a problem, and the moodCode='EVN', to represent that this is an observation that has in fact taken place. The negationInd attribute, if true, specifies that the problem indicated was observed to not have occurred (which is subtly but importantly different from having not been observed). The value of negationInd should not normally be set to true. Instead, to record that there is "no prior history of chicken pox", one would use a coded value indicated exactly that. However, it is not always possible to record problems in this manner, especially if using a controlled vocabulary that does not supply pre-coordinated negations , or which do not allow the negation to be recorded with post-coordinated coded terminology.

6.1.4.14.5<templateId root='2.16.840.1.113883.10.20.1.28'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5'/>

These <templateId> elements identify this <observation> as a problem, under both IHE and CCD specifications. This SHALL be included as shown above.

6.1.4.14.6<id root=' ' extension=' '/>

The specific observation being recorded must have an identifier (<id>) that shall be provided for tracking purposes. If the source EMR does not or cannot supply an intrinsic identifier, then a GUID shall be provided as the root, with no extension (e.g., <id root='CE1215CD-69EC-4C7B-805F-569233C5E159'/>). While CDA allows for more than one identifier element to be provided, this profile requires that only one be used.

6.1.4.14.7<code code=' ' displayName=' ' codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'>

The <code> describes the process of establishing a problem. The code element should be used, as the process of determining the value is important to clinicians (e.g., a diagnosis is a more advanced statement than a symptom). The recommended vocabulary for describing problems is shown in the table below. Subclasses of this content module may specify other vocabularies. When the list below is used, the codeSystem is '2.16.840.1.113883.6.96' and codeSystemName is SNOMED CT.

Code	Description
64572001	Condition
418799008	Symptom
404684003	Finding
409586006	Complaint
248536006	Functional limitation
55607006	Problem
282291009	Diagnosis

6.1.4.14.8<text><reference value=' '/></text>

The <text> element is required and points to the text describing the problem being recorded; including any dates, comments, et cetera. The <reference> contains a URI in value attribute. This URI points to the free text description of the problem in the document that is being described.

6.1.4.14.9<statusCode code='completed'/>

A clinical document normally records only those condition observation events that have been completed, not observations that are in any other state. Therefore, the <statusCode> shall always have code='completed'.

6.1.4.14.10 <effectiveTime><low value=' '/><high value=' '/></effectiveTime>

The <effectiveTime> of this <observation> is the time interval over which the <observation> is known to be true. The <low> and <high> values should be no more precise than known, but as precise as possible. While CDA allows for multiple mechanisms to record this time interval (e.g. by low and high values, low and width, high and width, or center point and width), we are constraining Medical summaries to use only the low/high form. The <low> value is the earliest point for which the condition is known to have existed. The <high> value, when present, indicates the time at which the observation was no longer known to be true. Thus, the implication is made that if the <high> value is specified, that the observation was no longer seen after this time, and it

thus represents the date of resolution of the problem. Similarly, the <low> value may seem to represent onset of the problem. Neither of these statements is necessarily precise, as the <low> and <high> values may represent only an approximation of the true onset and resolution (respectively) times. For example, it may be the case that onset occurred prior to the <low> value, but no observation may have been possible before that time to discern whether the condition existed prior to that time. The <low> value should normally be present. There are exceptions, such as for the case where the patient may be able to report that they had chicken pox, but are unsure when. In this case, the <effectiveTime> element shall have a <low> element with a nullFlavor attribute set to 'UNK'. The <high> value need not be present when the observation is about a state of the patient that is unlikely to change (e.g., the diagnosis of an incurable disease).

6.1.4.14.11 <value xsi:type='CD' code=' ' codeSystem=' ' codeSystemName=' ' displayName=' '>

The <value> is the condition that was found. This element is required. While the value may be a coded or an un-coded string, the type is always a coded value (xsi:type='CD'). If coded, the code and codeSystem attributes shall be present. The codeSystem should reference a controlled vocabulary describing problems, complaints, symptoms, findings, diagnoses, or functional limitations, e.g., ICD-9, SNOMED-CT or MEDCIN, or others. The table below is an incomplete listing of acceptable values for the codeSystem attribute, along with the codeSystemName.

CodeSystem	codeSystemName	Description
2.16.840.1.113883.6.96	SNOMED-CT	SNOMED Controlled Terminology
2.16.840.1.113883.6.103	ICD-9CM (diagnoses)	International Classification of Diseases, Clinical Modifiers, Version 9
2.16.840.1.113883.6.26	MEDCIN	A classification system from MEDICOMP Systems.

It is recommended that the codeSystemName associated with the codeSystem, and the displayName for the code also be provided for diagnostic and human readability purposes, but this is not required by this profile.

If uncoded, all attributes other than xsi:type='CD' must be absent.

In cases where information about a problem or allergy is unknown or where there are no problems or allergies, an entry shall use codes from the table below to record this fact:

Entry Type	Code	Display Name	Description
Problem	396782006	Past Medical History Unknown	To indicate unknown medical history
Problem	407559004	Family History Unknown	To indicate that the patient's family history is not known.
Problem	160243008	No Significant Medical History	To indicate no relevant medical history

Problem	160245001	No current problems or disability	To indicate that the patient has no current problems (as distinct from **no history**).
Allergy	409137002	No Known Drug Allergies	To indicate that there are no known **Drug** allergies for this patient.
Allergy	160244002	No Known Allergies	To indicate that there are no known allergies for this patient.
Allergy	64970000	Substance Type Unknown	To indicate the state where there is a known allergy or intollerance to an unknown substance

6.1.4.14.12 <originalText><reference value=' '/></originalText>

The <value> contains a <reference> to the <originalText> in order to link the coded value to the problem narrative text (minus any dates, comments, et cetera). The <reference> contains a URI in value attribute. This URI points to the free text description of the problem in the document that is being described.

6.1.4.14.13 <!-- zero or one <entryRelationship typeCode='SUBJ' inversionInd='true'> elements containing severity -->

An optional <entryRelationship> element may be present indicating the severity of the problem. When present, this <entryRelationship> element shall contain a severity observation conforming to the Severity entry template (1.3.6.1.4.1.19376.1.5.3.1.4.1).

For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <subjectOf> element. The typeCode SHALL be 'SUBJ' and inversionInd SHALL be 'true'.

6.1.4.14.14 <!-- zero or one <entryRelationship typeCode='REFR' inversionInd='false'> elements containing clinical status -->

An optional <entryRelationship> may be present indicating the clinical status of the problem, e.g., resolved, in remission, active. When present, this <entryRelationship> element shall contain a clinical status observation conforming to the Problem Status Observation template (1.3.6.1.4.1.19376.1.5.3.1.4.1.1).

For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <sourceOf> element. The typeCode SHALL be 'REFR' and inversionInd SHALL be 'false'.

6.1.4.14.15 <!-- zero or one <entryRelationship typeCode='REFR' inversionInd='false'> elements identifying the health status of concern -->

An optional <entryRelationship> may be present referencing the health status of the patient, e.g., resolved, in remission, active. When present, this <entryRelationship> element shall contain a clinical status observation conforming to the Health Status Observation template (1.3.6.1.4.1.19376.1.5.3.1.4.1.1). The typeCode SHALL be 'REFR' and inversionInd SHALL be 'false'.

For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <sourceOf> element.

6.1.4.14.16 <!-- zero to many <entryRelationship typeCode='SUBJ' inversionInd='true'> element containing comments -->

One or more optional <entryRelationship> elements may be present providing an additional comments (annotations) for the condition. When present, this <entryRelationship> element shall contain a comment observation conforming to the Comment entry template (1.3.6.1.4.1.19376.1.5.3.1.4.2). The typeCode SHALL be 'SUBJ' and inversionInd SHALL be 'true'.

For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <sourceOf> element.

6.1.4.15 Allergies and Intolerances 1.3.6.1.4.1.19376.1.5.3.1.4.6

Allergies and intolerances are special kinds of problems, and so are also recorded in the CDA <observation> element, with classCode='OBS'. They follow the same pattern as the problem entry, with exceptions noted below.

6.1.4.15.1 Standards

CCD	ASTM/HL7 Continuity of Care Document
CareStruct	HL7 Care Provision Care Structures (DSTU)
ClinStat	HL7 Clinical Statement Pattern (Draft)

6.1.4.15.2 Specification

```
<observation classCode='OBS' moodCode='EVN' negationInd='false'>
 <templateId root='2.16.840.1.113883.10.20.1.18'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.6'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5'/>
 <id root=' ' extension=' '/>
 <code
   code='ALG|OINT|DALG|EALG|FALG|DINT|EINT|FINT|DNAINT|ENAINT|FNAINT'
   codeSystem='2.16.840.1.113883.5.4'
   codeSystemName='ObservationIntoleranceType'/>
 <text><reference value=' '/></text>
 <statusCode code='completed'/>
 <effectiveTime>
   <low value=' '/>
   <high value=' '/>
 </effectiveTime>
 <value xsi:type='CD' code=' ' codeSystem=' ' displayName=' ' codeSystemName=' '/>
 <participant typeCode='CSM'>
   <participantRole classCode='MANU'>
     <playingEntity classCode='MMAT'>
       <code  code=' ' codeSystem=' '>
         <originalText><reference value='#substance'/></orginalText>
       </code>
       <name></name>
     </playingEntity>
   </participantRole>
 </participant>
 <!-- zero to many <entryRelationship> elements containing reactions -->
 <!-- zero or one <entryRelationship> elements containing severity -->
 <!-- zero or one <entryRelationship> elements containing clinical status -->
 <!-- zero to many <entryRelationship> elements containing comments -->
</observation>
```

6.1.4.15.3<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.6'/>

This entry has a template identifier of 1.3.6.1.4.1.19376.1.5.3.1.4.6, and is a subtype of the Problem Entry, and so must also conform to the rules of the problem entry, which has the template identifier of 1.3.6.1.4.1.19376.1.5.3.1.4.5.5. These elements are required and shall be recorded exactly as shown above.

