ACC, HIMSS and RSNA
Integrating the Healthcare Enterprise

IHE Patient Care Coordination

Technical Framework
Volume II

Revision 2.0
2006-2007

For Public Comment

Comments may be submitted to:
http://forums.rsna.org under the “IHE” forum Select the appropriate sub-forum for the technical framework you are commenting upon.

Forward

Integrating the Healthcare Enterprise (IHE) is an initiative designed to stimulate the integration of the information systems that support modern healthcare institutions. Its fundamental objective is to ensure that in the care of patients all required information for medical decisions is both correct and available to healthcare professionals. The IHE initiative is both a process and a forum for encouraging integration efforts. It defines a technical framework for the implementation of established messaging standards to achieve specific clinical goals. It includes a rigorous testing process for the implementation of this framework. And it organizes educational sessions and exhibits at major meetings of medical professionals to demonstrate the benefits of this framework and encourage its adoption by industry and users.

The approach employed in the IHE initiative is not to define new integration standards, but rather to support the use of existing standards, HL7, DICOM, IETF, and others, as appropriate in their respective domains in an integrated manner, defining configuration choices when necessary. When clarifications or extensions to existing standards are necessary, IHE refers recommendations to the relevant standards bodies.

This initiative has numerous sponsors and supporting organizations in different medical specialty domains and geographical regions. In North America the primary sponsors are the American College of Cardiology (ACC), the Healthcare Information and Management Systems Society (HIMSS) and the Radiological Society of North America (RSNA). IHE Canada has also been formed. IHE Europe (IHE-EUR) is supported by a large coalition of organizations including the European Association of Radiology (EAR) and European Congress of Radiologists (ECR), the Coordination Committee of the Radiological and Electromedical Industries (COCIR), Deutsche Röntgengesellschaft (DRG), the EuroPACS Association, Groupement pour la Modernisation du Système d'Information Hospitalier (GMSIH), Société Francaise de Radiologie ([www.sfr-radiologie.asso.fr SFR]), and Società Italiana di Radiologia Medica (SIRM). In Japan IHE-J is sponsored by the Ministry of Economy, Trade, and Industry (METI); the Ministry of Health, Labor, and Welfare; and [www.medis.or.jp MEDIS-DC]; cooperating organizations include the Japan Industries Association of Radiological Systems (JIRA), the Japan Association of Healthcare Information Systems Industry (JAHIS), Japan Radiological Society (JRS), Japan Society of Radiological Technology (JSRT), and the Japan Association of Medical Informatics (JAMI). Other organizations representing healthcare professionals are actively involved and others are invited to join in the expansion of the IHE process across disciplinary and geographic boundaries.

The IHE Technical Frameworks for the various domains (Patient Care Coordination, IT Infrastructure, Cardiology, Laboratory, Radiology, etc.) define specific implementations of established standards to achieve integration goals that promote appropriate sharing of medical information to support optimal patient care. These are expanded annually, after a period of public review, and maintained regularly through the identification and correction of errata. The current version for these Technical Frameworks may be found at www.ihe.net.

The IHE Technical Framework identifies a subset of the functional components of the healthcare enterprise, called IHE Actors, and specifies their interactions in terms of a set of coordinated, standards-based transactions. It describes this body of transactions in progressively greater depth. Volume I provides a high-level view of IHE functionality, showing the transactions organized into functional units called Integration Profiles that highlight their capacity to address specific clinical needs. Subsequent volumes provide detailed technical descriptions of each IHE transaction.

Content of the Technical Framework

This technical framework defines relevant standards and constraints on those standards in order to implement a specific use cases for the transfer of information between systems. This document is organized into 2 volumes as follows:

Volume 1 – Overview

This volume is provided as a high level overview of the profiles including descriptions of the use case, the actors involved, the process flow, and dependencies on other standards and IHE profiles. It is of interest to care providers, vendors' management and technical architects and to all users of the profile

Volume 2 – Transactions and Content Profiles

This volume is intended as a technical reference for the implementation of specific transactions in the use case including references to the relevant standards, constraints, and interaction diagrams. It is intended for the technical implementers of the profile.

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:

Joyce Sensmeier
Director of Professional Services
230 East Ohio St., Suite 500
Chicago, IL 60611
Email: ihe@himss.org

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Comment

Table of Contents

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)
- Educ.ppt Patient Care Coordination
- Use Cases for Medical Summaries
- Ovrw.ppt Patient Care Coordination - Overview of Profiles

1.3 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.

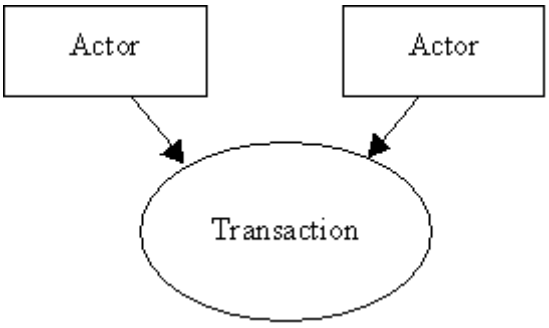
1.4 Conventions Used in this Volume

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.

1.5 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.:



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:

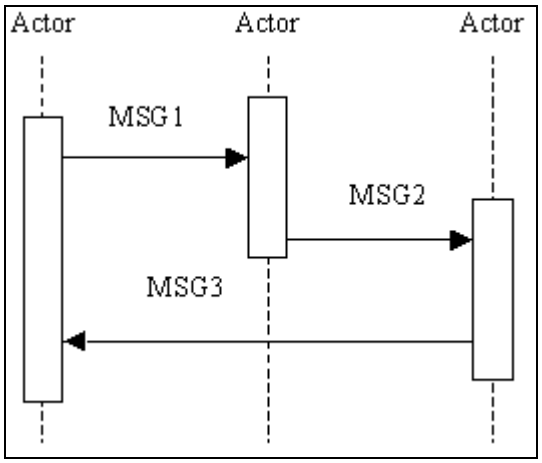


Figure 1.5-1 Interaction Diagram

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.

1.6 Copyright Permissions

1.7 How to Contact Us

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Joyce Sensmeier
Director of Professional Services
230 East Ohio St., Suite 500
Chicago, IL 60611
Email: ihe@himss.org

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

2.3.1.1.1.1 Specification

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

2.3.1.1.1.2 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='SampleDocumentOID'/>
  <id root=' ' extension=' '/>
  <code code=' ' displayName=' '
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Sample Document</title>
  <effectiveTime value='20070619012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
  <languageCode code='en-US'/>
     :
  <component><structuredBody>

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

Figure 2.3-1 Sample Sample Document Document

```
   <!-- Verify the document type code -->
   <assert test='code[@code = "{{{LOINC}}}"]'>
     Error: The document type code of a Sample Document must be {{{LOINC}}}
   </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>
```

2.3.1.2 Section Content Module Constraints

Section content modules will define the content of a section of a clinical document.
580 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

Template ID	SampleSectionOID	
Parent Template	foo (SampleParentOID)	
General Description	Desription of this section	
LOINC Codes	**Opt**	**Description**
XXXXX-X	R	SECTION NAME
Entries	**Opt**	**Description**
OID	R	Sample Entry
Subsections	**Opt**	**Description**
OID	R	Sample Subsection

2.3.1.2.1.1 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>
</component>
```

Figure 2.3-2 Sample Sample Section

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>
```

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

Some details about the observation element

2.3.1.3.2 <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.

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

3.1.1 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.

3.1.1.1 Content Consumer Options

3.1.1.1.1 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.

3.1.1.1.2 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.

3.1.1.1.3 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.

3.1.1.1.4 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.

3.1.2 Privacy Option

The Privacy Option applies to Actors in the ITI Technical Framework. Below are the proposed changes to that technical framework for implementing the BPPC Profile.

Editor's Note Add the following to ITI TF-2:3.14.4.1.3.1 Register Document Set to explain the Privacy Option

3.1.2.1 3.14.4.1.3.1 Privacy Option

If the Privacy Option is implemented:

1. The Registry actor shall verify that the confidentialityCode in the document metadata consists of OID values that match the Privacy Consent Policies that have been configured for this XDS Affinity Domain, and shall ensure that all documents submitted have confidentiality codes. The confidentiality codes for different documents in the same submission may be different.
2. The Registry actor shall be able to be configured with the Privacy Consent Policies, Privacy Consent Policy Identifiers (OIDs) and associated information necessary to understand and enforce the XDS Affinity Domain Policy. The details of this are product specific and not specified by IHE.

Editor's Note Add the following to ITI TF-2:3.15.5.1 Provide and Register to explain the Privacy Option

3.1.2.2 3.15.5.1 Privacy Option

If the Privacy Option is implemented:

1. The Document Source actor shall populate the confidentialityCode in the document metadata with the list of OID values that identify the Privacy Consent Policies that apply to the associated document. All documents submitted shall

have confidentiality codes. The confidentiality codes for different documents in the same submission may be different.

2. The Document Source actor shall be able to be configured with the Privacy Consent Policies, Privacy Consent Policy Identifiers (OIDs) and associated information necessary to understand and enforce the XDS Affinity Domain Policy. The details of this are product specific and not specified by IHE.
3. The Document Source actor may have user interface or business rule capabilities to determine the appropriate confidentiality codes for each document. The details of this are product specific and not specified by IHE. However, the information about how confidentiality codes are assigned must be part of the published policy for the XDS Affinity Domain.

Note: For example, when publishing a document, the Document Consumer might show a list of checkboxes where a user can select which of the available consents a document is to be published.

Editor's Note Make the following changes to section ITI 3.16.4.1.3 Query Registry and ITI 3.18.4.1.3 Registry Stored Query to explain the Privacy option

3.1.2.3 3.16.4.1.3 Privacy Option

3.1.2.4 3.18.4.1.3 Privacy Option

If the Basic Patient Privacy Consents Option is implemented:

1. The Document Consumer actor may populate the confidentialityCode in every query with the list of OID values that identify the Privacy Consent Policies that should apply to the documents that are returned in the query results. All documents submitted shall have confidentiality codes.
2. The Document Consumer actor shall be able to be configured with the Privacy Consent Policies, Privacy Consent Policy Identifiers (OIDs and associated information necessary to understand and enforce the XDS Affinity Domain Policy. The details of this are product specific and not specified by IHE.
3. The Document Consumer shall not allow access to documents for which the Document Consumer does not understand at least one of the confidentialityCode returned.
4. The Document Consumer actor shall have user access controls or business rule capabilities to determine the details of how confidentiality codes apply to query results. For example, many EHR systems have complex role based access control (RBAC) systems that determine what information is displayed to a user. The RBAC configuration will need to know the user, the user's role, the patient, and the confidentiality code to know whether all or only selected portions of the query

results are visible to the user. The details of this are product specific and not specified by IHE. These rules shall reduce the query results to only those that are appropriate to the current situation for that actor and user.

5. The Registry shall return only documents that match the requested confidentialityCode indicated in the query according to the following rules:
    1. If the query parameter confidentialityCode is empty, then it is not considered in the filter criteria, and thus the Registry may return all otherwise matching documents.
    2. If the query contains one or more confidentialityCode values, the Registry shall return only those documents for which there are active consents based on the set of confidentialityCode values submitted. An active consent is one for which there is a consent document that positively indicates patient consent to the policy, and for which the consent has not expired or been deprecated.

Note: This filtering may be provided, for example, by removing the confidentialityCode values for which there are no active consents from the initial query. An alternative is to filter the result set to remove the documents that have only confidentialityCode values that are not for active consents.

Editor's Note Add the following to ITI 3.17.4.2.3 Retrieve Document to explain the Privacy Option

3.1.2.5 3.17.4.2.3.1 Privacy Option

If the Privacy Option is implemented:

1. The Document Consumer actor shall honor the confidentialityCode in the metadata associated with the document.
2. The Document Consumer actor shall be able to be configured with Privacy Consent Policies, Privacy Consent Policy Identifiers (OIDs) and associated information necessary to understand and enforce the XDS Affinity Domain Policy. The details of this are product specific and not specified by IHE.
3. The Document Consumer actor is expected to have user access controls or business rule capabilities to determine the details of how confidentiality codes apply to documents. For example, many EHR systems have complex role based access control (RBAC) systems that determine what information is displayed to a user. The RBAC configuration will need to know the user, the user's role, the patient, and the confidentiality code to know whether all or only selected portions of the document are visible to the user. The details of this are product specific and not specified by IHE. These rules shall reduce the document display results to only those that are appropriate to the current situation for that actor and user.

Editor's Note Add the following to ITI TF-2:3.32.4.1.4 Distribute Document Set on Media

3.32.4.1.4.1 Privacy Option If the Privacy Option is implemented:

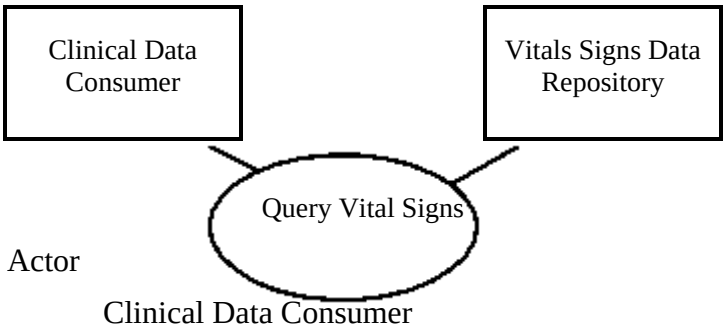
1. The Portable Media Creator actor shall populate the confidentialityCode in the document metadata with the list of Privacy Consent Policy Identifiers (OID) values that identify the Patient Privacy Policies that apply to the associated document. All documents submitted shall have confidentiality codes. The confidentiality codes for different documents in the same submission may be different.
2. The Portable Media Creator actor shall be able to be configured with the Privacy Consent Policies, Privacy Consent Policy Identifiers (OIDs) and associated information necessary to understand and enforce the policies. The details of this are product specific and not specified by IHE.
3. The Portable Media Creator actor may have user interface or business rule capabilities to determine the appropriate confidentiality codes for each document. The details of this are product specific and not specified by IHE.
4. The Portable Media Importer actor shall be able to be configured with the Privacy Consent Policies, Privacy Consent Policy Identifiers (OIDs) and associated information necessary to understand and enforce the policies. The meanings of the codes on the media must be provided out of band, e.g., by telephone, fax, or email. The detail of how this is done is product specific and not specified by IHE. If the documents are transferred internally within the organization or to other members of the recipient's affinity domain, appropriate internal confidentiality codes shall be applied.
5. The Portable Media Creator actor shall be able to publish the consent documents and any applicable digital signatures that apply to the collection of content that it has created on portable media.
6. The Portable Media Importer actor shall have the ability to coerce the confidentiality code in the metadata associated with the document from the codes used by the Exporter to the codes used by the Importer.
7. The Portable Media Importer actor shall have user access control or business rule capabilities to determine the details of how confidentiality codes apply to query results. For example, many EHR systems have complex role based access control (RBAC) systems that determine what information is displayed to a user. The RBAC configuration will need to know the user, the user's role, the patient, and the confidentiality code to know whether all or only selected portions of the document are visible to the user. The details of this are product specific and not specified by IHE. These rules shall reduce the document display results to only those that are appropriate to the current situation for that actor and user.

3.1.3 Query Vital Signs

This section corresponds to Transaction PCC-1 of the IHE Patient Care Coordination Technical Framework. Transaction PCC-1 is used by the Clinical Data Consumer and Vital Signs Data Repository Actors.

Transaction PCC-1 is uses the same pattern as other transactions in the PCC Technical Framework: PCC-2, PCC-3, PCC-4 and PCC-5. The sections below first describe the general requirements of all of these transactions. Information specific to this transaction is described in futher detail below in the section on Domain Content.

3.1.3.1 Use Case Roles



Actor

Clinical Data Consumer

Role

Requests a list of vital signs matching a minimal set of selection criteria from the Vitals Signs Repository.

Actor

Vitals Signs Data Repository

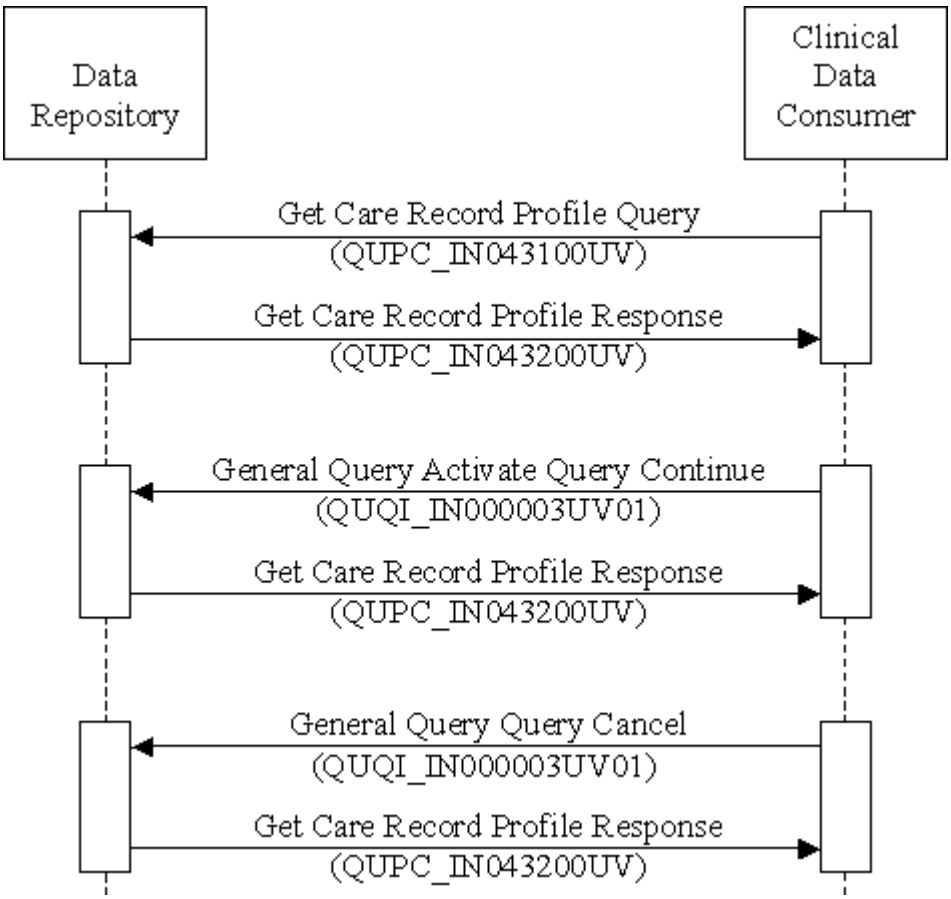
Role

Returns vital signs measurements matching the selection criteria supplied by the Clinical Data Consumer.