6.1.4.15.4<code code='ALG|OINT|DINT|EINT|FINT|DALG|EALG|FALG|DNAINT|ENAINT|FNAINT' displayName=' ' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ObservationIntoleranceType'/>

The <code> element represents the kind of allergy observation made, to a drug, food or environmental agent, and whether it is an allergy, non-allergy intolerance, or unknown class of intolerance (not known to be allergy or intolerance). The <code> element of an allergy entry shall be provided, and a code and codeSystem attribute shall be present. The example above uses the HL7 ObservationIntoleranceType vocabulary domain, which does provide suitable observation codes. Other vocabularies may be used, such as SNOMED-CT or MEDCIN. The displayName and codeSystemName attributes should be present.

6.1.4.15.5<value xsi:type='CD' code=' ' codeSystem=' ' codeSystemName=' ' displayName=' '>

The <value> is a description of the allergy or adverse reaction. While the value may be a coded or an uncoded string, the type is always a coded value (xsi:type='CD'). If coded, the code and codeSystem attributes must be present. The codingSystem should reference a controlled vocabulary describing allergies and adverse reactions, see Table 5.4 12Table 5.4 12 above . If uncoded, all attributes other than xsi:type='CD' must be absent. The allergy or intolerance may not be known, in which case that fact shall be recorded appropriately. This might occur in the case where a patient experiences an allergic reaction to an unknown substance.

6.1.4.15.6<participant typeCode='CSM'> <participantRole classCode='MANU'> <playingEntity classCode='MMAT'>

The substance that causes the allergy or intolerance may be specified in the <participant> element.

6.1.4.15.7<code code=' ' codeSystem=' '> <originalText><reference value=' '/></originalText> </code>

The <code> element shall be present. It may contain a code and codeSystem attribute to indicate the code for the substance causing the allergy or intolerance. It shall contain a <reference> to the <originalText> in the narrative where the substance is named.

6.1.4.15.8<!-- zero to many <entryRelationship> elements containing reactions -->

An allergy entry can record the reactions that are manifestations of the allergy or intolerance as shown below.

```
<entryRelationship typeCode='MFST'>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.6.1'/>
  <!-- a problem entry  -->
  <observation classCode='OBS' moodCode='EVN'>
    <templateId root='2.16.840.1.113883.10.20.1.54'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5'/>
      □
  </observation>
</entryRelationship>
```

6.1.4.15.9<entryRelationship typeCode='MFST'>

This is a related entry (<entryRelationship>) that indicates the manifestations (typeCode='MFST') the reported allergy or intolerance. These are events that may occur, or have occurred in the past as a reaction to the allergy or intolerance.

6.1.4.15.10 <observation classCode='OBS' moodCode='EVN'> <templateId root='2.16.840.1.113883.10.20.1.54'/>


```
<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5'/>

</observation>
```

The entry contained with this entry relationship is some sort of problem that is a manifestation of the allergy. It is recorded using the Problem Entry structure, with the additional template identifier (2.16.840.1.113883.10.20.1.54) indicating that this problem is a reaction.

6.1.4.15.11 <!-- zero or one <entryRelationship typeCode='SUBJ' inversionInd='true'> elements containing severity -->

An optional <entryRelationship> element may be present indicating the severity of the problem. When present, this <entryRelationship> element shall contain a severity observation conforming to the Severity entry template (1.3.6.1.4.1.19376.1.5.3.1.4.1). For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <sourceOf> element. The typeCode SHALL be 'SUBJ' and inversionInd SHALL be 'true'.

6.1.4.15.12 <!-- zero or one <entryRelationship typeCode='REFR' inversionInd='false'> elements containing clinical status -->

An optional <entryRelationship> may be present indicating the clinical status of the allergy, e.g., resolved, in remission, active. When present, this <entryRelationship> element shall contain a clinical status observation conforming to the Problem Status Observation template (1.3.6.1.4.1.19376.1.5.3.1.4.1.1). The typeCode SHALL be 'REFR' and inversionInd SHALL be 'false'. For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <sourceOf> element.

6.1.4.15.13 <!-- zero to many <entryRelationship typeCode='SUBJ' inversionInd='true'> element containing comments -->

One or more optional <entryRelationship> elements may be present providing an additional comments (annotations) for the allergy. When present, this <entryRelationship> element shall contain an entry conforming to the Comment entry template (1.3.6.1.4.1.19376.1.5.3.1.4.2). The typeCode SHALL be 'SUBJ' and inversionInd SHALL be 'true'.

For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <sourceOf> element.

6.1.4.16 Medications 1.3.6.1.4.1.19376.1.5.3.1.4.7

This content module describes the general structure for a medication. All medication administration acts will be derived from this content module.

6.1.4.16.1 Standards

Pharmacy	HL7 Pharmacy Domain (Normative)
CCD	ASTM/HL7 Continuity of Care Document

6.1.4.16.2 Specification

```
<substanceAdministration classCode='SBADM' moodCode='INT|EVN'>
  <templateId root='2.16.840.1.113883.10.20.1.24'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7'/>
  <templateId root=''/>
  <id root='' extension=''/>
  <code code='' codeSystem='' displayName='' codeSystemName=''/>
  <text><reference value='#med-1'/></text>
  <statusCode code='completed'/>
  <effectiveTime xsi:type='IVL_TS'>
      <low value=''/>
      <high value=''/>
  </effectiveTime>
  <effectiveTime operator='A' xsi:type='TS|PIVL_TS|EIVL_TS|PIVL_PPD_TS|SXPR_TS'>
    :
  </effectiveTime>
  <routeCode code='' codeSystem='' displayName='' codeSystemName=''/>
  <doseQuantity value='' unit=''/>
  <approachSiteCode code='' codeSystem='' displayName='' codeSystemName=''/>
  <rateQuantity value='' unit=''/>
  <consumable>
    :
    .
  </consumable>
  <!-- 0..* entries describing the components -->
  <entryRelationship typeCode='COMP' >
      <sequenceNumber value=''/>
  </entryRelationship>
  <!-- An optional entry relationship that indicates the the reason for use -->
  <entryRelationship typeCode='RSON'>
    <act classCode='ACT' moodCode='EVN'>
      <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4.1'/>
      <id root='' extension=''/>
    </act>
  </entryRelationship>
  <!-- An optional entry relationship that provides prescription activity -->
  <entryRelationship typeCode='REFR'>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.3'/>
      :
      .
  </entryRelationship>
  <precondition>
    <criterion>
      <text><reference value=''></text>
    </criterion>
  </precondition>
</substanceAdministation>
```

This section makes use of the linking, severity and instruction entries.

Medications are perhaps the most difficult data elements to model due to variations in the ways that medications are prescribed.

This profile identifies the following relevant fields of a medication as being important to be able to generate in a medical summary. The table below identifies and describes these

fields, and indicates the constraints on whether or not they are required to be sent. The fields are listed in the order that they appear in the CDA XML content.

6.1.4.16.2.1 Medication Fields

Field	Opt	CDA Tag	Description
Start and Stop Date	R2	<effectiveTime>	The date (and time if available) when the medication regimen began and is expected to finish. The first component of the <effectiveTime> encodes the lower and upper bounds over which the <substanceAdministration> occurs, and the start time is determined from the lower bound. If the medication has been known to be stopped, the high value must be present, but expressed as a flavor of null (e.g., Unknown).
Frequency	R2	<effectiveTime>	The frequency indicates how often the medication is to be administered. It is often expressed as the number of times per day, but which may also include information such as 1 hour before/after meals, or in the morning, or evening.The second <effectiveTime> element encodes the frequency. In cases where split or tapered doses are used, these may be found in subordinate <substanceAdministration> elements.
Route	R2	<routeCode>	The route is a coded value, and indicates how the medication is received by the patient (by mouth, intravenously, topically, et cetera).
Dose	R2	<doseQuantity>	The amount of the medication given. This should be in some known and measurable unit, such as grams, milligrams, et cetera. It may be measured in "administration" units (such as tablets or each), for medications where the strength is relevant. In this case, only the unit count is specified , no units are specified. It may be a range.
Site	O	<approachSiteCode>	The site where the medication is administered, usually used with IV or topical drugs.
Rate	R2	<rateQuantity>	The rate is a measurement of how fast the dose is given to the patient over time (e.g., .5 liter / 1 hr), and is often used with IV drugs.
Product	R[1]	<consumable> <name> </consumable>	The name of the substance or product. This should be sufficient for a provider to identify the kind of medication. It may be a trade name or a generic name. This information is required in all medication entries. If the name of the medication is unknown, the type, purpose or other description may be supplied. The name should not include packaging, strength or dosing information. Note: Due to restrictions of the CDA schema, there is no way to explicitly link the name to the narrative text.
Strength	R2	<consumable> <code> <originalText/> </code> </consumable>	The name and strength of the medication. This information is only relevant for some medications, as the dose of the medication is often sufficient to indicate how much medication the patient receives. For example, the medication Percocet comes in a variety of strengths, which indicate specific amounts of two different medications being received in single tablet. Another example is eye-drops, where the medication is in a solution of a particular strength, and the dose quantity is some number of drops. The originalText referenced by the <code> element in the consumable should refer to the name and strength of the medication in the narrative text.Note: Due to restrictions of the CDA schema, there is no way to separately record the strength.

Code	R2	<consumable> <code/> </consumable>	A code describing the product from a controlled vocabulary, such as RxNorm, First DataBank, et cetera.
Instructions	R2	<entryRelationship>	A place to put free text comments to support additional relevant information, or to deal with specialized dosing instructions. For example, "take with food", or tapered dosing.
Indication	O	<entryRelationship>	A link to supporting clinical information about the reason for providing the medication (e.g., a link to the relevant diagnosis).

[1] A consumable is not neccessary when the substanceAdministration code indicates none or unknown medications.

6.1.4.16.3<substanceAdministration classCode='SBADM' moodCode='INT|EVN'>

The general model is to record each prescribed medication in a <substanceAdministration> intent (moodCode='INT'). Medications that have been reported by the patient or administered (instead of prescribed), are recorded in the same element, except that this is now an event (moodCode='EVN'). The <substanceAdministration> element may contain subordinate <substanceAdministration> elements in a related component entry to deal with special cases (see the section below on Special Cases). These cases include split, tapered, or conditional dosing, or combination medications. The use of subordinate <substanceAdministration> elements to deal with these cases is optional. The comment field should always be used in these cases to provide the same information as free text in the top level <substanceAdministration> element. There are a variety of special cases for dosing that need to be accounted for. These are described below. Most of these special cases involve changing the dosage or frequency over time, or based on some measurement. When the dosage changes, then additional entries are required for each differing dosage. The last case deals with combination medications.

6.1.4.16.3.1 Normal Dosing 1.3.6.1.4.1.19376.1.5.3.1.4.7.1

This template identifier is used to identify medication administration events that do not require any special processing. The parent template is 1.3.6.1.4.1.19376.1.5.3.1.4.7. Medications that use this template identifier shall not use subordinate <substanceAdministation> acts.

6.1.4.16.3.2 Tapered Doses 1.3.6.1.4.1.19376.1.5.3.1.4.8

This template identifier is used to identify medication administration events that require special processing to handle tapered dosing. The parent template is 1.3.6.1.4.1.19376.1.5.3.1.4.7. A tapered dose is often used for certain medications where abrupt termination of the medication can have negative consequences. Tapered dosages may be done by adjusting the dose frequency, the dose amount, or both.

When merely the dose frequency is adjusted, (e.g., Prednisone 5mg b.i.d. for three days, then 5mg. daily for three days, and then 5mg every other day), then only one medication

entry is needed, multiple frequency specifications recorded in <effectiveTime> elements. When the dose varies (eg. Prednisone 15mg daily for three days, then 10 mg daily for three days, the 5 mg daily for three days), subordinate medication entries should be created for each distinct dosage.

6.1.4.16.3.3 Split Dosing 1.3.6.1.4.1.19376.1.5.3.1.4.9

This template identifier is used to identify medication administration events that require special processing to handle split dosing. The parent template is 1.3.6.1.4.1.19376.1.5.3.1.4.7. A split dose is often used when different dosages are given at different times (e.g., at different times of day, or on different days). This may be to account for different metabolism rates at different times of day, or to simply address drug packaging deficiencies (e.g., and order for Coumadin 2mg on even days, 2.5mg on odd days is used because Coumadin does not come in a 2.25mg dose form).

In this case a subordinate <substanceAdministration> entry is required for each separate dosage.

6.1.4.16.3.4 Conditional Dosing 1.3.6.1.4.1.19376.1.5.3.1.4.10

This template identifier is used to identify medication administration events that require special processing to handle conditional dosing. The parent template is 1.3.6.1.4.1.19376.1.5.3.1.4.7. A conditional dose is often used when the dose amount differs based on some measurement (e.g., an insulin sliding scale dose based on blood sugar level). In this case a subordinate <substanceAdministration> entry is required for each different dose, and the condition should be recorded.

6.1.4.16.3.5 Combination Medications 1.3.6.1.4.1.19376.1.5.3.1.4.11

This template identifier is used to identify medication administration events that require special processing to handle combination medications. The parent template is 1.3.6.1.4.1.19376.1.5.3.1.4.7. A combination medication is made up of two or more other medications. These may be prepackaged, such as Percocet, which is a combination of Acetaminophen and oxycodone in predefined ratios, or prepared by a pharmacist, such as a GI cocktail.

In the case of the prepackaged combination, it is sufficient to supply the name of the combination drug product, and its strength designation in a single <substanceAdministation> entry. The dosing information should then be recorded as simply a count of administration units.

In the latter case of a prepared mixture, the description of the mixture should be provided as the product name (e.g., "GI Cocktail") , in the <substanceAdministration> entry. That entry may, but is not required, to have subordinate <substanceAdministration> entries included beneath it to record the components of the mixture.

6.1.4.16.4<templateId root='2.16.840.1.113883.10.20.1.24'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7' />

All medications entries use the <templateId> elements specified above to indicate that they are medication acts. This element is required. In addition, a medication entry shall further identify itself using one of the template identifiers detailed in the next section.

6.1.4.16.5<templateId root=' ' />

The <templateId> element identifies this <entry> as a particular type of medication event, allowing for validation of the content. As a side effect, readers of the CDA can quickly locate and identify medication events. The templateId must use one of the values in the table below for the root attribute.

root	Description
1.3.6.1.4.1.19376.1.5.3.1.4.7.1	A "normal" <substanceAdministration> act that may not contain any subordinate <substanceAdministration> acts.
1.3.6.1.4.1.19376.1.5.3.1.4.8	A <substanceAdministration> act that records tapered dose information in subordinate <substanceAdministration> act.
1.3.6.1.4.1.19376.1.5.3.1.4.9	A <substanceAdministration> act that records split dose information in subordinate <substanceAdministration> acts.
1.3.6.1.4.1.19376.1.5.3.1.4.10	A <substanceAdministration> act that records conditional dose information in subordinate <substanceAdministration> acts.
1.3.6.1.4.1.19376.1.5.3.1.4.11	A <substanceAdministration> act that records combination medication component information in subordinate <substanceAdministration> acts.

6.1.4.16.6<id root=' ' extension=' '/>

A top level <substanceAdministration> element must be uniquely identified. If there is no explicit identifier for this observation in the source EMR system, a GUID may be used for the root attribute, and the extension may be omitted. Although HL7 allows for multiple identifiers, this profile requires that one and only one be used. Subordinate <substanceAdministration> elements may, but need not be uniquely identified.

6.1.4.16.7<code code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '>

The <code> element is used to supply a code that describes the <substanceAdminstration> act, not the medication being administered or prescribed. This may be a procedure code, such as those found in CPT-4 (and often used for billing), or may describe the method of medication administration, such as by intravenous injection. The type of medication is coded in the consumable, do not supply the code for the medication in this element. This element is optional.

One of the following values from SNOMED CT shall be used in the <code> element to record that a patient is either not on medications, or that medications are not known.

Entry Type	Code	Display Name	Description
Medication	182904002	Drug Treatment Unknown	To indicate lack of knowledge about drug therapy
Medication	182849000	No Drug Therapy Prescribed	To indicate the absense of any prescribed medications
Medication	408350003	Patient Not On Self-Medications	To indicate no treatment

6.1.4.16.8<text><reference value=' '/></text>

The URI given in the value attribute of the <reference> element points to an element in the narrative content that contains the complete text describing the medication. In a CDA document, the URI given in the value attribute of the <reference> element points to an element in the narrative content that contains the complete text describing the medication. In an HL7 message, the content of the text element shall contain the complete text describing the medication.

6.1.4.16.9<statusCode code='completed'/>

The status of all <substanceAdministration> elements must be "completed". The act has either occurred, or the request or order has been placed.

6.1.4.16.10 <effectiveTime xsi:type='IVL_TS'>

The first <effectiveTime> element encodes the start and stop time of the medication regimen. This an interval of time (xsi:type='IVL_TS'), and must be specified as shown. This is an additional constraint placed upon CDA Release 2.0 by this profile, and simplifies the exchange of start/stop and frequency information between EMR systems.

6.1.4.16.11 <low value=' '/><high value=' '/>

The <low> and <high> values of the first <effectiveTime> element represent the start and stop times for the medication. The <low> value represents the start time, and the <high> value represents the stop time. If either the <low> or the <high> value is unknown, this shall be recorded by setting the nullFlavor attribute to UNK. The <high> value records the end of the medication regime according to the information provided in the prescription or order. For example, if the prescription is for enough medication to last 30 days, then the high value should contain a date that is 30 days later then the <low> value. The rationale is that a provider, seeing an un-refilled prescription would normally assume that the medication is no longer being taken, even if the intent of the treatment plan is to continue the medication indefinitely.

6.1.4.16.12 <effectiveTime operator='A' xsi:type='TS|PIVL_TS|EIVL_TS|PIVL_PPD_TS|SXPR_TS' />

The second <effectiveTime> element records the frequency of administration. This <effectiveTime> element must be intersected with the previous time specification (operator='A'), producing the bounded set containing only those time specifications that fall within the start and stop time of the medication regimen. Several common frequency expressions appear in the table below, along with their XML representations.

6.1.4.16.12.1 Specifying Medication Frequency

Freq	Description	XML Representation
b.i.d.	Twice a day	<effectiveTime xsi:type='PIVL_TS' institutionSpecified='true' operator='A'> <period value='12' unit='h' /></effectiveTime>
q12h	Every 12 hours	<effectiveTime xsi:type='PIVL_TS' institutionSpecified='false' operator='A'> <period value='12' unit='h' /></effectiveTime>
Once	Once, on 2005-09-01 at 1:18am.	<effectiveTime xsi:type='TS' value='200509010118'/>
t.i.d.	Three times a day, at times determined by the person administering the medication .	<effectiveTime xsi:type='PIVL_TS' institutionSpecified='true' operator='A'> <period value='8' unit='h' /></effectiveTime>
q8h	Every 8 hours	<effectiveTime xsi:type='PIVL_TS' institutionSpecified='false' operator='A'> <period value='8' unit='h' /></effectiveTime>
qam	In the morning	<effectiveTime xsi:type='EIVL' operator='A'> <event code='ACM'/></effectiveTime>
	Every day at 8 in the morning for 10 minutes	<effectiveTime xsi:type='PIVL_TS' operator='A'> <phase> <low value="198701010800" inclusive="true"/> <width value="10" unit="min"/> </phase> <period value='1' unit='d'/></effectiveTime>
q4-6h	Every 4 to 6 hours.	<effectiveTime xsi:type='PIVL_PPD_TS' institutionSpecified='false' operator='A'> <period value='5' unit='h' /> <standardDeviation value='1' unit='h'></effectiveTime>

The last frequency specification is about as bad as it gets, but can still be represented accurately within the HL7 V3 datatypes. The mean (average) of the low and high values is specified for the period. The mean of 4 and 6 is 5. The standard deviation is recorded as one half the difference between the high and low values, with an unspecified distribution. The type attribute of the <effectiveTime> element describes the kind of frequency specification it contains. More detail is given for each type in the table below.