3.1.3.2 Referenced Standards

CareRecord	HL7 Care Provision Care Record (DSTU)
CareQuery	HL7 Care Provision Care Record Query (DSTU)
HL7WS	HL7 Version 3 Standard: Transport Specification - Web Services Profile, Release
WSDL	Web Services Description Language (WSDL 1.1)
SOAP	Simple Object Access Protocol (SOAP 1.1)

3.1.3.3 Interaction Diagrams



3.1.3.4 Get Care Record Profile Query

3.1.3.4.1 Trigger Events

The Clinical Data Consumer's need to obtain information about a patient will trigger the query, based on the following HL7 trigger event: QUPC_TE043100UV

3.1.3.4.2 Message Semantics

The Query Care Record Event Profile Query corresponds to the HL7 Interaction QUPC_IN043100UV.

This interaction uses the message element QUPC_IN043100UV as defined in QUPC_IN043100UV.xsd. The message infrastructure content shall be filled out as described in the Message Infrastructure section of the appendix on Sending HL7 Version 3 Messages. The control act process content shall be filled out as described in the Control Act Process section in that same appendix. Addition restrictions are found in the section below describing the Domain Content for the Get Care Record Profile Query.

The message supports specification of the data items listed in the table below as query parameters. The first column of this table provides the name of the parameter. The next column indicates the number of times it may occur in the query. The next column

indicates the type of data expected for the query parameter. The next column indicates the vocabulary domain used for coded values. The Consumer column indicates whether the Clinical Data Consumer must send this parameter. The Repository column indicates whether the Data Repository must support this parameter.

A Clinical Data Consumer may supply parameters other than those required by this profile, but must appropriately handle any detected issue alert raised by the Data Repository in its response.

Parameter Name	Cardinality	Data Type	Vocabulary Domain	Consumer	Repository
careProvisionCode	0..1	CD		O	R
careProvisionReason	0..*	CD		O	O
careRecordTimePeriod	0..1	IVL<TS>		O	R
clinicalStatementTimePeriod	0..1	IVL<TS>		O	R
includeCarePlanAttachment	0..1	BL		R	R
maximumHistoryStatements	0..1	INT		O	R
patientAdministrativeGender	0..1	CE	AdministrativeGender	O	R
patientBirthTime	0..1	TS		O	R
patientId	1..1	II		R	R
patientName	0..1	PN		O	R

Table 2.3-1

Each of the parameters is described in more detail below.


```
<queryByParameter>
  <statusCode code='new'/>
  <initialQuantity value=''/>
  <initialQuantityCode code='REPC_RM000100UV' codeSystem='2.16.840.1.113883'>
  <parameterList>
    <careProvisionCode>
      <value code='' displayName='' codeSystem='' codeSystemName=''/>
    </careProvisionCode>
    <careProvisionReason>
      <value code='' displayName='' codeSystem='' codeSystemName=''/>
    </careProvisionReason>
    <careRecordTimePeriod>
      <value><low value=''/><high value=''/></value>
    </careRecordTimePeriod>
    <clinicalStatementTimePeriod>
      <value><low value=''/><high value=''/></value>
    </clinicalStatementTimePeriod>
    <includeCarePlanAttachment><value value='true|false'/></includeCarePlanAttachment>
    <maximumHistoryStatements><value value=''/></maximumHistoryStatements>
    <patientAdministrativeGender>
      <value code='' displayName=''
        codeSystem='2.16.840.1.113883.5.1' codeSystemName='AdministrativeGender'/>
    </patientAdministrativeGender>
    <patientBirthTime><value value=''/></patientBirthTime>
    <patientId><value root='' extension=''/></patientId>
    <patientName><value></value></patientName>
  </parameterList>
</queryByParameter>
```

3.1.3.4.2.1 <queryByParameter>

The <queryByParameter> element shall be present, and contains all of the query parameters that are being requested by the Clinical Data Consumer.

3.1.3.4.2.2 <statusCode code='new'/>

The <statusCode> element is required, and shall have the value new as shown above to indicate that this is a new query.

3.1.3.4.2.3 <initialQuantity value=' '/>

The <initialQuantity> element may be sent to indicate the number of care statements returned. A Data Repository shall return no more than the requested number of initial values.

3.1.3.4.2.4 <initialQuantityCode code='REPC_RM000100UV' codeSystem='2.16.840.1.113883'>

The <initialQuantityCode> shall be sent when <initialQuantity> is sent. The code shall be the identifier of the HL7 artifact that is to be counted (e.g., R-MIM or C-MET identifer). For these queries, what is being counted is clinical statements, so the code to use shall be REPC_RM000100UV.

3.1.3.4.2.5 <parameterList>

The <parameterList> element shall be present, and contains the set of query parameters being used in this query.

3.1.3.4.2.6 <careProvisionCode><value code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '/></careProvisionCode>

This <careProvisionCode> may be present. This element describes the information that is being looked for in the <value> element. When the <careProvisionCode> element is not present, it indicates that all relevant results are to be reported up to the maximum number specified in maximumHistoryStatements for each result. To obtain results that have not been coded, the <value> element may be specified with a nullFlavor attribute. There are various *flavors* of NULL defined in the HL7 NullFlavor vocabulary. A query for results coded using a specific flavor of null shall return all flavors of null that are equal to, or subordinate to that flavor of null within the HL7 hierarchy of null flavors [fnord]. Specific results or categories of results may be requested using the codes listed in the domain content section below.

3.1.3.4.2.7 <careProvisionReason><value code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '/></careProvisionReason>

This element identifies the reason why the result was recorded. If specified, only those results which are recorded for the specified reason will be returned.

3.1.3.4.2.8 <careRecordTimePeriod><value><low value=' '/><high value=' '/></value></careRecordTimePeriod>

This element describes the time period over which the results were recorded. A query could for example, request new entries that have been processed for this patient since the last query request. If specified, only those results that were authored within the specified time period will be returned.

3.1.3.4.2.9 <clinicalStatementTimePeriod><value><low value=' '/><high value=' '/></value></clinicalStatementTimePeriod>

This element describes the effective time for the clinical statement. If specified, only those results that were effective within the clinical statement effective time will be returned.

The effectiveTime range of the returned clinical statements shall overlap or be wholely contained within the time range described by the <clinicalStatementTimePeriod> element. In the example below, the clinical statements with the effectiveTime values represented by time ranges B, C and D would be returned, while those with effectiveTime values represented by time ranges A and E would not, because they fall outside of the specified <clinicalStatementTimePeriod> value.

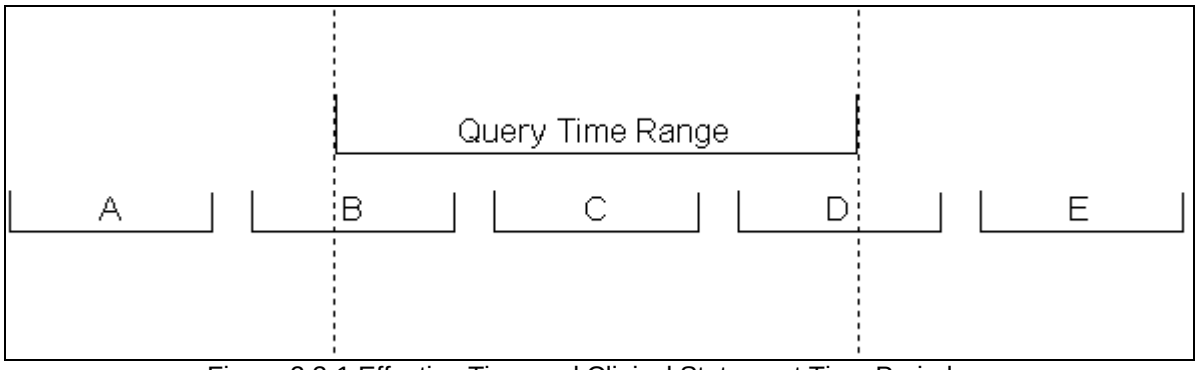


Figure 2.3-1 Effective Time and Clinical Statement Time Period

3.1.3.4.2.10 <includeCarePlanAttachment><value value='true|false'/></includeCarePlanAttachment>

The <includeCarePlanAttachment> element shall be sent, and must be set to either true or false depending upon whether care plans should be returned or not. A Data Repository may choose not to honor this request when the value is set to true, but must then raise a BUS detected issue alert to indicate that this capability is not supported. Note that many data repositories will not associate a care plan attachment with a specific result.

3.1.3.4.2.11 <maximumHistoryStatements><value value=' '/></maximumHistoryStatements>

This value indicates the maximum number of each type of result that will be returned by the query. No more than the maximum number will be returned. This value is NOT the maximum number of clinical statements returned, rather it is the maximum number of clinical statements returned for individual type of clinical statement specified in the careProvisionCode. Thus, if all results are requested (e.g., all Vital Signs), and maximumHistoryStatements/value/@value = 1, you will receive the most current value for each kind of result requested (e.g., one each of the most recent value for height, weight, blood pressure, tempurature, et cetera).

3.1.3.4.2.12 <patientAdministrativeGender> <value code=' ' displayName=' ' codeSystem='2.16.840.1.113883.5.1' codeSystemName='AdministrativeGender'/>

The patient gender may be provided in the query. If provided, it serves as a verification of the patient identity. The value must match the patient gender of the patient specified in patientId. If the two values do not match, the Vital Signs Data Repository will raise a detected issue alert.

3.1.3.4.2.13 <patientBirthTime><value value=' '/></patientBirthTime>

The patient birth time may be provided in the query. If provided, it serves as a verification of the patient identity. The value must match the patient birth time of the

patient specified in patientId. If the two values do not match, the Vital Signs Data Repository will raise a detected issue alert.

3.1.3.4.2.14 <patientId><value root=' ' extension=' '/></patientId>

The patient identifier shall be specified in this element. The root and extension attributes shall be present. When used in cross enterprise settings, the root attribute shall the affinity domain identity OID.

Sending a query with a known invalid patientId element can be used to *ping* a Data Repository. For example, setting the root attribute to "0" and omitting the extension attribute should result in a response that raises an ILLEGAL detected issue alert on the patientId field, since the value "0" will never be used as the OID of a patient identity domain. This capability can be used by a Clinical Data Consumer to verify that it can connect to a Data Repository when configuration parameters are modified.

3.1.3.4.2.15 <patientName><value></value></patientName>

The patient name may be provided in the query. If provided, it serves as a verification of the patient identity. The value must match the patient name of the patient specified in patientId. If the two values do not match, the Data Repository will raise a detected issue alert.

3.1.3.4.3 Expected Actions -- Clinical Data Consumer

The clinical data consumer shall send a query as specified in the QUPC_MT040300UV message type.

3.1.3.5 Get Care Record Profile Response

3.1.3.5.1 Trigger Events

This message is triggered upon reciept of a Query Care Record Event Profile Query, or General Query Activate Query Continue or General Query Query Cancel Message. This corresponds to HL7 trigger event: QUPC_TE043200UV

3.1.3.5.2 Message Semantics

The Get Care Record Profile Response cooresponds to the HL7 Interaction QUPC_IN043200UV.

This interaction uses the message element QUPC_IN043200UV as defined in QUPC_IN043200UV.xsd. The message infrastructure content shall be filled out as described in Message Infrastructure in the appendix on Sending HL7 Version 3 Messages. The Control Act Process content shall be filled out as described in Control Act Process in that same appendix.

The <subject> element of the <controlActProcess> element shall appear as shown in the example below.


```
<subject>
  <registrationEvent>
    <statusCode code='active'/>
    <custodian>
      <assignedEntity>
        <id root='' extension=''/>
        <addr></addr>
        <telecom></telecom>
        <assignedOrganization>
          <name></name>
        </assignedOrganization>
      </assignedEntity>
    </custodian>
    <subject2>
      <careProvisionEvent>
        <recordTarget>
          <patient>
            <id root='' extension=''/>
            <addr></addr>
            <telecom value='' use=''/>
            <statusCode code='active'/>
            <patientPerson>
              <name></name>
              <administrativeGenderCode code='' displayName=''
                 codeSystem='2.16.840.1.113883.5.1' codeSystemName='AdministrativeGender'/>
              <birthTime value=''/>
            </patientPerson>
          </patient>
        </recordTarget>
        <pertinentInformation3>
           <!-- Domain Content -->
        </pertinentInformation3>
      </careProvisionEvent>
      <parameterList>
      </parameterList>
    </subject2>
  </registrationEvent>
</subject>
```

3.1.3.5.2.1 <subject>

The <subject> element shall be present, and is where the results are returned.

3.1.3.5.2.2 <registrationEvent>

At least one <registrationEvent> element shall be be present for each set of records returned from a different custodial source.

The <registrationEvent> is used to record the information about how the <careProvisionEvent> being returned was recorded or "registered" in the custodial system. The response to a Care Profile query is a CareProvisionEvent that is constructed in response to the query. This <careProvisionEvent> is transitory in nature, and is has limited "registration" information content.

A Data Repository that aggregates information from two or more other data repositories shall separate the information into multiple <registrationEvent> elements so as to record the different custodians of the information.

3.1.3.5.2.3 <statusCode code='active'/>

The <statusCode> element records the status of the data records. Queries shall only return active records, not replaced records, so the value of this element shall always be returned as 'active'.

3.1.3.5.2.4 <custodian>

The <custodian> element records the data repository that is the custodian, or "owner", of the data record. A Data Repository actor may return records from multiple custodians, but shall separate the data records from each custodian into different <registrationEvent> elements.

3.1.3.5.2.5 <assignedEntity>

The <assignedEntity> element shall be present, and provides contact and identification information about the <custodian>.

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

The <id> element shall be present, and shall uniquely identify the custodian of the data records.

3.1.3.5.2.7 <addr></addr>

The <addr> element shall be present, and shall provide a postal address for the custodian of the data records.

3.1.3.5.2.8 <telecom></telecom>

At least one <telecom> element shall be present that provides a telephone number to contact the custodian of the data records. A <telecom> element may be present that provides the web service end-point address of the custodian of the data records.

For Public Comment	How might the web service end-point address be used? Is it a good idea to include it, or should we omit this from the profile?

3.1.3.5.2.9 <assignedOrganization> <name></name> </assignedOrganization>

The name of the organization that is the custodian of the data records shall be provided.

3.1.3.5.2.10 <subject2>

The <subject2> element provides the data content requested from the query.

3.1.3.5.2.11 <careProvisionEvent>

The <careProvisionEvent> elements returned by the Care Record Profile Query are compositions based upon the information requested in the query. It is transitory in nature, and does not necessarily coorespond to a single care provision activity stored within the data repository.

3.1.3.5.2.12 <recordTarget>

The <recordTarget> element records information about the patient for whom the Data Repository is returning results.

3.1.3.5.2.13 <patient>

The <patient> element contains information identifying the patient and providing contact information.

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

At least one <id> element shall be present that identifies the patient. This <id> element shall be the same as the value of the <patientId> passed in the query. Other <id> elements may be present.

3.1.3.5.2.15 <addr></addr>

At least one <addr> element shall be present to provide a postal address for the patient. It may have the nullFlavor attribute set to UNK if unknown (e.g., for a repository that contains pseudonomized information), or set to MSK for repositories that may contain the information, but which do not choose to divulge the information (e.g., due to access permissions, et cetera).

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

At least one <telecom> element shall be present to provide a telephone number to contact the patient. It may have the nullFlavor attribute set to UNK if unknown (e.g., for a repository that contains pseudonomized information), or set to MSK for repositories that may contain the information, but which do not choose to divulge the information (e.g., due to access permissions, et cetera). Other <telecom> elements may be present to contain other contact methods, e.g., e-mail. One cannot determine from a <telecom> element with the nullFlavor attribute whether it is supposed to contain a telephone number, e-mail address, URL, or other sort of telecommunciations address. Due to this limitation, the assumption will be made that a <telecom> element with a nullFlavor attribute represents a telephone number that is unavailable.

3.1.3.5.2.17 <statusCode code='normal'/>

The <statusCode> element shall be present, and shall be represented exactly as shown above. This indicates that the *role* of patient is in one of the normal states, e.g., has not been explicitly removed or "nullified".

3.1.3.5.2.18 <patientPerson>

The <patientPerson> element shall be present, and provides further identification information about the patient.

3.1.3.5.2.19 <name></name>

The <name> element shall be present, and normally provides the patient's name. The <name> element may have the nullFlavor attribute set to UNK if unknown (e.g., for a repository that contains pseudonomized information), or set to MSK for repositories that may contain the information, but which do not choose to divulge the information (e.g., due to access permissions, et cetera).