6.1.4.16.12.2 Data types used in Frequency Specifications

xsi:type	Description
TS	An xsi:type of TS represents a single point in time, and is the simplest of all to represent. The value attribute of the <effectiveTime> element specifies the point in time in HL7 date-time format (CCYYMMDDHHMMSS)
PIVL_TS	An xsi:type of PIVL_TS is the most commonly used, representing a periodic interval of time. The <low> element of <phase> may be present. If so it specifies the starting point, and only the lower

	order components of this value are relevant with respect to the <period>. The <width> element represents the duration of the dose administration (e.g., for IV administration). The <period> indicates how often the dose is given. Legal values for the unit attribute of <period> are s, min, h, d, wk and mo representing seconds, minutes, hours, days, weeks, and months respectively.
EIVL_TS	An xsi:type of EIVL_TS represents an event based time interval, where the event is not a precise time, but is often used for timing purposes (e.g. with meals, between meals, before breakfast, before sleep). Refer to the HL7 TimingEvent vocabulary for the codes to use for the <event> element. This interval may specify an <offset> which provides information about the time offset from the specified event (e.g., <offset><low value='-1' unit='h'/><width value='10' unit='min'/></offset> means 1 hour before the event. In that same example, the <width> element indicates the duration for the dose to be given.
PIVL_PPD_TS	An xsi:type of PIVL_PPD_TS represents an probabilistic time interval and is used to represent dosing frequencies like q4-6h. This profile requires that the distributionType of this interval be left unspecified. The <period> element specifies the average of the time interval, and the value of the <standardDeviation> shall be computed as half the width of the interval. The unit attributes of the <period> and <standardDeviation> elements shall be the same.
SXPR_TS	An xsi:type of SXPR_TS represents a parenthetical set of time expressions. This type is used when the frequency varies over time (e.g., for some cases of tapered dosing, or to handle split dosing). The <comp> elements of this <effectiveTime> element are themselves time expressions (using any of the types listed above). Each <comp> element may specify an operator (e.g. to intersect or form the union of two sets).

6.1.4.16.13 <routeCode code=' ' displayName=' ' codeSystem='2.16.840.1.113883.5.112' codeSystemName='RouteOfAdministration'>

The <routeCode> element specifies the route of administration using the HL7 RouteOfAdministration vocabulary. A code must be specified if the route is known, and the displayName attribute should be specified. If the route is unknown, this element shall not be sent.

6.1.4.16.14 <approachSiteCode code=' ' codeSystem=' '> originalText><reference value=' '/></originalText> </approachSiteCode>

The <approachSiteCode> element describes the site of medication administrion. It may be coded to a controlled vocabulary that lists such sites (e.g., SNOMED-CT). In CDA documents, this element contains a URI in the value attribute of the <reference> that points to the text in the narrative identifying the site. In a message, the <originalText> element shall contain the text identifying the site.

6.1.4.16.15 <doseQuantity> <low value=' ' unit=' '/><high value=' ' unit=' '/> </doseQuantity>

The dose is specified if the <doseQuantity> element. If a dose range is given (e.g., 1-2 tablets, or 325-750mg), then the <low> and <high> bounds are specified in their respective elements, otherwise both <low> and <high> have the same value. If the dose is in countable units (tablets, caplets, "eaches"), then the unit attribute is not sent. Otherwise

the units are sent. The unit attribute should be derived from the HL7 UnitsOfMeasureCaseSensitive vocabulary .

6.1.4.16.16 <low|high value=' '> <translation> <originalText><reference value=' '/></originalText> </translation></low|high >

Any <low> and <high> elements used for <doseQuantity> or <rateQuantity> should contain a <translation> element that provides a <reference> to the <originalText> found in the narrative body of the document. In a CDA document, any <low> and <high> elements used for <doseQuantity> or <rateQuantity> should contain a <translation> element that provides a <reference> to the <originalText> found in the narrative body of the document. In a message, the <originalText> may contain the original text used to describe dose quantity.

6.1.4.16.17 <rateQuantity><low value=' ' unit=' '/><high value=' ' unit=' '/></rateQuantity>

The rate is specified in the <rateQuantity> element. The rate is given in units that have measure over time. In this case, the units should be specified as a string made up of a unit of measure (see doseQuantity above), followed by a slash (/), followed by a time unit (s, min, h or d).

Again, if a range is given, then the <low> and <high> elements contain the lower and upper bound of the range, otherwise, they contain the same value.

6.1.4.16.18 <consumable>

The <consumable> element shall be present, and shall contain a <manufacturedProduct> entry conforming to the Product Entry template

6.1.4.16.19 <entryRelationship typeCode='REFR'> &nsbp;<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.3'/>

The top level <substanceAdministration> element may contain a reference (typeCode='REFR') to related prescription activity as described in the Supply Entry.

6.1.4.16.20 <entryRelationship typeCode='COMP'> <sequenceNumber value=' '>

A top level <substanceAdministration> element may contain one or more related components, either to handle split, tapered or conditional dosing, or to support combination medications.

In the first three cases, the subordinate components shall specify only the changed <frequency> and/or <doseAmount> elements. For conditional dosing, each subordinate component shall have a <precondition> element that specifies the <observation> that must be obtained before administration of the dose. The value of the <sequenceNumber>

shall be an ordinal number, starting at 1 for the first component, and increasing by 1 for each subsequent component. Components shall be sent in <sequenceNumber> order.

6.1.4.16.21 <entryRelationship typeCode='SUBJ' inversionInd='true'/>

At most one instruction may be provided for each <substanceAdministration> entry. If provided, it shall conform to the requirements listed for Patient Medication Instructions. The instructions shall contain any special case dosing instructions (e.g., split, tapered, or conditional dosing), and may contain other information (take with food, et cetera).

6.1.4.16.22 <entryRelationship typeCode='RSON'>

```
<act classCode='ACT' moodCode='EVN'>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4.1'/>
 <id root=' ' extension=' '/>
</act>
</entryRelationship>
```

A <substanceAdministration> event may indicate one or more reasons for the use of the medication. These reasons identify the concern that was the reason for use via the Internal Reference entry content module.

The extension and root of each observation present must match the identifier of a concern entry contained elsewhere within the CDA document.

A consumer of the Medical Summary is encouraged, but not required to maintain these links on import.

6.1.4.16.23 <precondition><criterion>

```
<text><reference value=' '></text>
</criterion></precondition>
```

In a CDA document, the preconditions for use of the medication are recorded in the <precondition> element. The value attribute of the <reference> element is a URL that points to the CDA narrative describing those preconditions.

6.1.4.16.24 <condition typeCode='PRCN'>

```
<criterion>
 <text></text>
 <value nullFlavor='UNK'/>
 <interpretationCode nullFlavor='UNK'/>
</criterion>
</condition>
```

In a message, the preconditions for use of the medication are recorded in the <condition> element. The typeCode shall be PRCN. The <text> element of the criterion shall contain a text description of the precondition. The <value> element is required, and may be

recorded in a structured data type if known, and if not, may be recorded using a nullFlavor as shown above. The same is true for <interpretationCode>.

6.1.4.17 Immunizations 1.3.6.1.4.1.19376.1.5.3.1.4.12

An immunizations entry is used to record the patient's immunization history.

6.1.4.17.1 Specification

```
<substanceAdministration typeCode='SBADM' moodCode='EVN' negationInd='true{{!}}false'>
  <templateId root='2.16.840.1.113883.10.20.1.24'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.12'/>

  <id root='' extension=''/>
  <code code='IMMUNIZ' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActCode'/>
  <text><reference value='#xxx'/></text>
  <statusCode code='completed'/>
  <effectiveTime value=''/>
  <!-- The reasonCode would normally provide a reason why the immunization was
    not performed.  It isn't supported by CDA R2, and so comments will have to suffice.
    <reasonCode code='' codeSystem='' codeSystemName='ActNoImmunizationReasonIndicator'/>
  -->
  <routeCode code='' codeSystem='' codeSystemName='RouteOfAdministration'/>
  <approachSiteCode code='' codeSystem=''
codeSystemName='HumanSubstanceAdministrationSite'/>
  <doseQuantity value='' units=''/>
  <consumable typeCode='CSM'>
    <manufacturedProduct classCode='MANU'>
      <manufacturedLabeledDrug classCode='MMAT' determinerCode='KIND'>
        <code code='' codeSystem='' codeSystemName=''>
          <originalText><reference value='#yyy'/></originalText>
        </code>
      </manufacturedLabeledDrug>
    </manufacturedProduct>
  </consumable>
  <!-- An optional entry relationship that provides prescription activity -->
  <entryRelationship typeCode='REFR'>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.3'/>
      :
      .
  </entryRelationship>
  <!-- An optional entry relationship that identifies the immunization series number -->
  <entryRelationship typeCode='SUBJ'>
    <observation classCode='OBS' moodCode='EVN'>
      <templateId root='2.16.840.1.113883.10.20.1.46'/>
      <code code='30973-2' displayName='Dose Number'
        codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
      <statusCode code='completed'/>
      <value xsi:type='INT' value=''/>
    </observation>
  </entryRelationship>

  <entryRelationship inversionInd='false' typeCode='CAUS'>
    <observation classCode='OBS' moodCode='EVN'>
      <templateId root='2.16.840.1.113883.10.20.1.28'/>
      <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5'/>
      <templateId root='2.16.840.1.113883.10.20.1.54'/>
      <id root='' extension=''/>
    </observation>
  </entryRelationship>
  <!-- Optional <entryRelationship> element containing comments -->
</substanceAdministration>
```


6.1.4.17.2<substanceAdministration typeCode='SBADM' moodCode='EVN' negationInd='true|false'>

An immunization is a substance administration event. An immunization entry may be a record of why a specific immunization was not performed. In this case, negationInd shall be set to "true", otherwise, it shall be false.

6.1.4.17.3<templateId root='2.16.840.1.113883.10.20.1.24'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.12'/>

The <templateId> elements identifies this <substanceAdministration> as an immunization. Both elements shall be present as shown above.

6.1.4.17.4<id root=' ' extension=' '/>

This shall be the identifier for the immunization event.

6.1.4.17.5<code code='IMMUNIZ' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActCode'/>

This required element records that the act was an immunization. The substance administration act must have a <code> element with code and codeSystem attributes present. If no coding system is used by the source, then simply record the code exactly as shown above. Another coding system that may be used for codes for immunizations are the CPT-4 codes for immunization procedures. This <code> element shall not be used to record the type of vaccine used from a vocabulary of drug names.

codeSystem	codeSystemName	Description
2.16.840.1.113883.5.4	IMMUNIZ	The IMMUNIZ term from the HL7 ActCode vocabulary.
2.16.840.1.113883.6.12	C4	Current Procedure Terminology 4 (CPT-4) codes.

6.1.4.17.6<text><reference value='#xxx'/></text>

In a CDA document, the URI given in the value attribute of the <reference> element points to an element in the narrative content that contains the complete text describing the immunization activity. In an HL7 message, the content of the text element shall contain the complete text describing the immunization activity.

6.1.4.17.7<statusCode code='completed'/>

The statusCode shall be set to "completed" for all immunizations.

6.1.4.17.8<effectiveTime value=' '/>

The effectiveTime element shall be present and should contain a time value that indicates the date of the substance administration. If the date is unkown, this shall be recorded using the nullFlavor attribute, with the reason that the information is unknown being

specified. Otherwise, the date shall be recorded, and should have precision of at least the day.

6.1.4.17.9<routeCode code=' ' codeSystem=' ' codeSystemName='RouteOfAdministration'/>

See routeCode under Medications.

6.1.4.17.10 <approachSiteCode code=' ' codeSystem=' ' codeSystemName='HumanSubstanceAdministrationSite'/>

See approachSiteCode under Medications.

6.1.4.17.11 <doseQuantity value=' ' units=' '/>

See doseQuantity under Medications.

6.1.4.17.12 <consumable typeCode='CSM'>

See consumable under Medications.

6.1.4.17.13 <entryRelationship typeCode='REFR'> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.3'/>

The top level <substanceAdministration> element may contain a reference (typeCode='REFR') to related Supply entry

6.1.4.17.14 <entryRelationship typeCode='SUBJ'> <observation classCode='OBS' moodCode='EVN'> <templateId root='2.16.840.1.113883.10.20.1.46'/>

This optional entry relationship may be present to indicate that position of this immunization in a series of immunizations.

6.1.4.17.15 <code code='30973-2' displayName='Dose Number' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>

The <code> element shall be present and must be recorded with the code and codeSystem attributes shown above. This element indicates that the observation describes the dose number for the immunization.

6.1.4.17.16 <statusCode code='completed'/>

The <statusCode> element shall be present, and must be recorded exactly as shown above. This element indicates that the observation has been completed.

6.1.4.17.17 <value xsi:type='INT' value=' '/>

The <value> element shall be present, and shall indicate the immunization series number in the value attribute.

6.1.4.17.18 <entryRelationship inversionInd='false' typeCode='CAUS'>

This repeatable element should be used to identify adverse reactions caused by the immunization.

6.1.4.17.19 <observation classCode='OBS' moodCode='EVN'>

This element is required, and provides a pointer to the the adverse reaction caused by the immunization.

6.1.4.17.20 <templateId root='2.16.840.1.113883.10.20.1.28'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5'/> <templateId root='2.16.840.1.113883.10.20.1.54'/>

It shall contain a conforming Problem Entry that also conform to the CCD Reaction template.

6.1.4.17.21 <id root=' ' extension=' '/>

This element is required, and gives the identifier of the adverse reaction. The adverse reaction pointed to by this element shall be described in more detail using the Allergies entry, elsewhere in the document where this element was found.

6.1.4.17.22 <!-- Optional <entryRelationship> element containing comments -->

An immunization entry can have negationInd set to true to indicate that an immunization did not occur. In this case, it shall have at least one comment that provides an explaination for why the immunization did not take place . Other comments may also be present.

6.1.4.18 Supply Entry 1.3.6.1.4.1.19376.1.5.3.1.4.7.3

The supply entry describes a prescription activity.

6.1.4.18.1 Specification

```
<substanceAdministration classCode='SBADM' moodCode='INT|EVN'>
    :
    .
  <entryRelationship typeCode='REFR' inversionInd='false'>
    <sequenceNumber value=''/>
    <supply classCode='SPLY' moodCode='INT|EVN'>
      <templateId root='2.16.840.1.113883.10.20.1.34'/>
      <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.3'/>
      <id root='' extension=''/>
      <repeatNumber value=''/>
      <quantity value='' unit=''/>
      <author>
        <time value=''/>
        <assignedAuthor>
          <id root='' extension=''/>
          <addr></addr>
          <telecom use='' value=''/>
          <assignedPerson><name></name></assignedPerson>
          <representedOrganization><name></name></representedOrganization>
        </assignedAuthor>
      </author>
      <performer typeCode='PRF'>
        <time value=''/>
        <assignedEntity>
          <id root='' extension=''/>
          <addr></addr>
          <telecom use='' value=''/>
          <assignedPerson><name></name></assignedPerson>
          <representedOrganization><name></name></representedOrganization>
        </assignedEntity>
      </performer>
      <!-- Optional Fulfillment instrctions -->
      <entryRelationship typeCode='SUBJ'>
      </entryRelationship>
    </supply>
  </entryRelationship>
</substanceAdministration>
```

6.1.4.18.2 <entryRelationship typeCode='REFR' inversionInd='false'>

A <substanceAdministration> act may reference (typeCode='REFR') a prescription activity in an <entryRelationship> element in a CDA document. In a message, the relationship is recorded using a <sourceOf> element instead of the <entryRelationship> element. The typeCode and inversionInd attributes, and the semantics remain identical.

6.1.4.18.3 <sequenceNumber value=' '/>

The prescription activity may have a <sequenceNumber> element to indicate the fill number. A value of 1, 2 or N indicates that it is the first, second, or Nth fill respectively of a specific prescription. This element should be present when the embedded <supply> element has a moodCode attribute of EVN.

6.1.4.18.4 <supply classCode='SPLY' moodCode='INT|EVN'>

The <supply> element shall be present. The moodCode attribute shall be INT to reflect that a medication has been prescribed, or EVN to indicate that the prescription has been filled.

6.1.4.18.5<templateId root='2.16.840.1.113883.10.20.1.34'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.3'/>

The <templateId> elements shown above shall be present, and identify this supply act as a Supply Entry.

6.1.4.18.6<id root=' ' extension=' '/>

Each supply act shall have an identifier to uniquely identify the supply entry.

6.1.4.18.7<repeatNumber value=' '/>

Each supply entry should have a <repeatNumber> element that indicates the number of times the prescription can be filled.

6.1.4.18.8<quantity value=' ' unit=' '/>

The supply entry should indicate the quantity supplied. The value attribute shall be present and indicates the quantity of medication supplied. If the medication is supplied in dosing units (tablets or capsules), then the unit attribute need not be present (and should be set to 1 if present). Otherwise, the unit element shall be present to indicate the quantity (e.g., volume or mass) of medication supplied.

6.1.4.18.9<author>

A supply entry that describes an intent (<supply classCode='SPLY' moodCode='INT'>) may include an <author> element to identify the prescribing provider.

6.1.4.18.10 <time value=' '/>

The <time> element must be present to indicate when the author created the prescription. If this information is unknown, it shall be recorded by setting the nullFlavor attribute to UNK.

6.1.4.18.11 <assignedAuthor>

The <assignedAuthor> element shall be present, and identifies the author.

6.1.4.18.12 <id root=' ' extension=' '/>

One or more <id> elements should be present. These identifiers identify the author of the act. When the author is the prescribing physician they may include local identifiers or regional identifiers necessary for prescribing.

6.1.4.18.13 <assignedPerson><name/></assignedPerson> <representedOrganization><name/></ representedOrganization>

An <assignedPerson> and/or <representedOriganization> element shall be present. This element shall contain a <name> element to identify the prescriber or their organization.

6.1.4.18.14 <performer typeCode='PRF'>

The <performer> element may be present to indicate who is intended (moodCode='INT'), or actually filled (moodCode='EVN') the prescription.

6.1.4.18.15 <time value=' '/>

The <time> element shall be present to indicate when the prescription was filled (moodCode='EVN'). If this information is unknown, it shall be recorded by setting the nullFlavor attribute to UNK.

The <time> element should be present to indicate when the prescription is intended to be filled (moodCode='INT').

6.1.4.18.16 <assignedEntity>

The < assignedEntity> element shall be present, and identifies the filler of the prescription.

6.1.4.18.17 <id root=' ' extension=' '/>

One or more <id> elements should be present. These identify the performer.

6.1.4.18.18 <assignedPerson><name/></assignedPerson> <representedOrganization><name/></ representedOrganization>

An <assignedPerson> and/or <representedOriganization> element shall be present. This element shall contain a <name> element to identify the filler or their organization.

6.1.4.18.19 <!-- Optional Fulfillment instrctions --> <entryRelationship typeCode='SUBJ'> </entryRelationship>

An entry relationship may be present to provide the fulfillment instructions. When present, this entry relationship shall contain a Medication Fulfillment Instructions entry.

6.1.4.19 Product Entry 1.3.6.1.4.1.19376.1.5.3.1.4.7.2

The product entry describes a medication or immunization used in a <substanceAdministration> or <supply> act. It adopts the constraints of the ASTM/HL7 Continuity of Care Document.

6.1.4.19.1 Specification

```
<!-- Within a CDA Document -->
<manufacturedProduct>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.2'/>
  <templateId root='2.16.840.1.113883.10.20.1.53'/>
  <manufacturedMaterial>
    <code code='' displayName='' codeSystem='' codeSystemName=''>
      <originalText><reference value=''/></originalText>
    </code>
    <name></name>
  </manufacturedMaterial>
</manufacturedProduct>
<!-- Within a message -->
<administerableMaterial>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.2'/>
  <templateId root='2.16.840.1.113883.10.20.1.53'/>
    <administerableMaterial>
        <code></code>
    <desc></desc>
  </administerableMaterial>
</administerableMaterial>
```

6.1.4.19.2 <manufacturedProduct> -OR- <administerableMaterial> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.2'/> <templateId root='2.16.840.1.113883.10.20.1.53'/> <manufacturedMaterial> -OR- <administerableMaterial>

In a CDA document, the name and strength of the medication are specified in the elements under the <manufacturedMaterial> element. In a message, the are contained within the <administeredMaterial> element, inside another <administerableMaterial> element[1]. The templateId elements are required and identify this as a product entry.

[1] This duplication of element names is an artifact of the standard.