3.1.3.5.2.20 <administrativeGenderCode code=' ' displayName=' ' codeSystem='2.16.840.1.113883.5.1' codeSystemName='AdministrativeGender'/>

The <administrativeGenderCode> element shall be present, and normally provides the patient's gender using the HL7 AdministrativeGender vocabulary. The <administrativeGender> element may have the nullFlavor attribute set to UNK if unknown (e.g., for a repository that contains pseudonomized information), or set to MSK for repositories that may contain the information, but which do not choose to divulge the information (e.g., due to access permissions, et cetera).

3.1.3.5.2.21 <birthTime value=' '/>

The <birthTime> element shall be present, and normally provides the patient's birthTime. The <birthTime> element may have the nullFlavor attribute set to UNK if unknown (e.g., for a repository that contains pseudonomized information), or set to MSK for repositories that may contain the information, but which do not choose to divulge the information (e.g., due to access permissions, et cetera).

3.1.3.5.2.22 <pertinentInformation3> <!-- Domain Content> <pertinentInformation3>

This data element shall be present. It shall contain one of the data elements found in the Data Repository that matches the specified query parameters. The content of this data element varies depending upon the specific transaction, and is futher defined in the section on Domain Content

3.1.3.5.2.23 <parameterList>

The <parameterList> shall be present, and shall contain content that is identical to the <parameterList> passed in the query.

3.1.3.5.3 Expected Actions -- Data Repository

3.1.3.5.3.1 Response to a New Query

The Data Repository, shall:

1. Recieve and validate the query message.
2. Create the response message.

3. Add an ILLEGAL detected issue alert to the response message if the content is invalid (e.g., does not pass schema validation or is otherwise malformed), and immediately return a response indicating the error, and that the query was aborted. Set the text of the alert to the name of the first data element that is not valid. The Data Repository may send more than one ILLEGAL detected issue alert if it is able to determine that multiple data elements in the query are not valid.
4. Add a NAT detected issue alert to the response message if the requesting party is not authorized to perform the query, and immediately return a response indicating the error, and that the query was aborted.
5. Add a VALIDAT detected issue alert to the response message for each of the patientName, patientGenderCode or patientBirthTime fields specified in the query that do not match the values known by the Vital Signs Data Repository Actor. The text value on the alert shall be set to the name of the parameter that does not match (patientName, patientGenderCode or patientBirthTime).
6. Add a BUS detected issue alert to the response message if includeCarePlanAttachment is true, but care plans are not associated with observation values. The text value on the alert shall be set to includeCarePlanAttachment.
7. Add a BUS detected issue alert to the response message if a careProvisionReason value is specified, but the Data Repository cannot query by this field. The text value on the alert shall be set to careProvisionReason.
8. Add a KEY204 detected issue alert to the response message if any of the vocabulary domains are not recognized by the Data Repository. The text value on the alert shall be set to the name of the query parameter that used the unrecognized vocabulary domain.
9. Add a CODE_INVALID detected issue alert to the response message if any of the codes specified are not recognized by the Data Repository. The text value on the alert shall be set to the name of the query parameter that used the unrecognized vocabulary domain.
10. Add a FORMAT detected issue alert to the response message if any date ranges are incorrectly formed (low > high). The text value on the alert shall be set to the name of the query parameter that has the error.
11. Add a ILLEGAL detected issue alert to the response message if the the data repository does not recognize the identity domain used to identify the patient. Set the text value on the alert to patientId.
12. Add a KEY204 detected issue alert to the response message if the the data repository does not know about the patient. Set the text value on the alert to patientId. This is distinct from having nothing to report. If the patient is recognized but there is no data to report, the result returned should simply have no data. However, if information is requested for a patient that isn't known, then the KEY204 alert shall be raised.
13. Add an appropriate detected issue alert if any parameters otherwise not specified by this profile have been provided, but are not supported by the Data Repository.

14. If any issues were detected, Set queryAck/statusCode/@code to aborted, and queryAct/queryResponse/@code to QE, and return the response.
15. Add an ISSUE alert to the response message if at any time during response generation, an application error occurs that prevents further processing. Set the text of the alert to the reason for the application error (e.g., a stack trace or exception message). Set queryAct/statusCode/@code to aborted, and queryAct/responseCode/@code to AE, and return the response.
16. Query for the data requested by the query.
17. If results are found, set queryAct/queryResponse/@code to OK, otherwise set it to NF.
18. Set queryAck/statusCode/@code to deliveredResponse.
19. Add any results to the response up to the maximum number of history statements requested.
20. If all results have been returned, release the query results.

A conforming Data Repository shall support those parameters that have an R in the Repository column from the table above, and need not support those query parameters that have an O in this column.

3.1.3.5.3.2 Response to a Query Continuation

The Data Repository, shall:

1. Recieve and validate the query continuation message.
2. Add an ILLEGAL detected issue alert to the response message if the content is invalid (e.g., does not pass schema validation or is otherwise malformed), and immediately return a response indicating the error, and that the query was aborted. Set the text of the alert to the name of the first data element that is not valid. The Data Repository may send more than one ILLEGAL detected issue alert if it is able to determine that multiple data elements in the continuation are not valid.
3. Create the response message.
4. Add a KEY204 detected issue alert to the response message if the the data repository does not recognize the queryId.
5. Add a VALIDAT detected issue alert to the response message if the query was previously aborted or otherwise terminated.
6. Add an appropriate detected issue alert if any parameters otherwise not specified by this profile have been provided, but are not supported by the Data Repository.
7. If any issues were detected, Set queryAck/statusCode/@code to aborted, and queryAct/queryResponse/@code to QE, and return the response.
8. Add an ISSUE alert to the response message if at any time during response generation, an application error occurs that prevents further processing. Set the text of the alert to the reason for the application error (e.g., a stack trace or exception message). Set queryAct/statusCode/@code to aborted, and queryAct/responseCode/@code to AE, and return the response.

9. Scroll to the result requested in queryContinuation/startResultNumber, querying additional data if necessary.
10. If more results are found, set queryAct/queryResponse/@code to OK, otherwise set it to NF.
11. If no more results are found, ensure that the queryAck/resultTotalQuantity indicates the toal number of results found.
12. Set queryAck/statusCode/@code to deliveredResponse.
13. Add any results to the response up to the maximum number of history statements requested.
14. Return the response message.
15. Release query results if no additional messages on the query are recieved within an application configurable timeout value.

3.1.3.5.3.3 Response to a Query Cancel

The Data Repository, shall:

1. Recieve and validate the query cancelation message.
2. Create the response message.
3. Add an ILLEGAL detected issue alert to the response message if the content is invalid (e.g., does not pass schema validation or is otherwise malformed), and immediately return a response indicating the error, and that the query was aborted. Set the text of the alert to the name of the first data element that is not valid. The Data Repository may send more than one ILLEGAL detected issue alert if it is able to determine that multiple data elements in the cancellation are not valid.
4. Add a KEY204 detected issue alert to the response message if the the data repository does not recognize the queryId.
5. Add an appropriate detected issue alert if any parameters otherwise not specified by this profile have been provided, but are not supported by the Data Repository.
6. Add an ISSUE alert to the response message if at any time during response generation, an application error occurs that prevents further processing. Set the text of the alert to the reason for the application error (e.g., a stack trace or exception message).
7. Set queryAck/statusCode/@code to aborted,
8. If any application errors were detected, set the queryAct/queryResponse/@code to AE, otherwise, if any other issues were detected, set the value to QE, otherwise set it to NF.
9. Return the response message.
10. Release query results.

3.1.3.5.3.4 Raising Alerts

If the content of the request is not valid (e.g., according to the Schema or the rules of this profile), at least on ILLEGAL alert shall be raised indicating the data element that was invalid. A response will be sent indicating that the request was invalid, and no further processing shall be performed.

If the requesting party is not authorized to perform the query, the minimum response shall be sent indicating only that the requested is not authorized to perform the query. In other cases, all possible alerts shall be accumulated before returning a response to the caller.

This enables Clinical Data Consumer actors to send a test query that will enable them to verify the vocabulary and other request parameters that are desired.

An alert is raised by sending a response containing one or more <reasonOf> elements, coded as shown below.

```
<reasonOf>
  <detectedIssueEvent>
    <code code='' displayName='' codeSystem='' codeSystemName=''/>
    <text></text>
    <mitigatedBy>
      <detectedIssueManagement moodCode="RQO">
        <code code='' displayName='' codeSystem='' codeSystemName=''/>
        <text></text>
      </detectedIssueManagement>
    </mitigatedBy>
  </detectedIssueEvent>>
</reasonOf>
```

3.1.3.5.3.5 <reasonOf>

The <reasonOf> element is required to indicate that an alert has occured.

3.1.3.5.3.6 <detectedIssueEvent>

The details of the alert shall be present in the <detectedIssueEvent> element.

3.1.3.5.3.7 <code code=' ' displayName=' ' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActCode'/>

The <code> element shall contain ISSUE or one of its descendants from the HL7 ActCode vocabulary.

3.1.3.5.3.8 <text></text>

If a validation or other business rule error occurred, the erroneous parameter shall be identified in <text> element using the element name, and nothing else should be present. If an application error occured, the <text> element shall contain diagnostic information (e.g., stack trace or exception message).

If the reason for the alert was an unrecognized code (CODE_INVALID), the text element shall contain the name of the erroneous parameter, and may contain a space separated list of OIDs identifying value sets which would be valid.

If the reason for the alert was an unrecognized identifier (KEY204) for the vocabulary used in the careProvisionCode or careProvisionReason element, the text element shall contain the name of the erroneous paramater, and may contain a space separated list of the OIDs for code systems which would be valid.

For Public	There should be a more structured way for the Clinical Data Consumer to negotiate vocabularies with a Data Repository. Should this feature be required

Comment or optional? Can you think of other ways that this capability might be implemented?

3.1.3.5.4 Expected Actions -- Clinical Data Consumer

The clinical data consumer processes the query response data. If the response indicates that more data is available, the clinical data consumer can request additional data using the General Query Activate Query Continue message, indicating which data is being requested.

3.1.3.6 General Query Activate Query Continue

3.1.3.6.1 Trigger Events

The Clinical Data Consumer's need to obtain more information about a patient will trigger the continuation of the query. This cooresponds the the HL7 trigger event:QUQI_TE000003UV01

3.1.3.6.2 Message Semantics

The Query Care Record Event Profile Query cooresponds to the HL7 Interaction QUPC_IN043100UV.

3.1.3.6.3 Expected Actions -- Clinical Data Consumer

Upon completion of all result processing, the clinical data consumer shall send a General Query Query Activate Continue message to obtain additional results.

3.1.3.7 General Query Query Cancel

3.1.3.7.1 Trigger Events

When the Clinical Data Consumer is finished with the query, it shall cancel the query. This cooresponds the the HL7 trigger event:QUQI_TE000003UV01 -- General Query Activate Query Continue

3.1.3.7.2 Message Semantics

The Query Care Record Event Profile Query cooresponds to the HL7 Interaction QUPC_IN043100UV.

3.1.3.8 Domain Content

This section lists the requirements specific to the Query Vital Signs transaction.

Note: Implementors of a Vital Signs Data Repository Actor, or a Clinical Data Consumer Actor shall publish an HL7 Conformance Profile that indicates the vocabularies and code sets that they support for this transaction.

3.1.3.8.1 Get Care Record Profile Query

3.1.3.8.2 careProvisionCode

A Clinical Data Consumer may specify the value COBSCAT from the from the HL7 ActCode vocabulary (2.16.840.1.113883.5.4) domain to obtain all matching observations that coorespond to the LOINC code values from the table in Vital Signs Observation reproduced below. A Clinical Data Consumer may use any of the LOINC code values from this table to obtain any specific vital sign result.

Vital Signs Codes

LOINC	Description	Units	Type
9279-1	RESPIRATION RATE	min or s	RTO
8867 4	HEART BEAT		
2710-2	OXYGEN SATURATION	%	PQ
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]	

A Clinical Data Consumer Actor may make requests using other codes to obtain other common observations, but these are not guaranteed to be available in all cases. For example, a Clinical Data Consumer might use values from the table in Pregnancy Observations.

As a rule of thumb, if it is a measurement that does not require special diagnosic equipment to be performed, or a value that may be reported by a patient that is not indicitive on its own as a medical condition, then it can be considered to be a common observation. Other common observations that may be included are measures such as glucometer readings, date of last menstruation (e.g., as would be used to estimate date of delivery during perinatal care), et cetera. A specific lab result would not be obtained using this transaction, nor would patient risk factors (e.g. ETOH (Alcohol) use), or the presence of any specific problems.

3.1.3.8.3 Get Care Record Profile Response

A Vital Signs Data Repository Actor shall respond to a query request by returning clinical statements that are returned within <pertinentInformation3> data elements. When careProvisionCode is set to COBSCAT from the HL7 ActCode vocabulary domain, the Vital Signs Repository shall respond by returning all matching observations that coorespond to the LOINC code values from the table in Vital Signs Observation. It shall also respond to any of the individual LOINC codes found in that table to return specific kinds of vital signs measurements. The observations returned shall conform the the PCC Vital Signs Observation entry template.

A Vital Signs Data Repository Actor may respond to a query request where the LOINC code matches any individual LOINC code found in the table in the Pregnancy Observations with clinical statements conforming to that entry template.

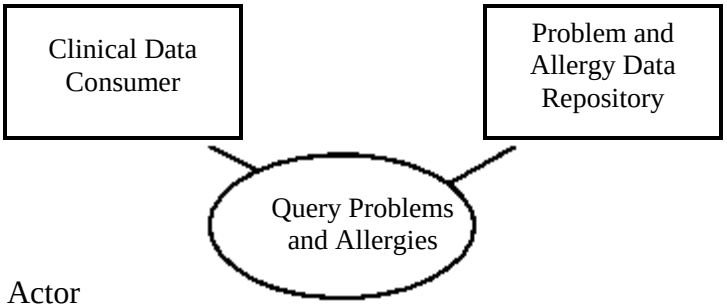
A Vital Signs Data Repository Actor may respond to requests using other LOINC codes to return other common observations. These observations shall conform to the Simple Obervations entry template.

3.1.4 Query Problems and Allergies

This section corresponds to Transaction PCC-2 of the IHE Patient Care Coordination Technical Framework. Transaction Query Problems and Allergies is used by the Clinical Data Consumer and Problem and Allergy Data Repository Actors.

Transaction Query Problems and Allergies uses the same pattern as transaction PCC-1. Therefore, the Referenced Standards and Interaction Diagrams sections of that transaction also serve to document the standards and interactions used in this transaction. Information specific to this transaction is described in futher detail below in the section on Domain Content.

3.1.4.1 Use Case Roles



Actor

Clinical Data Consumer

Role

Requests a list of problems or allergies for a given patient matching a minimal set of selection criteria from the Problem and Allergy Repository.

Actor

Problem and Allergy Data Repository

Role

Returns problems or allergy entries for a given patient matching the selection criteria supplied by the Clinical Data Consumer.

3.1.4.2 Domain Content

This section lists the requirements specific to the Query Problems and Allergies transaction.

Note: Implementors of a Problems and Allergies Data Repository Actor, or a Clinical Data Consumer Actor shall publish an HL7 Conformance Profile that indicates the vocabularies and code sets that they support for this transaction.

3.1.4.2.1 Get Care Record Profile Query

3.1.4.2.1.1 careProvisionCode

A Clinical Data Consumer may specify the following values from the HL7 ActCode vocabulary (2.16.840.1.113883.5.4) to obtain the observations listed in the table below.

Code	Returns	Template Id
MEDCCAT	All problem entries	Problem Entry
ALLGCAT	All allergies	Allergy and Intolerance Entry
CONDLIST	All Concern Entries	Concern Entry
PROBLIST	All Problem Concerns	Problem Concern
INTOLIST	All Allergy Concerns	Allergy and Intolerance Concern
RISKLIST	All Risks[1]	Concern Entry

Note 1: Risks are other concerns that may not be explicitly classified as problem or allergy concerns.

A Clinical Data Consumer Actor may make requests using other codes to obtain information about specific problem, allergy, or risk observations, however, the Problem and Allergy Data Repository Actor need not honor these codes.

One such set of codes that may be used are the problem codes listed in the Problem Entry, and reproduced in the table below.

Code	Description
64572001	Condition

418799008	Symptom
404684003	Finding
409586006	Complaint
248536006	Functional limitation
55607006	Problem
282291009	Diagnosis

Table 2.3-2

Another such set of codes that may be used are from the HL7 ObservationIntoleranceType vocabulary, as used in the Allergy and Intolerance Entry. Additional codes for problems and allergies may be found in SNOMED CT (2.16.840.1.113883.6.96), ICD-9-CM diagnosis codes (2.16.840.1.113883.6.103), MEDCIN (2.16.840.1.113883.6.26), and in other controlled vocabularies.

Note: The code value specified in the query may represent a code found in either the <code> or <value> elements of the <observation> element.

3.1.4.2.1.2 careProvisionReason

When careProvisionCode is set to INTOLIST, or ALLGCAT from the HL7 ActCode domain (see above), or other values specific to allergies and/or intolerances, the Clinical Data Consumer may specify the a code identifying a substance in the <value> element of the <careProvisionReason> element to refine the query to allergies to a particular substance. The <value> element shall contain a code from a controlled vocabulary that describes a substance. The Problem and Allergy Data Repository Actor need not honor these codes.

For Public Comment Is this a correct use of careProvisionReason? If not, how could we query for an allergy to a specific substance? Only SNOMED-CT supports such a statement in a single post-coordinated code, which prevents use of NDC or RxNorm codes to identify the substance. Should we extend the parameterList to support specification of the drug using other codes?

3.1.4.2.2 Get Care Record Profile Response

A Problems and Allergies Data Repository Actor shall respond to a query request by returning clinical statements matching the query parameter returned within <pertinentInformation3> data elements.
The clinical statements that are returned for codes specified in the table above in the section on careProvisionCode shall conform to the template identifiers shown therein.