6.1.4.19.3 <code code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '> <originalText><reference value=' '/></originalText> </code>

The <code> element of the <manufacturedMaterial> describes the medication. This may be coded using a controlled vocabulary, such as RxNorm, First Databank, or other vocabulary system for medications, and should be the code that represents the generic medication name and strength (e.g., acetaminophen and oxycodone -5/325), or just the generic medication name alone if strength is not relevant (Acetaminophen).

In a CDA document, the <originalText> shall contain a <reference> whose URI value points to the generic name and strength of the medication, or just the generic name alone if strength is not relevant. Inside a message, the <originalText> may contain the actual text that describes the medication in similar fashion.

Note: When the text is supplied from the narrative, the implication is that if you supply the components of a combination medication in an entry, you must also display these in the narrative text, otherwise you

would not be able to break the combination medication down into its component parts. This is entirely consistent with the CDA Release 2.0 requirements that the narrative supply the necessary and relevant human readable information content.

The <code> element is also used to support coding of the medication. If coded, it must provide a code and codeSystem attribute using a controlled vocabulary for medications. The displayName for the code and codeSystemName should be provided as well for diagnostic and human readability purposes, but are not required. The table below provides the codeSystem and codeSystemName for several controlled terminologies that may be used to encode medications and/or immunizations.

codeSystem	codeSystemName	Description
2.16.840.1.113883.6.88	RxNorm	RxNorm
2.16.840.1.113883.6.69	NDC	National Drug Codes
2.16.840.1.113883.6.63	FDDC	First DataBank Drug Codes
2.16.840.1.113883.6.96	SNOMED-CT	SNOMED Controlled Terminology
2.16.840.1.113883.6.59	CVX	CDC Vaccine Codes

The code used for an immunization may use code systems other than what might be used for other medications, such as the CDC maintained CVX codes. Code systems that describe vaccination *procedures* (such as CPT-4) shall not be used to describe the vaccine entry.

6.1.4.19.4<name> -OR- <desc>

In a CDA document, the <name> element should contain the brand name of the medication (or active ingredient in the case of subordinate <substanceAdministration> elements used to record components of a medication). Within a message, this information shall be provided in the <desc> element.

6.1.4.20 Simple Observations 1.3.6.1.4.1.19376.1.5.3.1.4.13

The simple observation entry is meant to be an abstract representation of many of the observations used in this specification. It can be made concrete by the specification of a few additional constraints, namely the vocabulary used for codes, and the value representation. A simple observation may also inherit constraints from other specifications (e.g., ASTM/HL7 Continuity of Care Document).

6.1.4.20.1 Specification

```
<observation classCode='OBS' moodCode='EVN'>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
  <id root='' extension=''/>
  <code code='' displayName='' codeSystem='' codeSystemName=''/>
  <!-- for CDA -->
  <text><reference value='#xxx'/></text>
  <!-- For HL7 Version 3 Messages
  <text>text</text>
  -->
  <statusCode code='completed'/>
  <effectiveTime value=''/>
  <repeatNumber value=''/>
  <value xsi:type='' …/>
  <interpretationCode code='' codeSystem='' codeSystemName=''/>
  <methodCode code='' codeSystem='' codeSystemName=''/>
  <targetSiteCode code='' codeSystem='' codeSystemName=''/>
  <author typeCode='AUT'>
    <assignedAuthor typeCode='ASSIGNED'><id ... /></assignedAuthor> <!-- for CDA -->
    <!-- For HL7 Version 3 Messages
    <assignedEntity typeCode='ASSIGNED'>
       <Person classCode='PSN'>
          <determinerCode root=''>
          <name>…</name>
       </Person>
    <assignedEntity>
     -->
  </author>
</observation>
```

6.1.4.20.2 <observation classCode='OBS' moodCode='EVN'>

These acts are simply observations that have occurred, and so are recored using the <observation> element as shown above.

6.1.4.20.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>

The <templateId> element identifies this <observation> as a simple observation, allowing for validation of the content. The templateId must appear as shown above.

6.1.4.20.4 <id root=' ' extension=' '/>

Each observation shall have an identifier.

6.1.4.20.5 <code code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '/>

Observations shall have a code describing what was measured. The code system used is determined by the vocabulary constraints on the types of measurements that might be recorded in a section. Content modules that are derived from the Simple Observation content module may restrict the code system and code values used for the observation.

6.1.4.20.6<text><reference value='#xxx'/></text> -OR- <text>text</text>

Each observation measurement entry may contain a <text> element providing the free text that provides the same information as the observation within the narrative portion of the document with a <text> element. For CDA based uses of Simple Observations, this element SHALL be present, and SHALL contain a <reference> element that points to the related string in the narrative portion of the document. For HL7 Version 3 based uses, the <text> element MAY be included.

6.1.4.20.7<statusCode code='completed'/>

The status code of all observations shall be completed.

6.1.4.20.8<effectiveTime value=' '/>

The <effectiveTime> element shall be present in standalone observations , and shall record the date and time when the measurement was taken. This element should be precise to the day. If the date and time is unknown, this element should record that using the nullFlavor attribute.

6.1.4.20.9<value xsi:type=' ' …/>

The value of the observation shall be recording using a data type appropriate to the observation. Content modules derived from the Simple Observation content module may restrict the allowable data types used for the observation.

6.1.4.20.10 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>

If there is an interpretation that can be performed using an observation result (e.g., high, borderline, normal, low), these may be recorded within the interpretationCode element.

6.1.4.20.11 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>

The methodCode element may be used to record the specific method used to make an observation when this information is not already pre-coordinated with the observation code .

6.1.4.20.12 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>

The targetSiteCode may be used to record the target site where an observation is made when this information is not already pre-coordinated with the observation code.

6.1.4.20.13 <author><assignedAuthor classCode='ASSIGNED'>...<assignedAuthor></author>

In CDA uses, SimpleObservations are assumed to be authored by the same author as the document through context conduction. However specific authorship of observation may

be represented by listing the author in the header and referencing the author in a <author> relationship. If authors are explicitly listed in documents, an <id> element SHOULD reference the ID of the author in the header through an assignedAuthor Role. If the author of the observation is not an author of the document the <person> object including a name and ID SHALL be included.

For HL7 Version 3 purposes, the <author> element SHOULD be present unless it can be determined by conduction from organizers or higher level structures. When used for HL7 Version 3 the role element name is <assignedEntity> and the author is represented a <assignedPerson> element.

6.1.4.21 Vital Signs Organizer 1.3.6.1.4.1.19376.1.5.3.1.4.13.1

A vital signs organizer collects vital signs observations.

6.1.4.21.1 Specification

```
<organizer classCode='CLUSTER' moodCode='EVN'>
  <templateId root='2.16.840.1.113883.10.20.1.32'/>
  <templateId root='2.16.840.1.113883.10.20.1.35'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.1'/>
  <id root='' extension=''/>
  <code code='46680005' displayName='Vital signs'
    codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'/>
  <statusCode code='completed'/>
  <effectiveTime value=''/>
  <!-- For HL7 Version 3 Messages
  <author classCode='AUT'>
     <assignedEntity1 typeCode='ASSIGNED'>
        :
     <assignedEntity1>
  </author>
  -->
  <!-- one or more vital signs observations -->
  <component typeCode='COMP'>
    <observation classCode='OBS' moodCode='EVN'>
      <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.2'/>
        :
    </observation>
  </component>
</organizer>
```

6.1.4.21.2 <organizer classCode='CLUSTER' moodCode='EVN'>

The vital signs organizer is a cluster of vital signs observations.

6.1.4.21.3 <templateId root='2.16.840.1.113883.10.20.1.32'/> <templateId root='2.16.840.1.113883.10.20.1.35'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.1'/>

The vital signs organizer shall have the <templateId> elements shown above to indicate that it inherits constraints from the ASTM/HL7 CCD Specification for Vital signs, and the constraints of this specification.

6.1.4.21.4 <id root=' ' extension=' '/>

The organizer shall have an <id> element.

6.1.4.21.5 <code code='46680005' displayName='Vital signs' codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'/>

The <code> element shall be recorded as shown above to indicate that this organizer captures information about patient vital signs.

6.1.4.21.6 <statusCode code='completed'/>

The observations have all been completed.

6.1.4.21.7 <effectiveTime value=' '/>

The effective time element shall be present to indicate when the measurement was taken.

6.1.4.21.8 <author typeCode='AUT'><assignedEntity1 typeCode='ASSIGNED'>...</assignedEntity1></author>

For use with HL7 Version 3, Vital Sign organizers SHALL contain an <author> element to represent the person or device.

6.1.4.21.9 <!-- one or more vital signs observations --> <component typeCode='COMP'>

The organizer shall have one or more <component> elements that are <observation> elements using the Vital Signs Observation template.

6.1.4.22 Vital Signs Observation 1.3.6.1.4.1.19376.1.5.3.1.4.13.2

A vital signs observation is a simple observation that uses a specific vocabulary, and inherits constraints from CCD.

6.1.4.22.1 Specification

```
<observation classCode='OBS' moodCode='EVN'>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
 <templateId root='2.16.840.1.113883.10.20.1.31'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.2'/>
 <id root=' ' extension=' '/>
 <code code=' ' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
 <text><reference value='#xxx'/></text>
 <statusCode code='completed'/>
 <effectiveTime value=' '/>
 <repeatNumber value=' '/>
 <value xsi:type='PQ' value=' ' unit=' '/>
 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>
</observation>
```

6.1.4.22.2<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/> <templateId root='2.16.840.1.113883.10.20.1.31'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.2'/>

A vital signs observation shall have the <templateId> elements shown above to indicate that it inherits constraints from the ASTM/HL7 CCD Specification for Vital signs, and the constraints of this specification.

6.1.4.22.3<code code=' ' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>

A vital signs observation entry shall use one of the following LOINC codes, with the specified data types and units.

9279-1	RESPIRATION RATE	/min	PQ
8867-4	HEART BEAT		
2710-2	OXYGEN SATURATION	%	
8480-6	INTRAVASCULAR SYSTOLIC	mm[Hg]	
8462-4	INTRAVASCULAR DIASTOLIC		
8310-5	BODY TEMPERATURE	Cel or [degF]	
8302-2	BODY HEIGHT (MEASURED)	m, cm,[in_us] or [in_uk]	
8306-3	BODY HEIGHT^LYING		
8287-5	CIRCUMFRENCE.OCCIPITAL-FRONTAL (TAPE MEASURE)		
3141-9	BODY WEIGHT (MEASURED)	kg, g, [lb_av] or [oz_av]	

6.1.4.22.4<value xsi:type='PQ' value=' ' unit=' '/>

The <value> element shall be present, and shall be of the appropriate data type specified for measure in the table above.