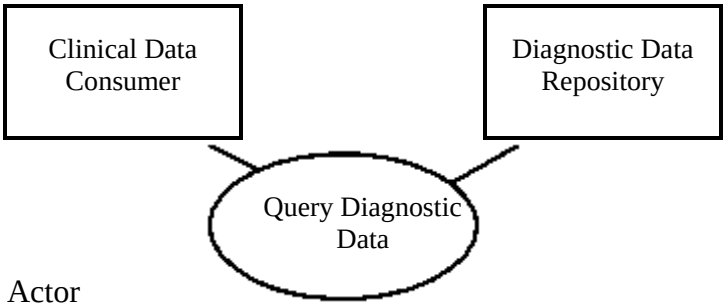
A Problems and Allergies Data Repository Actor may respond to query requests using other codes to return information about specific problem, allergy or risk observations. These observations shall conform to the Problem Entry or Allergy and Intolerance Entry

3.1.5 Query Diagnostic Data

This section corresponds to Transaction PCC-3 of the IHE Patient Care Coordination Technical Framework. Transaction Query Diagnostic Data is used by the Clinical Data Consumer and Diagnostic Data Repository Actors.

Transaction Query Diagnostic Data uses the same pattern as transaction PCC-1. Therefore, the Referenced Standards and Interaction Diagrams sections of that transaction also serve to document the standards and interactions used in this transaction. Information specific to this transaction is described in futher detail below in the section on Domain Content.

3.1.5.1 Use Case Roles



Actor

Clinical Data Consumer

Role

Requests a list of diagnostic results for a given patient matching a minimal set of selection criteria from the Diagnostic Data Repository.

Actor

Diagnostic Data Repository

Role

Returns diagnostic results for a given patient matching the selection criteria supplied by the Clinical Data Consumer.

3.1.5.2 Domain Content

This section lists the requirements specific to the Query Diagnostic Data transaction.

Note: Implementors of a Diagnostic Data Repository Actor, or a Clinical Data Consumer Actor shall publish an HL7 Conformance Profile that indicates the vocabularies

and code sets that they support for this transaction.

Note: Diagnostic results include any observations made using specific diagnostic procedures or equipment, including laboratory, imaging, or assessment scales

3.1.5.2.1 careProvisionCode

A Clinical Data Consumer may specify the following values from the HL7 ActCode vocabulary (2.16.840.1.113883.5.4) to obtain the observations listed in the table below.

Code	Returns	Template Id
LABCAT	All Lab Results	Simple Observations
DICAT	All Imaging Results	Simple Observations

A Clinical Data Consumer Actor may set the <value> element of the <careProvisionCode> element to identify a specific diagnostic result using LOINC, or it may select a class of diagnostic results using the LOINC values specified in the XD*-Lab profile.

A Diagnostic Data Repository Actor shall respond with <observation> elements cooresponding the specified results. The results shall be returned in the form of clinical statements that conform to the Simple Observation template.

3.1.5.2.2 careProvisionReason

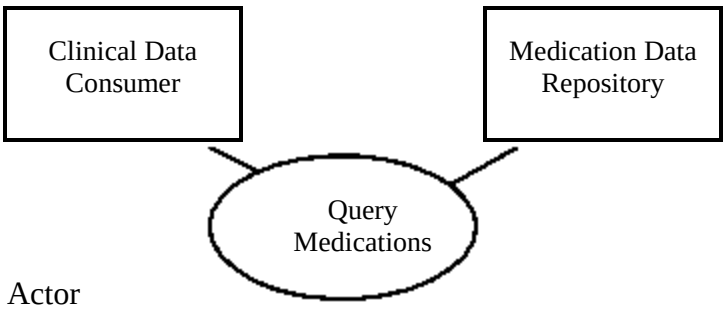
The <value> element of the <careProvisionReason> element may contain a value identifying a specific problem that was the reason for obtaining the result. A Diagnostic Data Repository Actor that chooses to honor this query parameter shall return only those results that were for the indicated reason. Should the Diagnostic Data Repository Actor not support the use of the <careProvisionReason> element, it shall indicate this by raising the appropriate alert as decribed in the expected actions recorded in PCC-1.

3.1.6 Query Medications

This section corresponds to Transaction PCC-3 of the IHE Patient Care Coordination Technical Framework. Transaction Query Medications is used by the Clinical Data Consumer and Medication Data Repository Actors.

Transaction Query Medications uses the same pattern as transaction PCC-1. Therefore, the Referenced Standards and Interaction Diagrams sections also serve to document the standards and interactions used in this transaction. Information specific to this transaction is described in futher detail below in the section on Domain Content.

3.1.6.1 Use Case Roles



Actor

Clinical Data Consumer

Role

Requests Requests a list of medications for a given patient matching a minimal set of selection criteria from the Medication Data Repository.

Actor

Medication Data Repository

Role

Returns medications for a given patient matching the selection criteria supplied by the Clinical Data Consumer.

3.1.6.2 Domain Content

This section lists the requirements specific to the Query Medications transaction.

Note: Implementors of a Medications Data Repository Actor, or a Clinical Data Consumer Actor shall publish an HL7 Conformance Profile that indicates the vocabularies and code sets that they support for this transaction.

3.1.6.2.1 Get Care Record Profile Query

3.1.6.2.1.1 careProvisionCode

A Clinical Data Consumer may specify the following values from the HL7 ActCode vocabulary (2.16.840.1.113883.5.4) to obtain the observations listed in the table below.

Code	Returns	Template Id
RXCAT	All Medications	Medications
MEDLIST	All Medications	Medications

CURMEDLIST	All active medications	Medications
DISCHMEDLIST	Discharge Medications	Medications
HISTMEDLIST	All Historical Medications	Medications

A Clinical Data Consumer Actor may make requests using other codes to obtain information about specific medications, however, the Medication Data Repository Actor need not honor these codes.

Codes for medications may be found in RxNorm (2.16.840.1.113883.6.88), NDC (2.16.840.1.113883.6.69) and SNOMED CT (2.16.840.1.113883.6.96).

Note: The code value specified in the query may represent a code found in <code> of the <substanceAdministration>, or any of its components, and thus may identify an act or a substance

3.1.6.2.1.2 careProvisionReason

The <value> element of the <careProvisionReason> element may contain a value identifying a specific problem that was the reason for the medication.

A Medication Data Repository Actor that chooses to honor this query parameter shall return only those results that were for the indicated reason. Should the Diagnostic Data Repository Actor not support the use of the <careProvisionReason> element, it shall indicate this by raising the appropriate alert as decribed in the expected actions recorded in PCC-1.

3.1.6.2.2 Get Care Record Profile Response

A Medication Data Repository Actor shall respond to a query request by returning clinical statements matching the query parameter returned within <pertinentInformation3> data elements.

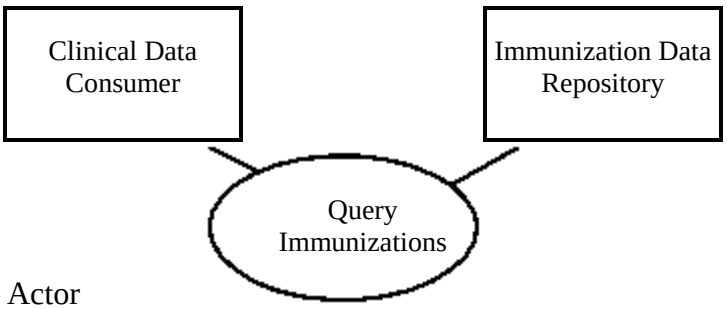
The clinical statements that are returned for by this transaction shall conform to the Medications template.

3.1.7 Query Immunizations

This section corresponds to Transaction PCC-5 of the IHE Patient Care Coordination Technical Framework. Transaction Query Immunizations is used by the Clinical Data Consumer and Immunization Data Repository Actors.

Transaction Query Immunizations uses the same pattern as transaction PCC-1. Therefore, the Referenced Standards and Interaction Diagrams sections of that transaction also serve to document the standards and interactions used in this transaction. Information specific to this transaction is described in futher detail below in the section on Domain Content.

3.1.7.1 Use Case Roles



Actor

Clinical Data Consumer

Role

Requests a list of immunizations for a given patient matching a minimal set of selection criteria from the Immunization Data Repository.

Actor

Immunization Data Repository

Role

Returns immunizations for a given patient matching the selection criteria supplied by the Clinical Data Consumer.

3.1.7.2 Domain Content

This section lists the requirements specific to the Query Immunizations transaction.

Note: Implementors of a Immunizations Data Repository Actor, or a Clinical Data Consumer Actor shall publish an HL7 Conformance Profile that indicates the vocabularies and code sets that they support for this transaction.

3.1.7.2.1 Get Care Record Profile Query

3.1.7.2.2 careProvisionCode

A Clinical Data Consumer may specify the following values from the HL7 ActCode vocabulary (2.16.840.1.113883.5.4) to obtain the immunzation records listed in the table below.

Code	Returns	Template Id
IMMUCAT	All Immunizations	Immunizations

A Clinical Data Consumer Actor may make requests using other codes to obtain information about specific Immunizations, however, the Immunizations Data Repository Actor need not honor these codes.
Codes for Immunizations may be found in RxNorm (2.16.840.1.113883.6.88), CVX (2.16.840.1.113883.6.59) and SNOMED CT (2.16.840.1.113883.6.96), and elsewhere.

Note: The code value specified in the query may represent a code found in <code> of the <substanceAdministration>, or any of its components, and thus may identify an act or a substance

3.1.7.2.2.1 careProvisionReason

The <value> element of the <careProvisionReason> element may contain a value identifying a the reason for the immunization.
An Immunization Data Repository Actor that chooses to honor this query parameter shall return only those results that were for the indicated reason. Should the Diagnostic Data Repository Actor not support the use of the <careProvisionReason> element, it shall indicate this by raising the appropriate alert as decribed in the expected actions recorded in PCC-1.

3.1.7.2.3 Get Care Record Profile Response

An Immunzation Data Repository Actor shall respond to a query request by returning clinical statements matching the query parameter returned within <pertinentInformation3> data elements.
The clinical statements that are returned for by this transaction shall conform to the Immunzations template.

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 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.

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.

4.1.1.1 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.

4.1.1.1.1 XDSDocumentEntry Metadata

XDSDocumentEntry Attribute	Optional?	Source Type	Source/ Value
authorSpecialty This metadata element should be based on a detailed defined classification system for healthcare providers such as those found in SNOMED-CT, or the HIPPA Healthcare Provider Taxonomy.	R2	DS	
authorInstitution	R2	SA	/ClinicalDocument/author /assignedAuthor /representedOrganization/name
authorPerson	R2	SAT	$person <= /ClinicalDocument/autho

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,"^", $person/assignedPerson/name/middle,"^", $person/assignedPerson/name/suffix,"^", $person/assignedPerson/name/prefix,"^", $person/assignedPerson/name/degree,"^^&", $person/id/@root,"&ISO")`			
classCode 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).	R	CADT	Must be consistent with /ClinicalDoc
classCodeDisplayName DisplayName of the classCode derived. Derived from a mapping of /ClinicalDocument/code/@code to the appropriate Display Name based on the Type of Service.	R	CADT	Must be Consitent with /ClinicalDoc
confidentialityCode 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.	R	CADT	/ClinicalDocument/confidentialityCo -AND/OR- /ClinicalDocument/authorization/ consent[templateId/@root='1.3.6.1.4 /code/@code
creationTime	R	SA	/ClinicalDocument/effectiveTime
eventCodeList These values express a collection of keywords that may be relevant to the consumer of the documents in the registry.	O	CADT	
eventCodeDisplayNameList These are the display names for the collection	R (if event	CADT	

of keywords described above.	Code is valued)		
formatCode The format code shall be the OID associated with the template identifier used to identify the content module that the document conforms to. See PCC TF-2:5.1.2 for a list of values that can be used as format codes.	R	FM	/ClinicalDocument/templateId
healthcareFacilityTypeCode A fixed value assigned to the Document Source and configured form a set of Affinity Domain defined values.	R	O	Must be concistent with /clinicalDoc
healthcareFacility TypeCodeDisplay Name	R	O	Must be concistent with /clinicalDoc
intendedRecipient The intendedRecipient can be formatted using the following XPath expression, where **$person** in the expression below represents the intendedRecipient. `concat($person/id/@extension,"^", $person/assignedPerson/name/family,"^", $person/assignedPerson/name/given,"^", $person/assignedPerson/name/middle,"^", $person/assignedPerson/name/suffix,"^", $person/assignedPerson/name/prefix,"^", $person/assignedPerson/name/degree,"^^&", $person/id/@root,"&ISO")`	R2	SAT	$person <= /ClinicalDocument/inten
languageCode	R	SA	/ClinicalDocument/languageCode
legalAuthenticator The legalAuthenticator can be formatted using the following XPath expression, where **$person** in the expression below represents the legalAuthenticator. `concat( $person/id/@extension,"^", $person/assignedPerson/name/family,"^", $person/assignedPerson/name/given,"^", $person/assignedPerson/name/middle,"^", $person/assignedPerson/name/suffix,"^", $person/assignedPerson/name/prefix,"^", $person/assignedPerson/name/degree,"^^&", $person/id/@root,"&ISO"`	O	SAT	$person <= /ClinicalDocument/ legalAuthenticator

) 			
mimeType	R	FM	text/xml
parentDocumentRelationship	R (when applicable)	SA	/ClinicalDocument/relatedDocument
parentDocumentId The parentDocumentId can be formatted using the following XPath expression, where **$docID** in the expression below represents the identifier. `concat($docID/@root,"^", $docID/@extension)`	R (when parent Document Relationship is present)	SAT	$docID <= /ClinicalDocument/ relatedDocument/parentDocument/ id
patientId The patientId can be formatted using the following XPath expression, where **$patID** in the expression below represents the appropriate identifier. `concat($patID/@extension,"^^^&", $patID/@root, "&ISO")`	R	SAT	$patID <= /ClinicalDocument/record patientRole/id
practiceSettingCode 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.	R	CAD	
practiceSettingCodeDisplayName This element shall contain the display names associated with the codes described above.	R	CAD	
serviceStartTime	R2	SA	/ClinicalDocument/documentationOf serviceEvent/effectiveTime/low/ @value
serviceStopTime	R2	SA	/ClinicalDocument/documentationOf serviceEvent/effectiveTime/high/ @value
sourcePatientId	R	DS	

sourcePatientInfo	R	DS	
Title	O	SA	/ClinicalDocument/title
typeCode	R	SA	/ClinicalDocument/code/@code
typeCodeDisplay Name	R	SA	/ClinicalDocument/code/@displayNa
uniqueId The uniqueId can be formatted using the following XPath expression, where **$docID** in the expression below represents the identifier. `concat($docID/@root,"^", $docID/@extension)`	R	SAT	$docID <= /ClinicalDocument/id

4.1.1.1.2 XDSSubmissionSet Metadata

XDSSubmissionSet Attribute	Optional?	Source Type	Source/ Value
authorDepartment This metadata element should be based on a detailed defined classification system for healthcare providers such as those found in SNOMED-CT, or the HIPPA Healthcare Provider Taxonomy.	R2	CAD	
authorInstitution	R2	SA	/ClinicalDocument/author/assignedAuthor /representedOrganization/name
authorPerson 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,"^", $person/assignedPerson/name/middle,"^", $person/assignedPerson/name/suffix,"^", $person/assignedPerson/name/prefix,"^", $person/assignedPerson/name/degree,"^^&", $person/id/@root,"&ISO")`	R2	SAT	$person <= /ClinicalDocument/author

comments	R2		string(//section[@code='42349-1']/text) This is the reason for referral if present.
contentTypeCode	R	CAD	
contentTypeCodeDisplayName	R	CAD	
patientId 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")`	R	SAT	$patID <= /ClinicalDocument/recordTarget /patientRole/id
sourceId	R	DS	
submissionTime	R	DS	
uniqueId	R		

4.1.1.1.3 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.

4.1.1.1.4 Use of XDS Folders

No specific requirements identified.

4.1.1.1.5 Configuration

This Medical Summary Content Profile requires that Content Creators and Content Consumers using these documents be configured 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 medication summaries (See PCC TF-2: 5.4.1.1.2.1).

4.1.1.2 Consent Binding to XDS

The consent binding to XDS is the same as the Medical Document Binding to XDS, XDM and XDR, with the exception of the following XDSDocumentEntry metadata fields in the table below. Changes are **highlighted**.

XDSDocumentEntry Attribute	Optional?	Source Type	Source/ Value
authorPerson The author is a required element, and is the person issuing the consent (e.g. the patient, guardian, or legal guardian).	**R**		
classCode This attributes are fixed to the value "Consent" by this binding.	R	**FAD**	**Consent**
classCodeDisplayName This attributes are fixed to the value "Consent" by this binding.	R	**FAD**	**Consent**
confidentialityCode The binding has not changed from XDS, however, note that a consent document may also be assigned a confidentialityCode, because the content of the document may be restricted to users in specific functional roles due to the possibly sensitive nature of the content of the consent document.	R		
eventCodeList The eventCodeList shall be populated using the codes identifying the policies that have been consented to within the document.	**R**	**CADT**	**/ClinicalDocument/documentationOf/ serviceEvent[templateId/@root='1.3.6.1.4.1.19376.1.5.**
eventCodeDisplayNameList The		**CADT**	**/ClinicalDocument/documentationOf/**

eventCodeDisplayNameList shall be populated using the display names for those policies.	**R**		**serviceEvent[templateId/@root='1.3.6.1.4.1.19376.1.5.**
legalAuthenticator The legalAuthenticator of a consent document shall be present if available, If the Patient Privacy Consent is digitally signed than the legalAuthenticator shall be one of the persons whose digital signature attests to the content of the consent document. If the consent is not digitally signed then the legalAuthenticator shall be the representative of the Affinity Domain that is attesting that the patient has consented.	**R2**	SAT	$person <= /ClinicalDocument/legalAuthenticator
serviceStartTime The serviceStartTime shall be present and indicates the effective start time of the consent.	**R**	SA	/ClinicalDocument/documentationOf/serviceEvent/effectiveTime/low/@value
serviceStopTime The serviceStopTime may be present, and if it is present, indicates the effective time at which the consent is no longer effective. If it is not present, the time at which the consent is no longer effective is controlled by XDS Affinity Domain policy.	R2	SA	/ClinicalDocument/documentationOf/serviceEvent/effectiveTime/high/@value

5 IHE Content Specifications

5.1 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	International Classification of

	codes)	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

Table 5.1-1

5.1.1 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.

5.1.2 IHERoleCode Vocabulary

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.

Table 5.1-2

5.2 Conventions

Various tables used in this section will further constrain the content. Within this volume, the follow conventions are used.

R

A "Required" data element is one that shall always be provided. If there is information available, the data element must be present. If there is no information available, or it cannot be transmitted, the data element must contain a value indicating the reason for omission of the data. (See PCC TF-2: 5.3.4.2 for a list of appropriate statements).

R2

A "Required if data present" data element is one that shall be provided when a value exists. If the information cannot be transmitted, the data element shall contain a value indicating the reason for omission of the data. If no such information is available to the creator or if such information is not available in a well identified manner (e.g. buried in a free form narrative that contains additional information relevant to other sections) or if the creator requires that information be absent, the R2 section shall be entirely absent. (See section PCC TF-2: 5.3.4.2 for a list of appropriate statements).

O

An optional data element is one that may be provided, irrespective of whether the information is available or not. If the implementation elects to support this optional section, then its support shall meet the requirement set forth for the "Required if data present" or R2.

C

A conditional data element is one that is required, required if known or optional depending upon other conditions. These will have further notes explaining when the data element is required, et cetera.

Note: The definitions of R, R2, and O differ slightly from other IHE profiles. This is due in part to the fact that local regulations and policies may in fact prohibit the transmission of certain information, and that a human decision to transmit the information may be required in many cases.

5.3 Folder Content Modules

This section contains modules that describe the content requirements of XDS Folders.

5.3.1.1.1 EDER Folder Specification

This is a content profile for the EDER folder. The EDER folder is a container for all documents created as a result of an ED encounter. These documents include, but are not limited to those described below. In the case of triage and nursing documentation, it is recognized that Triage Notes and ongoing ED Nursing Notes may or may not be documented the using the same form or EHR system. Therefore, these notes may either be sent separately, or in a Composite Triage and ED Nursing note.

Document Name	Opt	Template ID
Triage Note If this document is sent, then an ED Nursing note is also required and a Composite Triage and ED Nursing Note may not be sent.	C	1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
ED Nursing Note If this document is sent, then a Triage Note is also required and a Composite Triage and ED Nursing Note may not be sent.	C	1.3.6.1.4.1.19376.1.5.3.1.1.13.1.2
Composite Triage and ED Nursing Note If this note is sent, then neither the Triage Note, nor the ED Nursing note may be sent.	C	1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
ED Physician Note	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
Prehospital Care Report This is on the PCC Roadmap for 2008	R2	?
Diagnostic Imaging Reports Diagnostic Imaging Reports shall be shared using XDS-I	R2	?
Lab Reports Laboratory reports shall be shared using XD*-LAB	R2	?
Consultations	R2	
Transfer Summary	R2	
Summary of Death	R2	

For Public Comment	The question has been raised about what do R, R2 and O mean in the context of folders.

5.4 CDA Release 2.0 Content Modules

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

5.4.1 CDA Document Content Modules

5.4.1.1 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.

5.4.1.1.1 Standards

CDAR2 HL7 CDA Release 2.0

CRS HL7 Care Record Summary

XMLXSL Associating Style Sheets with XML documents

5.4.1.1.2 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='20070619012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
  <languageCode code='en-US'/>
    :
  <component><structuredBody>

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

Figure 5.4-1 Sample Medical Documents Document

```
<!-- Verify the document type code -->
<assert test='code[@code = "{{{LOINC}}}"]'>
  Error: The document type code of a Medical Documents must be {{{LOINC}}}
</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>
```

5.4.1.1.3 Specification

The constraints for encoding of the CDA Header (Level 1), and codes for sections within the section body follow all Level 1 constraints found in the HL7 Care Record Summary Implementation Guide, with the exception that the constraints on the type of document and its narrative content are not adopted by this content profile.

5.4.1.1.4 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 must 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 must 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 need only 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.

5.4.1.1.5 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 (NKDA)

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.

5.4.1.2 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.

5.4.1.2.1 Standards

CDAR2 HL7 CDA Release 2.0

CRS HL7 Care Record Summary

5.4.1.2.2 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. 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='20070619012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
  <languageCode code='en-US'/>
     :
  <component><structuredBody>

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

Figure 5.4-2 Sample Medical Summary Document

```
   <!-- Verify the document type code -->
   <assert test='code[@code = "{{{LOINC}}}"]'>
     Error: The document type code of a Medical Summary must be {{{LOINC}}}
   </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>
```

5.4.1.2.3 Document Specification

A medical summary is a type of medical document, and incorporates the constraints defined for Medical Documents(1.3.6.1.4.1.19376.1.5.3.1.1.1) .
The medical summary further constrains CDA Release 2.0 by adopting all Level 1 and Level 2 constraints of the HL7 Care Record Summary.

5.4.1.3 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/XDS-MS#Use_Case_1:_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(1.3.6.1.4.1.19376.1.5.3.1.1.2) 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.

5.4.1.3.1 Format Code

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

5.4.1.3.2 Standards

CDAR2 HL7 CDA Release 2.0

CRS HL7 Care Record Summary

CCD ASTM/HL7 Continuity of Care Document

5.4.1.3.3 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 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[@roleCode='HLD']
Data needed for state and local referral forms, if different than above	Optional Sections	section

5.4.1.3.4 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 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	

5.4.1.3.5 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='1.3.6.1.4.1.19376.1.5.3.1.1.2'/>
  <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='20070619012005'/>
  <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 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>


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

Figure 5.4-3 Sample Referral Summary Document

5.4.1.3.6 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.3'>
 <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='../cda:ClinicalDocument'>
     Error: The Referral Summary 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 Referral Summary is not present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='code[@code = "{{{LOINC}}}"]'>
     Error: The document type code of a Referral Summary must be {{{LOINC}}}
   </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>
   <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: A Referral Summary must contain Reason for Referral.
     See http://www.ihe.net/index.php/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: A Referral Summary must contain History Present Illness.
     See http://www.ihe.net/index.php/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: A Referral Summary must contain Active Problems.
     See http://www.ihe.net/index.php/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: A Referral Summary must contain Current Meds.
     See http://www.ihe.net/index.php/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: A Referral Summary must contain Allergies.
     See http://www.ihe.net/index.php/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: A Referral Summary should contain Resolved Problems.
     See http://www.ihe.net/index.php/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: A Referral Summary should contain List of Surgeries.
     See http://www.ihe.net/index.php/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: A Referral Summary should contain Immunizations.
     See http://www.ihe.net/index.php/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: A Referral Summary should contain Family History.
     See http://www.ihe.net/index.php/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: A Referral Summary should contain Social History.
     See http://www.ihe.net/index.php/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 does not contain Pertinent Review of Systems.
     See http://www.ihe.net/index.php/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: A Referral Summary should contain Vital Signs.
      See http://www.ihe.net/index.php/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: A Referral Summary should contain Physical Exam.
      See http://www.ihe.net/index.php/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: A Referral Summary should contain Relevant Diagnostic Surgical Procedures / Clinical
Reports and Relevant Diagnostic Test and Reports.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.3
      (Lab, Imaging, EKG's, etc.) including links.
    </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: A Referral Summary should contain Plan of Care (new meds, labs, or x-rays ordered).
      See http://www.ihe.net/index.php/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: A Referral Summary should contain Advance Directives.
      See http://www.ihe.net/index.php/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: A Referral Summary must contain Patient Administrative Identifiers.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.3
      Handled by the Medical Documents Content Profile by reference to constraints in HL7 CRS.
    </assert>
    <assert test='.//cda:templateId[@root = ""]'>
      <!-- Alert on any missing required if known elements -->
      Warning: A Referral Summary should contain Pertinent Insurance Information.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.3
      Refer to Appropriate Payers Section -- TBD
    </assert>
    <assert test='.//cda:templateId[@root = ""]'>
      <!-- Alert on any missing required if known elements -->
      Warning: A Referral Summary should contain Data needed for state and local referral forms, if
different than above.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.3
      These are handed by including additional sections within the summary.
    </assert>
  </rule>
</pattern>
```

5.4.1.4 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. 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 found in section 5.4.1.2 above.

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.

5.4.1.4.1 Format Code

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

5.4.1.4.2 Standards

CDAR2 HL7 CDA Release 2.0

CRS HL7 Care Record Summary

CCD ASTM/HL7 Continuity of Care Document

5.4.1.4.3 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	Studies and Reports	HOSPITAL DISCHARGE STUDIES

(including links)		
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[@roleCode='HLD']

5.4.1.4.4 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

5.4.1.4.5 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='1.3.6.1.4.1.19376.1.5.3.1.1.2'/>
  <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='20070619012005'/>
  <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>


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

Figure 5.4-4 Sample Discharge Summary Document

5.4.1.4.6 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.4'>
 <rule context='*[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='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='code[@code = "{{{LOINC}}}"]'>
     Error: The document type code of a Discharge Summary must be {{{LOINC}}}
   </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>
   <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: A Discharge Summary must contain Active Problems.
     See http://www.ihe.net/index.php/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: A Discharge Summary must contain Resolved Problems.
     See http://www.ihe.net/index.php/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: A Discharge Summary must contain Discharge Diagnosis.
     See http://www.ihe.net/index.php/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: A Discharge Summary must contain Admitting Diagnosis.
     See http://www.ihe.net/index.php/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: A Discharge Summary should contain Selected Meds Administered.
     See http://www.ihe.net/index.php/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: A Discharge Summary must contain Discharge Meds.
     See http://www.ihe.net/index.php/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: A Discharge Summary should contain Admission Medications.
     See http://www.ihe.net/index.php/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: A Discharge Summary must contain Allergies.
     See http://www.ihe.net/index.php/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: A Discharge Summary must contain Hospital Course.
     See http://www.ihe.net/index.php/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 does not contain Advance Directives.
     See http://www.ihe.net/index.php/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: A Discharge Summary should contain History of Present Illness.
     See http://www.ihe.net/index.php/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 does not contain Functional Status.
      See http://www.ihe.net/index.php/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 does not contain Review of Systems.
      See http://www.ihe.net/index.php/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 does not contain Physical Examination.
      See http://www.ihe.net/index.php/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 does not contain Vital Signs.
      See http://www.ihe.net/index.php/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 does not contain Discharge Procedures Tests, Reports.
      See http://www.ihe.net/index.php/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: A Discharge Summary must contain Plan of Care.
      See http://www.ihe.net/index.php/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 does not contain Discharge Diet.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.4
    </assert>
  </rule>
</pattern>
```

5.4.1.5 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 found in PCC TF-2: 5.4.1.2 Medical Summary Content. 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.

5.4.1.5.1 Format Code

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

5.4.1.5.2 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

5.4.1.5.3 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/genderCode	Demographic Information
Date of Birth	Patient	patient/dateOfBirth	Demographic Information
Marital Status	Patient	patient/martitalStatusCode	
Race	Patient	patient/raceCode	
Ethnicity	Patient	patient/ethnicityCode	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	

5.4.1.5.4 Specification

Data Element Name	Opt	Template ID
Personal Information See Personal Information	R	
Name See Personal Information	R	
Address See Personal Information	R2	
Contact Information See Personal Information	R2	
Personal Identification Information See Personal Information	R2	
Gender See Personal Information	R	
Date of Birth See Personal Information	R2	
Marital Status See Personal Information	R2	
Race See Personal Information	O	
Ethnicity See Personal Information	O	
(Religious Affiliation[2]) See Personal Information	O	
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

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

5.4.1.5.5 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='1.3.6.1.4.1.19376.1.5.3.1.1.2'/>
  <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='20070619012005'/>
  <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='1.3.6.1.4.1.19376.1.5.3.1.3.8'/>
        <!-- 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>


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

Figure 5.4-5 Sample PHR Extract Document

5.4.1.5.6 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5'>
 <rule context='*[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='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='code[@code = "34133-9"]'>
     Error: The document type code of a PHR Extract must be 34133-9
   </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>
   <assert test='.//cda:templateId[@root = ""]'>
     <!-- Verify that all required data elements are present -->
     Error: A PHR Extract must contain Personal Information.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5
     See Personal Information
   </assert>
   <assert test='.//cda:templateId[@root = ""]'>
     <!-- Verify that all required data elements are present -->
     Error: A PHR Extract must contain Name.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5
     See Personal Information
   </assert>
   <assert test='.//cda:templateId[@root = ""]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A PHR Extract should contain Address.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5
     See Personal Information
   </assert>
   <assert test='.//cda:templateId[@root = ""]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A PHR Extract should contain Contact Information.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5
     See Personal Information
   </assert>
   <assert test='.//cda:templateId[@root = ""]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A PHR Extract should contain Personal Identification Information.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5
     See Personal Information
   </assert>
   <assert test='.//cda:templateId[@root = ""]'>
     <!-- Verify that all required data elements are present -->
     Error: A PHR Extract must contain Gender.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5
     See Personal Information
   </assert>
   <assert test='.//cda:templateId[@root = ""]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A PHR Extract should contain Date of Birth.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5
     See Personal Information
   </assert>
   <assert test='.//cda:templateId[@root = ""]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A PHR Extract should contain Marital Status.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5
     See Personal Information
   </assert>
   <assert test='.//cda:templateId[@root = ""]'>
     <-- Note any missing optional elements -->
     Note: This PHR Extract does not contain Race.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5
     See Personal Information
   </assert>
   <assert test='.//cda:templateId[@root = ""]'>
     <-- Note any missing optional elements -->
     Note: This PHR Extract does not contain Ethnicity.
```



```
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5
      See Personal Information
    </assert>
    <assert test='.//cda:templateId[@root = ""]'>
      <-- Note any missing optional elements -->
      Note: This PHR Extract does not contain (Religious Affiliation[2]).
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5
      See Personal Information
    </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: A PHR Extract should contain Languages Spoken.
      See http://www.ihe.net/index.php/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 does not contain Employer and School Contacts.
      See http://www.ihe.net/index.php/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 does not contain Hazardous Working Conditions.
      See http://www.ihe.net/index.php/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: A PHR Extract should contain Patient Contacts.
      See http://www.ihe.net/index.php/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: A PHR Extract must contain Healthcare Providers.
      See http://www.ihe.net/index.php/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: A PHR Extract should contain Insurance Providers.
      See http://www.ihe.net/index.php/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: A PHR Extract should contain Pharamacy.
      See http://www.ihe.net/index.php/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: A PHR Extract should contain Legal Documents and Medical Directives.
      See http://www.ihe.net/index.php/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: A PHR Extract must contain Allergies and Drug Sensitivities.
      See http://www.ihe.net/index.php/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: A PHR Extract must contain Conditions.
      See http://www.ihe.net/index.php/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: A PHR Extract must contain Conditions (cont).
      See http://www.ihe.net/index.php/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: A PHR Extract should contain Surgeries.
      See http://www.ihe.net/index.php/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: A PHR Extract must contain Medications – Prescription and Non-Prescription.
      See http://www.ihe.net/index.php/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: A PHR Extract should contain Immunizations.
```



```
      See http://www.ihe.net/index.php/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 does not contain Doctor Visits / Last Physical or Checkup.
      See http://www.ihe.net/index.php/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 does not contain Hospitalizations.
      See http://www.ihe.net/index.php/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 does not contain Other Healthcare Visits.
      See http://www.ihe.net/index.php/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 does not contain Clinical Tests / Blood Type.
      See http://www.ihe.net/index.php/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 does not contain Pregnancies.
      See http://www.ihe.net/index.php/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: A PHR Extract should contain Medical Devices.
      See http://www.ihe.net/index.php/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 does not contain Family Member History.
      See http://www.ihe.net/index.php/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 does not contain Foreign Travel.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5
    </assert>
  </rule>
</pattern>
```

5.4.1.5.7 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.

5.4.1.6 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.

5.4.1.6.1 Format Code

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

5.4.1.6.2 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='20070619012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
  <languageCode code='en-US'/>
     :
  <component><structuredBody>

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

Figure 5.4-6 Sample PHR Update Document

```
   <!-- Verify the document type code -->
   <assert test='code[@code = "{{{LOINC}}}"]'>
     Error: The document type code of a PHR Update must be {{{LOINC}}}
   </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>
```

5.4.1.6.3 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.

5.4.1.6.4 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.

5.4.1.6.5 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.

5.4.1.6.6 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.

5.4.1.6.7 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

5.4.1.6.8 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.

5.4.1.6.9 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 as described in PCC TF-2: 5.4.2.8 below.

5.4.1.7 Consent to Share Information Specification 1.3.6.1.4.1.19376.1.5.3.1.1.7

Consents to share information are documents that contain both a human and machine readable description of how a patient has chosen to share their information.

5.4.1.7.1 Format Code

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

5.4.1.7.2 Standards

CDAR2 HL7 CDA Release 2.0

XDS-SD Scanned Documents

5.4.1.7.3 Specification

Data Element Name	Opt	Template ID
Consent Service Event At least one, an possible more than one consent can be provided within the document.	R	1.3.6.1.4.1.19376.1.5.3.1.2.6
Authorization Consents may also be protected under a sharing policicty.	O	1.3.6.1.4.1.19376.1.5.3.1.2.5

5.4.1.7.4 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='1.3.6.1.4.1.19376.1.5.3.1.1.7'/>
  <id root=' ' extension=' '/>
  <code code=' ' displayName=' '
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Consent to Share Information</title>
  <effectiveTime value='20070619012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
  <languageCode code='en-US'/>
    :
  <component><structuredBody>

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

Figure 5.4-7 Sample Consent to Share Information Document

5.4.1.7.5 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.7'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.7"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The Consent to Share Information can only be used on Clinical Documents.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.1"]'>
     Error: The parent template identifier for Consent to Share Information is not present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='code[@code = "{{{LOINC}}}"]'>
     Error: The document type code of a Consent to Share Information must be {{{LOINC}}}
   </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>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.2.6"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Consent to Share Information must contain Consent Service Event.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.7
     At least one, an possible more than one consent can be provided within the document.
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.2.5"]'>
     <-- Note any missing optional elements -->
     Note: This Consent to Share Information does not contain Authorization.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.7
     Consents may also be protected under a sharing policity.
   </assert>
 </rule>
</pattern>
```

5.4.1.7.6 Constraints

A consent shall contain a text description of what the patient consented to, a list of codes indicating the policy(s) agreed to, a time range indicating the effective time of the consent, and shall contain a signature signifying the patient agreement to those policy(s) stated in the text description. Finally, consents may be attested to using an electronic digital signature, conforming to the ITI Digital Signature Profile.