6.1.4.22.5<interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>

The interpretation code may be present to provide an interpretation of the vital signs measure (e.g., High, Normal, Low, et cetera).

6.1.4.22.6<methodCode code=' ' codeSystem=' ' codeSystemName=' '/>

The <methodCode> element may be present to indicate the method used to obtain the measure. Note that method used is distinct from, but possibly related to the target site.

6.1.4.22.7<targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>

The target site of the measure may be identified in the <targetSiteCode> element (e.g., Left arm [blood pressure], oral [temperature], et cetera).

6.1.4.23 Family History Organizer 1.3.6.1.4.1.19376.1.5.3.1.4.15

The family history organizer collects the problems of a patient's family member.

6.1.4.23.1 Specification

```
<entry>
  <organizer classCode='CLUSTER' moodCode='EVN'>
    <templateId root='2.16.840.1.113883.10.20.1.23'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.15'/>
    <subject typeCode='SBJ'>
      <relatedSubject classCode='PRS'>
        <code code='' displayName=''
          codeSystem='2.16.840.1.113883.5.111' codeSystemName='RoleCode'/>
        <subject>
          <sdtc:id root='' extension=''/>
          <administrativeGenderCode code='' displayName=''
            codeSystem='' codeSystemName=''/>
        </subject>
      </relatedSubject>
    </subject>
    <!-- zero or more participants linking to other relations -->
    <participant typeCode='IND'>
      <participantRole classCode='PRS'>
        <code code='' displayName=''
          codeSystem='2.16.840.1.113883.5.111' codeSystemName='RoleCode'/>
        <playingEntity classCode='PSN'>
          <sdtc:id root='' extension=''/>
        </playingEntity>
      </participantRole>
    </participant>
    <!-- one or more entry relationships for family history observations -->
    <component typeCode='COMP'>
      <observation classCode='OBS' moodCode='EVN'>
        <templateId root='2.16.840.1.113883.10.20.1.22'/>
      </observation>
    </component>
  </organizer>
</entry>
```

6.1.4.23.2 <organizer classCode='CLUSTER' moodCode='EVN'>

Each family history entry is organized (classCode='CLUSTER') into a group of observations about a family member.

6.1.4.23.3 <templateId root='2.16.840.1.113883.10.20.1.23'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.15'/>

The organizer is identified by the <templateId> elements, which shall be present as shown above.

6.1.4.23.4 <subject typeCode='SUBJ'> <relatedSubject classCode='PRS'>

The <subject> element shall be present and relates the subject of the observations to the patient. It shall contain a <relatedSubject> element that is a personal relation of the patient (classCode='PRS').

6.1.4.23.5<code code=' ' displayName=' ' codeSystem='2.16.840.1.113883.5.111' codeSystemName='RoleCode'/>

The <code> element shall be present, and give the relationship of the subject to the patient. The code attribute shall be present, and shall contain a value from the HL7 FamilyMember vocabulary. The codeSystem attribute shall be present and shall use the value shown above.

6.1.4.23.6<subject>

The <subject> element contains information about the relation.

6.1.4.23.7<sdtc:id root=' ' extension=' '/>

The <sdtc:id> element should be present. It is used to identify the patient relation to create a pedigree graph.

6.1.4.23.8<administrativeGenderCode code=' ' />

The <administrativeGenderCode> element should be present. It gives the gender of the relation.

6.1.4.23.9<participant typeCode='IND'> <participantRole classCode='PRS'>

The <participant> element may be present to record the relationship of the subject to other family members to create a pedigree graph. It shall contain a <participantRole> element showing the relationship of the subject to other family members (classCode='PRS').

6.1.4.23.10 <code code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '/>

The <code> element shall be present, and gives the relationship of the participant to the subject. The code attribute shall be present, and shall contain a value from the HL7 FamilyMember vocabulary. The codeSystem attribute shall be present and shall use the value shown above.

6.1.4.23.11 <playingEntity classCode='PSN'>

The <playingEntity> element identifies the related person. It shall be recorded as shown above.

6.1.4.23.12 <sdtc:id root=' ' extension=' '/>

The <sdtc:id> element shall be present. It must have the same root and extension attributes of the <subject> of a separate family history organizer. See Appendix C of PCC-TF for definition of this extension to CDA.

6.1.4.23.13 <component typeCode='COMP'> <observation classCode='OBS' moodCode='EVN'> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.3'/>

The family history organizer shall contain one or more components using the <component> element shown above. These components must conform the Family History Observation template.

6.1.4.24 Social History Observation 1.3.6.1.4.1.19376.1.5.3.1.4.13.4

A social history observation is a simple observation that uses a specific vocabulary, and inherits constraints from CCD.

6.1.4.24.1 Standards

CCD	ASTM/HL7 Continuity of Care Document

6.1.4.24.2 Parent Template

The parent of this template is Simple Observation. This template is compatible with the ASTM/HL7 Continuity of Care Document template: 2.16.840.1.113883.10.20.1.33

6.1.4.24.3 Specification

Figure 6.1-83 Social History Observation Example

```
<observation typeCode='OBS' moodCode='EVN'>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
 <templateId root='2.16.840.1.113883.10.20.1.33'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.4'/>
 <id root=' ' extension=' '/>
 <code code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '/>
 <text><reference value='#xxx'/></text>
 <statusCode code='completed'/>
 <effectiveTime value=' '/>
 <repeatNumber value=' '/>
 <value xsi:type=' ' />
 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>
</observation>
```

6.1.4.24.4 <templateId root='2.16.840.1.113883.10.20.1.33'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.4'/>

These <templateId> elements identify this as a Social History observation.

6.1.4.24.5 <code code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '/>

The <code> element identifies the type social history observation.

229819007	Smoking	PQ	{pack}/d or {pack}/wk or {pack}/a
256235009	Exercise		{times}/wk
160573003	ETOH (Alcohol) Use		{drink}/d or {drink}/wk
364393001	Diet	CD	N/A
364703007	Employment		
425400000	Toxic Exposure		
363908000	Drug Use		
228272008	Other Social History	ANY	

6.1.4.24.6 ~~<repeatNumber value=' '/>~~

The <repeatNumber> element should not be used in a social history observation.

6.1.4.24.7 <value xsi:type=' ' ... />

The <value> element reports the value associated with the social history observation. The data type to use for each observation should be drawn from the table above.

Observations in the table above using the PQ data type have a unit in the form {xxx}/d, {xxx}/wk or {xxx}/a represent the number of items per day, week or year respectively. The value attribute indicates the number of times of the act performed, and the units represent the frequency. The example below shows how to represent 1 drink per day.

```
  :
<code code='160573003' displayName='ETOH Use'
      codeSystem='2.16.840.1.113883.6.96'
      codeSystemName='SNOMED CT'/>
  :
<value xsi:type='PQ' value='1' unit='{drink}/d'/>
  :
```

Observations in the table using the CD data type should include coded values from an appropriate vocabulary to represent the social history item. The example below shows the encoding to indicate drug use of cannabis.

```
  :
<code code='363908000' displayName='Drug Use'
      codeSystem='2.16.840.1.113883.6.96'
      codeSystemName='SNOMED CT'/>
  :
<value xsi:type='CD' code='398705004' displayName='cannabis'
       codeSystem='2.16.840.1.113883.6.96'
       codeSystemName='SNOMED CT'/>
  :
```

Other social history observations may use any appropriate data type.

6.1.4.24.8 ~~<interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>~~

~~<methodCode code=' ' codeSystem=' ' codeSystemName=' '/>~~
~~<targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>~~

The <interpretationCode>, <methodCode>, and <targetSiteCode> elements should not be used in a social history observation.

Examples Using PCC Content Profiles

Example documents conforming to each profile can be found on the IHE wiki at the following URLs.

Profile and Content	URL
XDS-MS	
Referral Summary	XDSMS Example1
Discharge Summary	XDSMS Example1
XPHR	
XPHR Content	XPHR Example1
XPHR Update	XPHR Example2
(EDR) ED Referral	EDR Example
(APS) Antepartum Summary	APS Example
(EDES)	
Triage Note	EDES Example1
ED Nursing Note	EDES Example2
Composite Triage and Nursing Note	EDES Example3
ED Physician Note	EDES Example4
(FSA) Functional Status Section	FSA Example

Validating CDA Documents using the Framework

Many of the constraints specified by the content modules defined in the PCC Technical Framework can be validated automatically by software. Automated validation is a very desirable capability, as it makes it easier for implementers to test the correctness of their implementations. With regard to validation of the content module, the PCC Technical Framework narrative is the authoritative specification, not any automated software tool. Having said that, it is still very easy to create a validation framework for the IHE PCC Technical Framework using a XML validation tool such as Schematron. Since each content module has a name (the template identifier), any XML instance that reports itself

to be of that "class" can be validated by creating assertions that must be true for each constraint indicated for the content module. In the XML representation, the <templateId> element is a child of the element that is claiming conformance to the template named. Thus the general pattern of a Schematron that validates a specific template is shown below:

```
<schema xmlns="http://www.ascc.net/xml/schematron" xmlns:cda="urn:hl7-org:v3">
  <ns prefix="cda" uri="urn:hl7-org:v3" />
  <pattern name='ReferralSummary'>
    <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.3]"'>
      <!-- one or more assertions made by the content module -->
    </rule>
  </pattern>
</schema>
```