The text description and signature may appear as a scanned image. When the consent contains a scanned image, it shall also conform to the constraints of the ITI Scanned Document profile.

A consent shall have one or more <serviceEvent> elements in the header identifying the policies authorized by the document (see Section 4.2.3.4 of CDAR2). Each <serviceEvent> element indicates informed consent to one and only one XDS Affinity Domain policy. More than one policy may be agreed to within a given consent document.

Consent documents should be attested to by either the patient and/or legal guardian, or a third party assigned by the XDS Affinity Domain or its member organizations. The attestation, if present, should be performed using the ITI Digital Signature profile. The signer may be the patient, or a third party.

5.4.1.8 Preprocedure History and Physical Specification 1.3.6.1.4.1.19376.1.5.3.1.1.9

A Pre-procedure History and Physical is a type of medical document, and incorporates the constraints defined for Medical Documents(1.3.6.1.4.1.19376.1.5.3.1.1.1) .

This use case is described fully in in the PPHP Profile described in PCC TF-1. Briefly, this use case involves a sequence of events leading up to the patient's admission to the operating room in a surgical center. Included in these events is the creation and communication of the pre-procedure history and physical document required by quality review organizations prior to most surgeries. 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 under the column "Use Case Documentation Section??.

Using this information from the use case, the following mappings were made to existing standards and implementation guides. As illustrated, there is quite a bit of overlap between sections in this integration profile and in sections specified in the HL7 Care Record Summary CDA implementation guide.

5.4.1.8.1 Format Code

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

5.4.1.8.2 Standards

CDAR2 HL7 CDA Release 2.0

CRS HL7 Care Record Summary

CCD ASTM/HL7 Continuity of Care Document

5.4.1.8.3 Data Element Index

Data Element Requirements	Sections in HL7 CDA-R2/	LOINC Descriptions
Proposed Procedure: (coded procedure)		PROCEDURE
Expected Blood Loss		OPERATIVE NOTE ESTIMATED BLOOD LOSS
Proposed Anesthesia		OPERATIVE NOTE ANESTHESIA
Reason for Procedure: (coded diagnosis)		OPERATIVE NOTE INDICATIONS
HPI—(free text leading up to procedure)	History of Present Illness	HISTORY OF PRESENT ILLNESS
Current Problem List	Conditions	PROBLEM LIST
Past Medical History	Conditions	HISTORY OF PAST ILLNESS
Past Surgical-Anesthesia History	Past Surgical History	HISTORY OF SURGICAL PROCEDURES

Medication List	Medications	HISTORY OF MEDICATION USE
Allergy List	Allergies and Adverse Reactions	HISTORY OF ALLERGIES
Immunizations	Immunizations	HISTORY OF IMMUNIZATIONS
History of Tobacco Use		HISTORY OF TOBACCO USE
Current Alcohol/Substance Abuse		HISTORY OF PRESENT ALCOHOL AND/OR SUBSTANCE ABUSE
Transfusion History		TBD
Family History (specifically includes):	Family History	HISTORY OF FAMILY MEMBER DISEASES
Social History		SOCIAL HISTORY
Advance Directives	Advance Directives	ADVANCE DIRECTIVES
Functional Capacity	Functional Status	HISTORY OF FUNCTIONAL STATUS
Review of Systems (specifically includes):	Review of Systems	REVIEW OF SYSTEMS
Physical Exam (specifically includes):	Physical Examination	PHYSICAL EXAM.TOTAL
Studies and Reports	Studies and Reports	STUDIES SUMMARY
Health Maintenance Status		TREATMENT PLAN
Pre-procedure Care Plan Status Report		TREATMENT PLAN
Pre-procedure Impressions (specifically includes):		DIAGNOSIS
-Updated Problem List	Conditions	PROBLEM LIST
-Pre-Procedure Risk Assessment		OPERATIVE NOTE COMPLICATIONS
Pre-procedure Care Plan	Plan of Care	TREATMENT PLAN
Patient Education/Consents		EDUCATION NOTE

5.4.1.8.4 Specification

Data Element Name	Opt	Template ID
Proposed Procedure: (coded procedure) includes: Content same as corresponding Op Note section except that this section describes what is planned to happen instead of what happened.	R	1.3.6.1.4.1.19376.1.5.3.1.1.9.1
-Reason for Procedure: (coded diagnosis)	R	1.3.6.1.4.1.19376.1.5.3.1.1.9.4

Content same as corresponding Op Note section except that this section describes what is planned to happen instead of what happened.		
-Proposed Anesthesia Content same as corresponding Op Note section except that this section describes what is planned to happen instead of what happened.	R	1.3.6.1.4.1.19376.1.5.3.1.1.9.3
-Expected Blood Loss Content same as corresponding Op Note section except that this section describes what is planned to happen instead of what happened. Needs narrative LOINC code	R2	1.3.6.1.4.1.19376.1.5.3.1.1.9.2
-Procedure Care Plan Care Plan generated by the surgeon or surgical coordinator prior to the H&P	R2	1.3.6.1.4.1.19376.1.5.3.1.1.9.40
HPI—(free text leading up to procedure)	R	1.3.6.1.4.1.19376.1.5.3.1.3.4
Current Problem List Problem List (if known) is represented as current at beginning of H&P encounter.	R2	1.3.6.1.4.1.19376.1.5.3.1.3.6
Past Medical History	R2	1.3.6.1.4.1.19376.1.5.3.1.3.8
Past Surgical-Anesthesia History	R	1.3.6.1.4.1.19376.1.5.3.1.3.11
Medication List	R	1.3.6.1.4.1.19376.1.5.3.1.3.19
Allergy List	R	1.3.6.1.4.1.19376.1.5.3.1.3.13
Immunizations	R2	1.3.6.1.4.1.19376.1.5.3.1.3.23
History of Tobacco Use	R	1.3.6.1.4.1.19376.1.5.3.1.1.9.8
Current Alcohol/Substance Abuse	R	1.3.6.1.4.1.19376.1.5.3.1.1.9.10
Transfusion History	R	1.3.6.1.4.1.19376.1.5.3.1.1.9.12
Pre-procedure Family History	R	1.3.6.1.4.1.19376.1.5.3.1.1.9.5
Social History	R2	1.3.6.1.4.1.19376.1.5.3.1.3.16
Advance Directives	R2	1.3.6.1.4.1.19376.1.5.3.1.3.34
Functional Capacity	R	1.3.6.1.4.1.19376.1.5.3.1.3.17
-General Review	R	1.3.6.1.4.1.19376.1.5.3.1.3.18
-Implanted Medical Devices	R2	1.3.6.1.4.1.19376.1.5.3.1.1.9.46
-Pregnancy Status (if female)	R	1.3.6.1.4.1.19376.1.5.3.1.1.9.47
-Anesthesia Review of Systems	R	1.3.6.1.4.1.19376.1.5.3.1.1.9.14
Physical Exam (specifically includes):	R	1.3.6.1.4.1.19376.1.5.3.1.1.9.15
-Vitals	R	1.3.6.1.4.1.19376.1.5.3.1.9.49
-General Appearance	O	1.3.6.1.4.1.19376.1.5.3.1.1.9.16
-Visible Implanted Medical Devices	O	1.3.6.1.4.1.19376.1.5.3.1.1.9.48
-Integumentary System	O	1.3.6.1.4.1.19376.1.5.3.1.1.9.17
-Head	O	1.3.6.1.4.1.19376.1.5.3.1.1.9.18
-Eyes	O	1.3.6.1.4.1.19376.1.5.3.1.1.9.19
-Ears, Nose, Mouth and Throat (may include):	O	1.3.6.1.4.1.19376.1.5.3.1.1.9.20.1
--Ears	O	1.3.6.1.4.1.19376.1.5.3.1.1.9.21

--Nose	O	1.3.6.1.4.1.19376.1.5.3.1.1.9.22
--Mouth, Throat, and Teeth	O	1.3.6.1.4.1.19376.1.5.3.1.1.9.23
-Neck	O	1.3.6.1.4.1.19376.1.5.3.1.1.9.24
-Endocrine System	O	1.3.6.1.4.1.19376.1.5.3.1.1.9.25
-Thorax and Lungs (may include):	O	1.3.6.1.4.1.19376.1.5.3.1.1.9.26.1
--Chest Wall	O	1.3.6.1.4.1.19376.1.5.3.1.1.9.27

5.4.1.8.5 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 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='1.3.6.1.4.1.19376.1.5.3.1.1.9'/>
  <id root=' ' extension=' '/>
  <code code=' ' displayName=' '
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Preprocedure History and Physical</title>
  <effectiveTime value='20070620012005'/>
  <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='1.3.6.1.4.1.19376.1.5.3.1.1.9.1'/>
        <!-- Required Proposed Procedure: (coded procedure) includes: Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.4'/>
        <!-- Required -Reason for Procedure: (coded diagnosis) Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.3'/>
        <!-- Required -Proposed Anesthesia Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.2'/>
        <!-- Required if known -Expected Blood Loss Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.40'/>
        <!-- Required if known -Procedure Care Plan Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.4'/>
        <!-- Required HPI—(free text leading up to procedure) Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.6'/>
        <!-- Required if known Current Problem List Section content -->
      </section>
    </component>

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

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.11'/>
        <!-- Required Past Surgical-Anesthesia History Section content -->
      </section>
    </component>
```



```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.19'/>
    <!-- Required Medication List Section content -->
  </section>
</component>

<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.13'/>
    <!-- Required Allergy List 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='1.3.6.1.4.1.19376.1.5.3.1.1.9.8'/>
    <!-- Required History of Tobacco Use Section content -->
  </section>
</component>

<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.10'/>
    <!-- Required Current Alcohol/Substance   Abuse Section content -->
  </section>
</component>

<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.12'/>
    <!-- Required Transfusion History Section content -->
  </section>
</component>

<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.5'/>
    <!-- Required Pre-procedure 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='1.3.6.1.4.1.19376.1.5.3.1.3.34'/>
    <!-- Required if known Advance Directives Section content -->
  </section>
</component>

<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.17'/>
    <!-- Required Functional Capacity Section content -->
  </section>
</component>

<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.18'/>
    <!-- Required   -General Review Section content -->
  </section>
</component>
```



```
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.46'/>
        <!-- Required if known -Implanted Medical Devices Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.47'/>
        <!-- Required -Pregnancy Status (if female) Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.14'/>
        <!-- Required   -Anesthesia Review of Systems Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.15'/>
        <!-- Required Physical Exam (specifically includes): Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.9.49'/>
        <!-- Required -Vitals 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='1.3.6.1.4.1.19376.1.5.3.1.1.9.20.1'/>
        <!-- Optional -Ears, Nose, Mouth and Throat (may include): 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='1.3.6.1.4.1.19376.1.5.3.1.1.9.26.1'/>
        <!-- Optional -Thorax and Lungs (may include): 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>


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

Figure 5.4-8 Sample Preprocedure History and Physical Document

5.4.1.8.6 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The Preprocedure History and Physical can only be used on Clinical Documents.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.1"]'>
     Error: The parent template identifier for Preprocedure History and Physical is not present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='code[@code = "{{{LOINC}}}"]'>
     Error: The document type code of a Preprocedure History and Physical must be {{{LOINC}}}
   </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>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Preprocedure History and Physical must contain Proposed Procedure: (coded procedure)
includes:.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
     Content same as corresponding Op Note section except that this section describes what is planned
to happen instead of what happened.
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.4"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Preprocedure History and Physical must contain -Reason for Procedure: (coded diagnosis).
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
     Content same as corresponding Op Note section except that this section describes what is planned
to happen instead of what happened.
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.3"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Preprocedure History and Physical must contain -Proposed Anesthesia.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
     Content same as corresponding Op Note section except that this section describes what is planned
to happen instead of what happened.
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.2"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A Preprocedure History and Physical should contain -Expected Blood Loss.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
     Content same as corresponding Op Note section except that this section describes what is planned
to happen instead of what happened.
Needs narrative LOINC code
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.40"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A Preprocedure History and Physical should contain -Procedure Care Plan.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
     Care Plan generated by the surgeon or surgical coordinator prior to the H&P
   </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: A Preprocedure History and Physical must contain HPI—(free text leading up to procedure).
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.6"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A Preprocedure History and Physical should contain Current Problem List.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
     Problem List (if known) is represented as current at beginning of H&P encounter.
   </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: A Preprocedure History and Physical should contain Past Medical History.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.11"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Preprocedure History and Physical must contain Past Surgical-Anesthesia History.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </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: A Preprocedure History and Physical must contain Medication List.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </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: A Preprocedure History and Physical must contain Allergy List.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </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: A Preprocedure History and Physical should contain Immunizations.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.8"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Preprocedure History and Physical must contain History of Tobacco Use.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.10"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Preprocedure History and Physical must contain Current Alcohol/Substance   Abuse.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.12"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Preprocedure History and Physical must contain Transfusion History.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.5"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Preprocedure History and Physical must contain Pre-procedure Family History.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </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: A Preprocedure History and Physical should contain Social History.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </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: A Preprocedure History and Physical should contain Advance Directives.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.17"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Preprocedure History and Physical must contain Functional Capacity.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.13"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Preprocedure History and Physical must contain Review of Systems (specifically
includes):.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.18"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Preprocedure History and Physical must contain   -General Review.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.46"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A Preprocedure History and Physical should contain -Implanted Medical Devices.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.47"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Preprocedure History and Physical must contain -Pregnancy Status (if female).
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.14"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Preprocedure History and Physical must contain   -Anesthesia Review of Systems.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.15"]'>
```



```
      <!-- Verify that all required data elements are present -->
      Error: A Preprocedure History and Physical must contain Physical Exam (specifically includes):.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.49"]'>
      <!-- Verify that all required data elements are present -->
      Error: A Preprocedure History and Physical must contain -Vitals.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
    </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 Preprocedure History and Physical does not contain -General Appearance.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
    </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 Preprocedure History and Physical does not contain -Visible Implanted Medical Devices.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
    </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 Preprocedure History and Physical does not contain -Integumentary System.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
    </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 Preprocedure History and Physical does not contain -Head.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
    </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 Preprocedure History and Physical does not contain -Eyes.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.20.1"]'>
      <-- Note any missing optional elements -->
      Note: This Preprocedure History and Physical does not contain -Ears, Nose, Mouth and Throat (may
include):.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
    </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 Preprocedure History and Physical does not contain --Ears.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
    </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 Preprocedure History and Physical does not contain --Nose.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
    </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 Preprocedure History and Physical does not contain --Mouth, Throat, and Teeth.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
    </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 Preprocedure History and Physical does not contain -Neck.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
    </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 Preprocedure History and Physical does not contain -Endocrine System.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.26.1"]'>
      <-- Note any missing optional elements -->
      Note: This Preprocedure History and Physical does not contain -Thorax and Lungs (may include):.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
    </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 Preprocedure History and Physical does not contain --Chest Wall.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9
    </assert>
  </rule>
</pattern>
```


5.4.1.9 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.

5.4.1.9.1 Format Code

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

5.4.1.9.2 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
Plan of Care (new meds labs, or x-rays ordered)	Care Plan	TREATMENT PLAN
Proposed disposition	Care Plan	TREATMENT PLAN
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

5.4.1.9.3 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
Plan of Care	R2	1.3.6.1.4.1.19376.1.5.3.1.1.10.3.1

(new meds, labs, or x-rays ordered)		
Mode of Transport to the Emergency Department	R	1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2
Estimated Time of Arrival	R2	1.3.6.1.4.1.19376.1.5.3.1.1.10.4.1
Proposed disposition	R2	1.3.6.1.4.1.19376.1.5.3.1.1.10.4.2
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
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.

5.4.1.9.4 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 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='20070620012005'/>
  <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='1.3.6.1.4.1.19376.1.5.3.1.1.10.3.1'/>
        <!-- Required if known Plan of Care 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 Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.4.1'/>
        <!-- Required if known Estimated Time of Arrival Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.4.2'/>
        <!-- Required if known Proposed 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>


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

Figure 5.4-9 Sample Emergency Department Referral Document

5.4.1.9.5 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.10'>
 <rule context='*[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='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='code[@code = "{{{LOINC}}}"]'>
     Error: The document type code of a Emergency Department Referral must be {{{LOINC}}}
   </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>
   <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: A Emergency Department Referral must contain Reason for Referral.
     See http://www.ihe.net/index.php/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: A Emergency Department Referral must contain History Present Illness.
     See http://www.ihe.net/index.php/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: A Emergency Department Referral must contain Active Problems.
     See http://www.ihe.net/index.php/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: A Emergency Department Referral must contain Current Meds.
     See http://www.ihe.net/index.php/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: A Emergency Department Referral must contain Allergies.
     See http://www.ihe.net/index.php/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: A Emergency Department Referral should contain Resolved Problems.
     See http://www.ihe.net/index.php/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: A Emergency Department Referral should contain List of Surgeries.
     See http://www.ihe.net/index.php/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: A Emergency Department Referral should contain Immunizations.
     See http://www.ihe.net/index.php/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: A Emergency Department Referral should contain Family History.
     See http://www.ihe.net/index.php/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: A Emergency Department Referral should contain Social History.
     See http://www.ihe.net/index.php/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 does not contain Pertinent Review of Systems.
     See http://www.ihe.net/index.php/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: A Emergency Department Referral should contain Vital Signs.
      See http://www.ihe.net/index.php/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: A Emergency Department Referral should contain Physical Exam.
      See http://www.ihe.net/index.php/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: A Emergency Department Referral should contain Relevant Diagnostic Results and/or
Clinical Reports.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.10
      Includes Diagnostic Surgical Procedures, Clinical Reports and Diagnostic Tests and Results (Lab,
Imaging, EKG's, etc.) including links to relevant documents.
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.10.3.1"]'>
      <!-- Alert on any missing required if known elements -->
      Warning: A Emergency Department Referral should contain Plan of Care.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.10
      (new meds, labs, or x-rays ordered)
    </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: A Emergency Department Referral must contain Mode of Transport to the Emergency
Department.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.10
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.10.4.1"]'>
      <!-- Alert on any missing required if known elements -->
      Warning: A Emergency Department Referral should contain Estimated Time of Arrival.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.10
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.10.4.2"]'>
      <!-- Alert on any missing required if known elements -->
      Warning: A Emergency Department Referral should contain Proposed disposition.
      See http://www.ihe.net/index.php/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: A Emergency Department Referral must contain Advance Directives.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.10
      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.
    </assert>
    <assert test='.//cda:templateId[@root = ""]'>
      <!-- Verify that all required data elements are present -->
      Error: A Emergency Department Referral must contain Patient Administrative Identifiers.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.10
      These are handed by the Medical Documents Content Profile by reference to constraints in HL7 CRS.
    </assert>
    <assert test='.//cda:templateId[@root = ""]'>
      <!-- Alert on any missing required if known elements -->
      Warning: A Emergency Department Referral should contain Pertinent Insurance Information.
      See http://www.ihe.net/index.php/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: A Emergency Department Referral should contain Data needed for state and local referral
forms, if different than above.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.10
      These are handed by including additional sections within the summary.
    </assert>
  </rule>
</pattern>
```

5.4.1.10 Antepartum Summary Form C & F Specification 1.3.6.1.4.1.19376.1.5.3.1.1.11.2

The Antepartum Summary Form C represents a summary of the most critical information to Obstetrician regarding the status of a patients pregnancy.

5.4.1.10.1 Format Code

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

5.4.1.10.2 Standards

CCD ASTM/HL7 Continuity of Care Document

CDAR2 HL7 CDA Release 2.0

ACOGAR American College of Obstretricians and Gynecologists (ACOG), Antepartum Record

LOINC Logical Observation Identifiers, Names and Codes

SNOMED Systemized Nomenclature for Medicine

5.4.1.10.3 Data Element Index

ACOG Element	CDA Section	Comment
Drug Allergy/Latex Allergy	Allergies	
Is Blood Transfusion Acceptable	Advance Directives	
Antepartum Anesthesia Consult Planned	Plan of Care	
Problems/Plans	Problems	Related plans should be listed in Plan of Care
Medication List	Active Medications	
EDD Confirmation/18-20 Week EDD Update	Estimated Delivery Dates	
Prepregnancy Weight	ACOG Visit Summary Flowsheet	
Visit Flowsheet	ACOG Visit Summary Flowsheet	

5.4.1.10.4 Specification

Data Element Name	Opt	Template ID
Allergies This section is the same as for Medical Summary, however it SHALL include one observation of Latex Allergy which may be negated through the negationInd attribute. Latex Allergy is particularly relevant for Obstetrics because of the frequency of vaginal exams that might involve the use of latex gloves. The observation value code for Latex Allergy is '300916003'. The codeSystem is '2.16.840.1.113883.6.96'. The codeSystemName is 'SNOMED CT'	R	1.3.6.1.4.1.19376.1.5.3.1.3.13
Advance Directives APS includes an explicit check of patients preference for blood	R	1.3.6.1.4.1.19376.1.5.3.1.3.34

transfusion because the risk of massive hemorrhage during delivery is much higher. This observation SHALL be recorded in the Advance Directives section. APS Form C documents SHALL include a simple observation of "blood transfusion acceptable?" The observation value for this observation is '(xx-bld-transf-ok)'. The codeSystem is '2.16.840.1.113883.6.1'. The codeSystemName is 'LOINC'		
Plan of Care APS forms SHOULD include an observation stating if an anesthesia consult is planned. When present, the observation value for this observation is '(xx-anest-cons-pland)'. The codeSystem is '2.16.840.1.113883.6.1'. The codeSystemName is 'LOINC'. If the type of anesthesia planned is known, systems SHOULD include an observation to represent that data using the LOINC code '(xx-type-of-anesth-pland)' with a CD value including one of the following values: (General | Epidural | Spinal) or a Null flavor to represent unknown or not listed.	R	1.3.6.1.4.1.19376.1.5.3.1.3.31
Medications Medications should include start and stop date if known.	R	1.3.6.1.4.1.19376.1.5.3.1.3.19
Problems Related Plans should be included in the Plan of Care section.	R	1.3.6.1.4.1.19376.1.5.3.1.3.6
Estimated Delivery Dates	R	1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.1
ACOG Visit Summary Flowsheet	R	1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2

Note: APS form C is typically used as a 'living document' where the latest information is added to the end of the flowsheet at each visit. This is different than a typical Medical Summary which typically would not share information until document is complete. Although this pattern of updates is not prohibited by Medical Summary, it is also not typical. For APS documents may be published at the end of each visit, but subsequent updates with a pregnancy SHALL be represented as document replacement by including a <relatedDocument typeCode='REPL'> element as below.

```
<ClinicalDocument xmlns='urn:hl7-org:v3'>
    :
  <relatedDocument typeCode='REPL'>
    <parentDocument>
      <id root=' ' extension=' '/>
    </parentDocument>
  </relatedDocument>
    :
</ClinicalDocument>
```

5.4.1.10.5 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='1.3.6.1.4.1.19376.1.5.3.1.1.2'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.11.2'/>
  <id root=' ' extension=' '/>
  <code code=' ' displayName=' '
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Antepartum Summary Form C & F</title>
  <effectiveTime value='20070620012005'/>
  <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='1.3.6.1.4.1.19376.1.5.3.1.3.13'/>
        <!-- Required Allergies 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>

    <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='1.3.6.1.4.1.19376.1.5.3.1.3.19'/>
        <!-- Required Medications Section content -->
      </section>
    </component>

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

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.1'/>
        <!-- Required Estimated Delivery Dates Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2'/>
        <!-- Required ACOG Visit Summary Flowsheet Section content -->
      </section>
    </component>


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

Figure 5.4-10 Sample Antepartum Summary Form C & F Document

5.4.1.10.6 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.11.2'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.11.2"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The Antepartum Summary Form C & F 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 Antepartum Summary Form C & F is not present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='code[@code = "{{{LOINC}}}"]'>
     Error: The document type code of a Antepartum Summary Form C & F must be {{{LOINC}}}
   </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>
   <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: A Antepartum Summary Form C & F must contain Allergies.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.11.2
     This section is the same as for Medical Summary, however it SHALL include one observation of
Latex Allergy which may be negated through the negationInd attribute.  Latex Allergy is particularly
relevant for Obstetrics because of the frequency of vaginal exams that might involve the use of latex
gloves.  The observation value code for Latex Allergy is '300916003'.  The codeSystem is
'2.16.840.1.113883.6.96'.  The codeSystemName is 'SNOMED CT'
   </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: A Antepartum Summary Form C & F must contain Advance Directives.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.11.2
     APS includes an explicit check of patients preference for blood transfusion because the risk of
massive hemorrhage during delivery is much higher.  This observation SHALL be recorded in the Advance
Directives section.  APS Form C documents SHALL include a simple observation of "blood transfusion
acceptable?" The observation value for this observation is '(xx-bld-transf-ok)'.  The codeSystem is
'2.16.840.1.113883.6.1'.  The codeSystemName is 'LOINC'
   </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: A Antepartum Summary Form C & F must contain Plan of Care.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.11.2
     APS forms SHOULD include an observation stating if an anesthesia consult is planned.  When
present, the observation value for this observation is '(xx-anest-cons-pland)'.  The codeSystem is
'2.16.840.1.113883.6.1'.  The codeSystemName is 'LOINC'.
If the type of anesthesia planned is known, systems SHOULD include an observation to represent that
data using the LOINC code '(xx-type-of-anesth-pland)' with a CD value including one of the following
values: ( General | Epidural | Spinal ) or a Null flavor to represent unknown or not listed.
   </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: A Antepartum Summary Form C & F must contain Medications.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.11.2
     Medications should include start and stop date if known.
   </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: A Antepartum Summary Form C & F must contain Problems.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.11.2
     Related Plans should be included in the Plan of Care section.
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Antepartum Summary Form C & F must contain Estimated Delivery Dates.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.11.2
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Antepartum Summary Form C & F must contain ACOG Visit Summary Flowsheet.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.11.2
   </assert>
   <assert test="entry/observation/value[@code='300916003']">
     Antepartum Summary Requires an observation of Latex Allergy to be
     asserted.  This may be negated via the negationInd attribute.
   </assert>
```



```
   <assert test="entry/observation/value[@code='(xx-bld-transf-ok)']">
     Antepartum Summary Requires an observation of blood transfusion
     acceptability to be asserted.  This may be negated via the negationInd attribute.
   </assert>
   <assert test="entry/observation/value[@code='(xx-anest-cons-pland)']">
     Antepartum Summary Requires an observation of anesthesia consult
     planned to be asserted.  This may be negated via the negationInd attribute.
   </assert>
 </rule>
</pattern>
```

5.4.1.11 Triage Note Specification 1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1

The triage note specification includes sections for data commonly captured during the initial triage assessment of the patient. It includes arrival data, historical information about the patient, vital signs, assessments, and interventions.

5.4.1.11.1 Format Code

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

5.4.1.11.2 Data Element Index

Data Element	LOINC
Chief Complaint	10154-3 CHIEF COMPLAINT
Mode of Arrival	11459-5 TRANSPORT MODE
History of Present Illness	10164-2 HISTORY OF PRESENT ILLNESS
Active Problems	11450-4 PROBLEM LIST
Resolved Problems	11348-0 HISTORY OF PAST ILLNESS
List of Surgeries	47519-4 HISTORY OF PRIOR SURGERIES
Immunizations	11369-6 HISTORY OF IMMUNIZATIONS
Family History	10157-6 HISTORY OF FAMILY ILLNESS
Social History	29762-2 SOCIAL HISTORY
History of Pregnancies	10162-6 HISTORY OF PREGNANCIES
Current Medications	10160-0 CURRENT MEDICATIONS
Allergies	48765-2 ALLERGIES, ADVERSE REACTIONS, ALERTS
Acuity Assessment	11283-9 ACUITY ASSESSMENT
Vital Signs	8716-3 VITAL SIGNS
Triage Assessments	XASSES-X NURSING ASSESSMENTS PANEL
Triage Interventions	NURIN-T NURSING INTERVENTIONS PANEL

Medications Administered	18610-6 MEDICATION ADMINISTERED (COMPOSITE)
Intravenous Fluids Administered	XIVFLU-X INTRAVENOUS FLUID ADMINISTERED (COMPOSITE)

5.4.1.11.3 Specification

Data Element Name	Opt	Template ID
Chief Complaint	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1
Mode of Arrival	R	1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2
History of Present Illness	R	1.3.6.1.4.1.19376.1.5.3.1.3.4
Active Problems	R2	1.3.6.1.4.1.19376.1.5.3.1.3.6
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
History of Pregnancies This section should contain one entry containing the date (TS) of last menstrual period for women of childbearing age, using LOINC Code 8665-2 DATE LAST MENSTRUAL PERIOD	R2	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4
Current Medications	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
Acuity Assessment	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.2
Vital Signs	R	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2
Nursing Assessments	R2	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.4
Nursing Interventions	R2	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.5
Medications Administered	R2	1.3.6.1.4.1.19376.1.5.3.1.3.21
Intravenous Fluids Administered	R2	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.6

5.4.1.11.4 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='1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1'/>
  <id root=' ' extension=' '/>
  <code code='X-TRIAGE' displayName='Triage Note'
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Triage Note</title>
  <effectiveTime value='20070620012005'/>
  <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='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1'/>
        <!-- Required Chief Complaint 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 Arrival Section content -->
      </section>
    </component>

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

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.6'/>
        <!-- Required if known Active Problems 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='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4'/>
        <!-- Required if known History of Pregnancies Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.19'/>
        <!-- Required Current 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='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.2'/>
        <!-- Required Acuity Assessment Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2'/>
        <!-- Required Vital Signs Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.4'/>
        <!-- Required if known Nursing Assessments Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.5'/>
        <!-- Required if known Nursing Interventions Section content -->
      </section>
    </component>

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

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.6'/>
        <!-- Required if known Intravenous Fluids Administered Section content -->
      </section>
    </component>


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

Figure 5.4-11 Sample Triage Note Document

5.4.1.11.5 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The Triage Note can only be used on Clinical Documents.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.1"]'>
     Error: The parent template identifier for Triage Note is not present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='code[@code = "X-TRIAGE"]'>
     Error: The document type code of a Triage Note must be X-TRIAGE
   </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>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Triage Note must contain Chief Complaint.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </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: A Triage Note must contain Mode of Arrival.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </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: A Triage Note must contain History of Present Illness.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.6"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A Triage Note should contain Active Problems.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </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: A Triage Note should contain Resolved Problems.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </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: A Triage Note should contain List of Surgeries.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </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: A Triage Note should contain Immunizations.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </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: A Triage Note should contain Family History.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </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: A Triage Note should contain Social History.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A Triage Note should contain History of Pregnancies.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
     This section should contain one entry containing the date (TS) of last menstrual period for women
of childbearing age, using LOINC Code 8665-2 DATE LAST MENSTRUAL PERIOD
   </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: A Triage Note must contain Current Medications.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </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: A Triage Note must contain Allergies.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.2"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Triage Note must contain Acuity Assessment.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Triage Note must contain Vital Signs.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.4"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A Triage Note should contain Nursing Assessments.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.5"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A Triage Note should contain Nursing Interventions.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </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: A Triage Note should contain Medications Administered.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.6"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A Triage Note should contain Intravenous Fluids Administered.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.1
   </assert>
 </rule>
</pattern>
```

5.4.1.12 Nursing Note Specification 1.3.6.1.4.1.19376.1.5.3.1.1.13.1.2

The Nursing note specification includes sections for data commonly captured during the ongoing care of the ED patient. It includes vital signs, ongoing assessments, and interventions.