A.1 Validating Documents

For document content modules, the pattern can be extended to support common document content module constraints as shown below:

```
<schema xmlns="http://www.ascc.net/xml/schematron" xmlns:cda="urn:hl7-org:v3">
  <ns prefix="cda" uri="urn:hl7-org:v3" />
  <pattern name='ReferralSummary'>
    <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.3]"'>
      <!-- Verify that the template id is used on the appropriate type of object -->
      <assert test='../ClinicalDocument'>
        Error: The referral content module can only be used on Clinical Documents.
      </assert>
      <!-- Verify that the parent templateId is also present. -->
      <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.2"]'>
        Error: The parent template identifier for medical summary is not present.
      </assert>
      <!-- Verify the document type code -->
      <assert test='code[@code = "34133-9"]'>
        Error: The document type code of a referral summary must be
        34133-9 SUMMARIZATION OF EPISODE NOTE.
      </assert>
      <assert test='code[@codeSystem = "2.16.840.1.113883.6.1"]'>
        Error: The document type code must come from the LOINC code
        system (2.16.840.1.113883.6.1).
      </assert>
      <!-- Verify that all required data elements are present -->
      <assert test='.//templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.1"]'>
        Error: A referral summary must contain a reason for referral.
      </assert>
      <!-- Alert on any missing required if known elements -->
      <assert test='.//templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.8"]'>
        Warning: A referral summary should contain a list of history of past illnesses.
      </assert>
      <!-- Note any missing optional elements -->
      <assert test='.//templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.18"]'>
        Note: This referral summary does not contain the pertinent review of systems.
      </assert>
    </rule>
  </pattern>
</schema>
```


A.2 Validating Sections

The same pattern can be also applied to sections with just a few minor alterations.

```
<schema xmlns="http://www.ascc.net/xml/schematron" xmlns:cda="urn:hl7-org:v3">
  <ns prefix="cda" uri="urn:hl7-org:v3" />
  <pattern name='ReasonForReferralUncoded'>
    <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.1"]'>
      <!-- Verify that the template id is used on the appropriate type of object -->
      <assert test='section'>
        Error: The coded reason for referral module can only be used on a section.
      </assert>
      <assert test='false'>
        Manual: Manually verify that this section contains narrative providing the
        reason for referral.
      </assert>
      <!-- Verify that the parent templateId is also present. -->
      <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.3.1"]'>
        Error: The parent template identifier for the reason for referral
        module is not present.
      </assert>
      <!-- Verify the section type code -->
      <assert test='code[@code = "42349-1"]'>
        Error: The section type code of the reason for referral section must be 42349-1
        REASON FOR REFERRAL.
      </assert>
      <assert test='code[@codeSystem = "2.16.840.1.113883.6.1"]'>
        Error: The section type code must come from the LOINC code
        system (2.16.840.1.113883.6.1).
      </assert>
  </pattern>
  <pattern name='ReasonForReferralCoded'>
    <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.2"]'>
      <!-- The parent template will have already verified the type of object -->
      <!-- Verify that the parent templateId is also present. -->
      <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.3.1"]'>
        Error: The parent template identifier for the reason for referral
        module is not present.
      </assert>
      <!-- Don't bother with the section type code, as the parent template caught it -->
      <!-- Verify that all required data elements are present -->
      <assert test='.//templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.13"]'>
        Error: A coded reason for referral section must contain an simple observation.
      </assert>
      <!-- Alert on any missing required if known elements -->
      <!-- Note any missing optional elements -->
    </rule>
  </pattern>
</schema>
```

A similar pattern can also be followed for Entry and Header content modules, and these are left as an exercise for the reader.

A.3 Phases of Validation and Types of Errors

Note that each message in the Schematrons shown above start with a simple text string that indicates whether the message indicates one of the following conditions:

- An error, e.g., the failure to transmit a required element,
- A warning, e.g., the failure to transmit a required if known element,
- A note, e.g., the failure to transmit an optional element.
- A manual test, e.g., a reminder to manually verify some piece of content.

Schematron supports the capability to group sets of rules into phases by the pattern name, and to specify which phases of validation should be run during processing. To take advantage of this capability, one simply breaks each <pattern> element above up into separate patterns depending upon whether the assertion indicates an error, warning, note or manual test, and then associate each pattern with a different phase. This is shown in the figure below.


```
<schema xmlns="http://www.ascc.net/xml/schematron" xmlns:cda="urn:hl7-org:v3">
  <ns prefix="cda" uri="urn:hl7-org:v3" />
  <phase id="errors">
    <active pattern="ReasonForReferralUncoded_Errors"/>
    <active pattern="ReasonForReferralCoded_Errors"/>
  </phase>
  <phase id="manual">
    <active pattern="ReasonForReferralUncoded_Manual"/>
  </phase>
  <pattern name='ReasonForReferralUncoded_Errors'>
    <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.1"]'>
      <assert test='section'>
        Error: The coded reason for referral module can only be used on a section.
      </assert>
      <assert test='code[@code = "42349-1"]'>
        Error: The section type code of the reason for referral section must be 42349-1
        REASON FOR REFERRAL.
      </assert>
      <assert test='code[@codeSystem = "2.16.840.1.113883.6.1"]'>
        Error: The section type code must come from the LOINC code
        system (2.16.840.1.113883.6.1).
      </assert>
    </rule>
  </pattern>
  <pattern name='ReasonForReferralUncoded_Manual'>
    <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.1"]'>
      <assert test='false'>
        Manual: Manually verify that this section contains narrative providing the
        reason for referral.
      </assert>
  </pattern>
  <pattern name='ReasonForReferralCoded_Errors'>
    <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.2"]'>
      <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.3.1"]'>
        Error: The parent template identifier for the reason for referral not present.
      </assert>
      <assert test='.//templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.13"]'>
        Error: A coded reason for referral section must contain an simple observation.
      </assert>
    </rule>
  </pattern>
</schema>
```

Using these simple "templates" for template validation one can simply create a collection of Schematron patterns that can be used to validate the content modules in the PCC Technical Framework. Such Schematrons are expected to be made available as part of the MESA test tools that are provided to IHE Connectathon participants, and which will also be made available to the general public after connectathon.

Extensions to CDA Release 2.0

This section describes extensions to CDA Release 2.0 that are used by the IHE Patient Care Coordination Technical Framework.

A.4 IHE PCC Extensions

All Extensions to CDA Release 2.0 created by the IHE PCC Technical Committee are in the namespace urn:ihe:pcc:hl7v3.

The approach used to create extension elements created for the PCC Technical Framework is the same as was used for the HL7 Care Record Summary (see Appendix E) and the ASTM/HL7 Continuity of Care Document (see secion 7.2).

A.4.1 replacementOf

The <replacementOf> extension element is applied to a section appearing in a PHR Update Document to indicate that that section's content should replace that of a previously existing section. The identifier of the previously existing section is given so that the PHR Manager receiving the Update content will know which section to replace. The model for this extension is shown below.

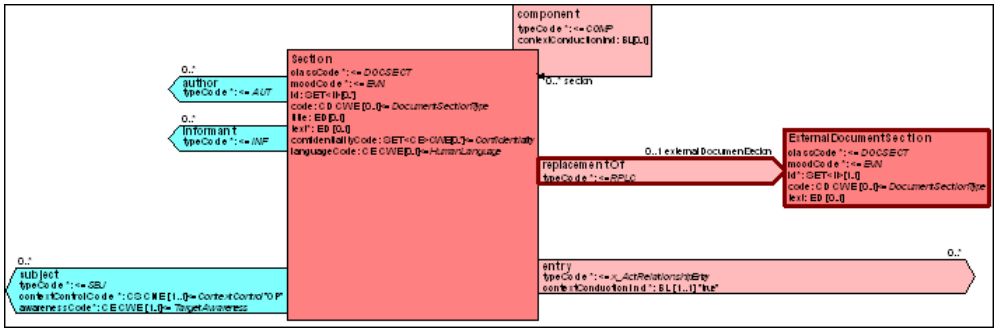

Figure 6.1-84Model for replacementOf

Use of this extension is shown below. The <replacementOf> element appears after all other elements within the <section> element. The <id> element appearing in the <externalDocumentSection> element shall provide the identifier of the section being replaced in the parent document.

```
<section>
 <id root=' ' extension=' '/>
 <code code=' ' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
 <title>Name of the Section</title>
 <text>Text of the section</text>
 <entry></entry>
 <component></component>
 <pcc:replacementOf xmlns:pcc='urn:ihe:pcc:hl7v3'>
   <pcc:externalDocumentSection>
     <pcc:id root='58FCBE50-D4F2-4bda-BC1C-2105B284BBE3'/>
   <pcc:externalDocumentSection/>
 </pcc:replacementOf>
</section>
```

A.5 Extensions Defined Elsewhere used by IHE PCC

A.5.1 Entity Identifiers

There is often a need to record an identifer for an entity so that it can be subsequently referenced. This extension provides a mechnism to store that identifier. The element appears after any <realm>, <typeId> or <templateId> elements, but before all others in the entity where it is used:

```
<playingEntity classCode='ENT' determinerCode='INSTANCE'>
 <sdtc:id root='1.3.6.4.1.4.1.2835.2' extension='EntityID'/>
   :
   .
</playingEntity>
```

A.5.2 Patient Identifier

There is a need to record the identifer by which a patient is known to another healthcare provider. This extension provides a role link between the assigned, related or associated entity, and the patient role.

Use of this extension to record the identifier under which the patient is known to a provider is shown below.

```
<assignedEntity>
 <id extension='1' root='1.3.6.4.1.4.1.2835.1'/>
 <code code='59058001'
   codeSystem='2.16.840.1.113883.6.96'
   codeSystemName='SNOMED CT'
   displayName='General Physician'/>
 <addr>
   <streetAddressLine>21 North Ave</streetAddressLine>
   <city>Burlington</city>
   <state>MA</state>
   <postalCode>01803</postalCode>
   <country>USA</country>
 </addr>
 <telecom value='tel:(999)555-1212' use='WP'/>
 <assignedPerson>
   <name>

<prefix>Dr.</prefix><given>Bernard</given><family>Wiseman</family><suffix>Sr.</suffix>
   </name>
 </assignedPerson>
 <sdtc:patient xmlns:sdtc='urn:hl7-org:sdtc' >
   <sdtc:id root='1.3.6.4.1.4.1.2835.2' extension='PatientMRN'/>
 </sdtc:patient>
</assignedEntity>
```

The <patient> element records the link between the related, assigned or associated entity and the patient. The <id> element provides the identifier for the patient. The root attribute of the <id> should be the namespace used for patient identifiers by the entity. The extension attribute of the <id> element shall be the patient's medical record number or other identifier used by the entity to identify the patient.