5.4.1.12.1 Format Code

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

5.4.1.12.2 Data Element Index

Data Element	LOINC
Vital Signs	8716-3 VITAL SIGNS
Nursing Assessments	X-ASSES-X NURSING ASSESSMENT
Nursing Interventions	NURIN-T NURSING INTERVENTIONS
Medications Administered	18610-6 MEDICATION ADMINISTERED (COMPOSITE)
Intravenous Fluids Administered	XIVFLU-X INTRAVENOUS FLUID ADMINISTERED (COMPOSITE)
ED Disposition	11302-7 ED DISPOSITION

5.4.1.12.3 Specification

Data Element Name	Opt	Template ID
Vital Signs	R	1.3.6.1.4.1.19376.1.5.3.1.3.25
Assessments Record of assessments of the patient's condition	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.4
Interventions This section is used to record interventions or nursing procedures performed	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.11
Medications Administered	R	1.3.6.1.4.1.19376.1.5.3.1.3.21
Intravenous Fluids Administered	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.6
ED Disposition	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.8

5.4.1.12.4 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='1.3.6.1.4.1.19376.1.5.3.1.1.13.1.2'/>
  <id root=' ' extension=' '/>
  <code code='X-NN' displayName='Nursing Note'
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Nursing Note</title>
  <effectiveTime value='20070620012005'/>
  <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='1.3.6.1.4.1.19376.1.5.3.1.3.25'/>
        <!-- Required Vital Signs Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.4'/>
        <!-- Required Assessments Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.11'/>
        <!-- Required Interventions Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.21'/>
        <!-- Required Medications Administered Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.6'/>
        <!-- Required Intravenous Fluids Administered Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.8'/>
        <!-- Required ED Disposition Section content -->
      </section>
    </component>


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

Figure 5.4-12 Sample Nursing Note Document

5.4.1.12.5 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.1.2'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.13.1.2"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The Nursing Note can only be used on Clinical Documents.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.1"]'>
     Error: The parent template identifier for Nursing Note is not present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='code[@code = "X-NN"]'>
     Error: The document type code of a Nursing Note must be X-NN
   </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>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.25"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Nursing Note must contain Vital Signs.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.2
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.4"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Nursing Note must contain Assessments.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.2
     Record of assessments of the patient's condition
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.11"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Nursing Note must contain Interventions.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.2
     This section is used to record interventions or nursing procedures performed
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.21"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Nursing Note must contain Medications Administered.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.2
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.6"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Nursing Note must contain Intravenous Fluids Administered.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.2
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.8"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Nursing Note must contain ED Disposition.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.2
   </assert>
 </rule>
</pattern>
```

5.4.1.13 Composite Triage and Nursing Note Specification 1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3

The Composite Triage and Nursing Note specification may be employed where the ED triage note and nursing notes exist within a single document. The elements below are an exact composite of the elements from the Triage Note specification and the Nursing Note specification.

5.4.1.13.1 Format Code

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

5.4.1.13.2 Data Element Index

Data Element	LOINC
Chief Complaint	10154-3 CHIEF COMPLAINT
Mode of Arrival	11459-5 TRANSPORT MODE
History of Present Illness	10164-2 HISTORY OF PRESENT ILLNESS
Active Problems	11450-4 PROBLEM LIST
Resolved Problems	11348-0 HISTORY OF PAST ILLNESS
List of Surgeries	47519-4 HISTORY OF PRIOR SURGERIES
Immunizations	11369-6 HISTORY OF IMMUNIZATIONS
Family History	10157-6 HISTORY OF FAMILY ILLNESS
Social History	29762-2 SOCIAL HISTORY
History of Pregnancies	10162-6 HISTORY OF PREGNANCIES
Current Medications	10160-0 CURRENT MEDICATIONS
Allergies	48765-2 ALLERGIES, ADVERSE REACTIONS, ALERTS
Acuity Assessment	11283-9 ACUITY ASSESSMENT
Vital Signs	8716-3 VITAL SIGNS
Nursing Assessments	XASSES-X NURSING ASSESSMENTS PANEL
Nursing Interventions	NURIN-T NURSING INTERVENTIONS
Medications Administered	18610-6 MEDICATION ADMINISTERED (COMPOSITE)
Intravenous Fluids Administered	XIVFLU-X INTRAVENOUS FLUID ADMINISTERED (COMPOSITE)
ED Disposition	11302-7 ED DISPOSITION

5.4.1.13.3 Specification

Data Element Name	Opt	Template ID
Chief Complaint	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1
Mode of Arrival	R	1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2
History of Present Illness	R	1.3.6.1.4.1.19376.1.5.3.1.3.4
Active Problems	R2	1.3.6.1.4.1.19376.1.5.3.1.3.6
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
History of Pregnancies This section should contain one entry containing the date (TS) of last menstrual period for women of childbearing age, using LOINC Code 8665-2 DATE LAST MENSTRUAL PERIOD	R2	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4
Current Medications	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
Acuity Assessment	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.2
Vital Signs	R	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2
Nursing Assessments Battery	R2	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.4
Interventions This section is used to record interventions or nursing procedures performed	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.11
Medications Administered	R2	1.3.6.1.4.1.19376.1.5.3.1.3.21
IV Fluids Administered	R2	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.6
ED Disposition	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10

5.4.1.13.4 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='1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3'/>
  <id root=' ' extension=' '/>
  <code code='X-TRIAGE' displayName='Triage Note'
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Composite Triage and Nursing Note</title>
  <effectiveTime value='20070620012005'/>
  <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='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1'/>
        <!-- Required Chief Complaint 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 Arrival Section content -->
      </section>
    </component>

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

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.6'/>
        <!-- Required if known Active Problems 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='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4'/>
        <!-- Required if known History of Pregnancies Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.19'/>
        <!-- Required Current 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='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.2'/>
        <!-- Required Acuity Assessment Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2'/>
        <!-- Required Vital Signs Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.4'/>
        <!-- Required if known Nursing Assessments Battery Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.11'/>
        <!-- Required Interventions Section content -->
      </section>
    </component>

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

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.6'/>
        <!-- Required if known IV Fluids Administered Section content -->
      </section>
    </component>

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


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

Figure 5.4-13 Sample Composite Triage and Nursing Note Document

5.4.1.13.5 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The Composite Triage and Nursing Note can only be used on Clinical Documents.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.1"]'>
     Error: The parent template identifier for Composite Triage and Nursing Note is not present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='code[@code = "X-TRIAGE"]'>
     Error: The document type code of a Composite Triage and Nursing Note must be X-TRIAGE
   </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>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Composite Triage and Nursing Note must contain Chief Complaint.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </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: A Composite Triage and Nursing Note must contain Mode of Arrival.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </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: A Composite Triage and Nursing Note must contain History of Present Illness.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.6"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A Composite Triage and Nursing Note should contain Active Problems.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </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: A Composite Triage and Nursing Note should contain Resolved Problems.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </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: A Composite Triage and Nursing Note should contain List of Surgeries.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </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: A Composite Triage and Nursing Note should contain Immunizations.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </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: A Composite Triage and Nursing Note should contain Family History.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </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: A Composite Triage and Nursing Note should contain Social History.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A Composite Triage and Nursing Note should contain History of Pregnancies.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
     This section should contain one entry containing the date (TS) of last menstrual period for women
of childbearing age, using LOINC Code 8665-2 DATE LAST MENSTRUAL PERIOD
   </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: A Composite Triage and Nursing Note must contain Current Medications.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </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: A Composite Triage and Nursing Note must contain Allergies.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.2"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Composite Triage and Nursing Note must contain Acuity Assessment.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Composite Triage and Nursing Note must contain Vital Signs.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.4"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A Composite Triage and Nursing Note should contain Nursing Assessments Battery.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.11"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Composite Triage and Nursing Note must contain Interventions.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
     This section is used to record interventions or nursing procedures performed
   </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: A Composite Triage and Nursing Note should contain Medications Administered.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.6"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A Composite Triage and Nursing Note should contain IV Fluids Administered.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Composite Triage and Nursing Note must contain ED Disposition.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.3
   </assert>
 </rule>

</pattern>  -->>Clean this up to same as other notes<<--
```

5.4.1.14 ED Physician Note Specification 1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4

The ED Physician note specification includes sections for data commonly reported by the physician as part of an ED encounter. It includes relevant historical information about the patient, pertinent arrival information, vital signs, history and physical examination findings, assessment and plan, interventions including medications, fluids and procedures, diagnosis and disposition.

5.4.1.14.1 Format Code

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

5.4.1.14.2 Data Element Index

Data Element	LOINC
Referral Source	11293-8 ED REFERRAL SOURCE

Mode of Arrival	11459-5 TRANSPORT MODE
Chief Complaint	10154-3 CHIEF COMPLAINT FIND
History of Present Illness	10164-2 HISTORY OF PRESENT ILLNESS
Advanced Directives	42348-3 ADVANCE DIRECTIVES
Active Problems	11450-4 PROBLEM LIST
Resolved Problems	11348-0 HISTORY OF PAST ILLNESS
Current Medications	10160-0 CURRENT MEDICATIONS
Allergies	48765-2 ALLERGIES, ADVERSE REACTIONS, ALERTS
List of Surgeries	10167-5 HISTORY OF SURGICAL PROCEDURES
Immunizations	11369-6 HISTORY OF IMMUNIZATIONS
Family History	10157-6 HISTORY OF FAMILY MEMBER DISEASES
Social History	29762-2 SOCIAL HISTORY
History of Pregnancies	10162-6 HISTORY OF PREGNANCIES
Pertinent ROS	10187-3 REVIEW OF SYSTEMS
Vital Signs	8716-3 VITAL SIGNS
Physical Examination	22029-3 PHYSICAL EXAM.TOTAL
Plan of Care	18776-5 TREATMENT PLAN
Medications Administered	18610-6 MEDICATION ADMINISTERED (COMPOSITE)
Intravenous Fluids Administered	XIVFLU-X INTRAVENOUS FLUID ADMINISTERED
Procedures Performed	PROC-X PROCEDURE PERFORMED
Test Results - Lab, ECG, Radiology	30954-2 STUDIES SUMMARY
Consultations	18693-2 ED CONSULTANT PRACTITIONER
Progress Note	18733-6 SUBSEQUENT EVALUATION NOTE (ATTENDING PHYSICIAN)
ED Diagnoses	11301-9 ED DIAGNOSIS
ED Disposition	11302-7 ED DISPOSITION

5.4.1.14.3 Specification

Data Element Name	Opt	Template ID

Referral Source	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.3
Mode of Arrival	R	1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2
Chief Complaint	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1
History of Present Illness	R	1.3.6.1.4.1.19376.1.5.3.1.3.4
Advanced Directives	R	1.3.6.1.4.1.19376.1.5.3.1.3.34
Active Problems	R2	1.3.6.1.4.1.19376.1.5.3.1.3.6
Resolved Problems	R2	1.3.6.1.4.1.19376.1.5.3.1.3.8
Current Medications	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
List of Surgeries	R	1.3.6.1.4.1.19376.1.5.3.1.3.11
Immunizations	R	1.3.6.1.4.1.19376.1.5.3.1.3.23
Family History	R	1.3.6.1.4.1.19376.1.5.3.1.3.14
Social History	R	1.3.6.1.4.1.19376.1.5.3.1.3.16
History of Pregnancies This section should contain one entry containing the date (TS) of last menstrual period for women of childbearing age, using LOINC Code 8665-2 DATE LAST MENSTRUAL PERIOD	R2	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4
Pertinent ROS	R	1.3.6.1.4.1.19376.1.5.3.1.3.18
Vital Signs	R	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2
Physical Examination	R	1.3.6.1.4.1.19376.1.5.3.1.1.9.15
Plan of Care	R	1.3.6.1.4.1.19376.1.5.3.1.3.31
Medications Administered	R2	1.3.6.1.4.1.19376.1.5.3.1.3.21
Intravenous Fluids Administered	R2	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.6
Procedures Performed	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.11
Test Results Lab, ECG, Radiology	R	1.3.6.1.4.1.19376.1.5.3.1.3.27
Consultations	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.8
Progress Note	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.7
ED Diagnoses	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.9
ED Disposition	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10

5.4.1.14.4 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='1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4'/>
  <id root=' ' extension=' '/>
  <code code='X-EDPHYSNT' displayName='ED Physician Note'
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>ED Physician Note</title>
  <effectiveTime value='20070620012005'/>
  <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='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.3'/>
        <!-- Required Referral Source 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 Arrival Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1'/>
        <!-- Required Chief Complaint Section content -->
      </section>
    </component>

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

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

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.6'/>
        <!-- Required if known Active Problems 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='1.3.6.1.4.1.19376.1.5.3.1.3.19'/>
        <!-- Required Current 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='1.3.6.1.4.1.19376.1.5.3.1.3.11'/>
        <!-- Required 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 Immunizations Section content -->
      </section>
    </component>

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

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

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4'/>
        <!-- Required if known History of Pregnancies Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.18'/>
        <!-- Required Pertinent ROS Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2'/>
        <!-- Required Vital Signs Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.15'/>
        <!-- Required Physical Examination 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='1.3.6.1.4.1.19376.1.5.3.1.3.21'/>
        <!-- Required if known Medications Administered       Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.6'/>
        <!-- Required if known Intravenous Fluids Administered Section content -->
      </section>
    </component>
```

```
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.11'/>
        <!-- Required Procedures Performed            Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.27'/>
        <!-- Required Test Results Lab, ECG, Radiology Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.8'/>
        <!-- Required Consultations Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.7'/>
        <!-- Required Progress Note Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.9'/>
        <!-- Required ED Diagnoses Section content -->
      </section>
    </component>

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


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

Figure 5.4-14 Sample ED Physician Note Document

5.4.1.14.5 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The ED Physician Note can only be used on Clinical Documents.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.1"]'>
     Error: The parent template identifier for ED Physician Note is not present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='code[@code = "X-EDPHYSNT"]'>
     Error: The document type code of a ED Physician Note must be X-EDPHYSNT
   </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>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.3"]'>
     <!-- Verify that all required data elements are present -->
     Error: A ED Physician Note must contain Referral Source.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
   </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: A ED Physician Note must contain Mode of Arrival.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: A ED Physician Note must contain Chief Complaint.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
   </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: A ED Physician Note must contain History of Present Illness.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
   </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: A ED Physician Note must contain Advanced Directives.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.6"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A ED Physician Note should contain Active Problems.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
   </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: A ED Physician Note should contain Resolved Problems.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
   </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: A ED Physician Note must contain Current Medications.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
   </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: A ED Physician Note must contain Allergies.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.11"]'>
     <!-- Verify that all required data elements are present -->
     Error: A ED Physician Note must contain List of Surgeries.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.23"]'>
     <!-- Verify that all required data elements are present -->
     Error: A ED Physician Note must contain Immunizations.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.14"]'>
     <!-- Verify that all required data elements are present -->
```



```
      Error: A ED Physician Note must contain Family History.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.16"]'>
      <!-- Verify that all required data elements are present -->
      Error: A ED Physician Note must contain Social History.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4"]'>
      <!-- Alert on any missing required if known elements -->
      Warning: A ED Physician Note should contain History of Pregnancies.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
      This section should contain one entry containing the date (TS) of last menstrual period for women
of childbearing age, using LOINC Code 8665-2 DATE LAST MENSTRUAL PERIOD
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.18"]'>
      <!-- Verify that all required data elements are present -->
      Error: A ED Physician Note must contain Pertinent ROS.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2"]'>
      <!-- Verify that all required data elements are present -->
      Error: A ED Physician Note must contain Vital Signs.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.15"]'>
      <!-- Verify that all required data elements are present -->
      Error: A ED Physician Note must contain Physical Examination.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
    </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: A ED Physician Note must contain Plan of Care.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
    </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: A ED Physician Note should contain Medications Administered       .
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.6"]'>
      <!-- Alert on any missing required if known elements -->
      Warning: A ED Physician Note should contain Intravenous Fluids Administered.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.6"]'>
      <!-- Alert on any missing required if known elements -->
      Warning: A ED Physician Note should contain Intravenous Fluids Administered.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.11"]'>
      <!-- Verify that all required data elements are present -->
      Error: A ED Physician Note must contain Procedures Performed           .
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.27"]'>
      <!-- Verify that all required data elements are present -->
      Error: A ED Physician Note must contain Test Results Lab, ECG, Radiology.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.8"]'>
      <!-- Verify that all required data elements are present -->
      Error: A ED Physician Note must contain Consultations.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.7"]'>
      <!-- Verify that all required data elements are present -->
      Error: A ED Physician Note must contain Progress Note.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.9"]'>
      <!-- Verify that all required data elements are present -->
      Error: A ED Physician Note must contain ED Diagnoses.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10"]'>
      <!-- Verify that all required data elements are present -->
```



```
      Error: A ED Physician Note must contain ED Disposition.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.1.4
    </assert>
  </rule>
</pattern>
```

5.4.2 CDA Header Content Modules

5.4.2.1 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.

5.4.2.1.1 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'/>
</languageCommunciation>
```

Figure 5.4-15 Language Communication Example

5.4.2.1.2 <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'.

5.4.2.1.3 <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.

5.4.2.1.4 <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.

5.4.2.1.5 <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.

5.4.2.1.6 <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.

5.4.2.2 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.

5.4.2.2.1 Specification

```
<participant typeCode='PART'>
  <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>
```

Figure 5.4-16 Employer and School Contacts Example

5.4.2.2.2 <participant typeCode='PART'>

The typeCode of the participant shall be PART.

5.4.2.2.3 <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'.

5.4.2.2.4 <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.

5.4.2.2.5 <associatedEntity classCode='CON'>

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

5.4.2.2.6 <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)

5.4.2.2.7 <associatedPerson><name>…</name></associatedPerson>

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

5.4.2.2.8 <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.

5.4.2.3 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.

5.4.2.3.1 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>
        <scopingOrganization><name></name></scopingOrganization>
        <sdtc:patient>
          <sdtc:id root='' extension=''/>
        </sdtc:patient>
      </assignedEntity>
    </performer>
  </serviceEvent>
<documentationOf>
```

Figure 5.4-17 Healthcare Providers and Pharmacies Example

5.4.2.3.2 <documentationOf>

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

5.4.2.3.3 <serviceEvent classCode="PCPR">

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

5.4.2.3.4 <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.

5.4.2.3.5 <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.

5.4.2.3.6 <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.

5.4.2.3.7 <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.

5.4.2.3.8 <assignedEntity classCode='ASSIGNED'>

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

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

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

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

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

5.4.2.3.11 <addr></addr>

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

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

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

5.4.2.3.13 <assignedPerson><name></name></assignedPerson>

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

5.4.2.3.14 <scopingOrganization><name></name></scopingOrganization>

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

5.4.2.3.15 <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.

5.4.2.4 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

5.4.2.4.1 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 5.4-18 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 5.4-19 Patient Contacts Example

5.4.2.4.2 <guardian classCode='GUARD'>

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

5.4.2.4.3 <participant typeCode='IND'>

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

5.4.2.4.4 <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.

5.4.2.4.5 <time value=' '>

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

5.4.2.4.6 <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.

5.4.2.4.7 <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.

5.4.2.4.8 <addr>

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

5.4.2.4.9 <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.

5.4.2.4.10 <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.

5.4.2.5 Authorization 1.3.6.1.4.1.19376.1.5.3.1.2.5

Each <authorization> element in the CDA Header represents an informed consent. When the document being shared represents the informed consent to a policy expressed by the XDS Affinity Domain within the document, it shall do so in an <authorization> element. More than one <authorization> element may be present. The consent to share informaiton shall have a unique identifier contained in the <id> element, representing the patient consent to that policy. The policy being consented to shall be represented in the <code> element. Note that other <authorization> elements may be present representing other sorts of consents associated with the document.

5.4.2.5.1 Specification

```
<authorization typeCode='AUTH'>
  <consent classCode='CONS' moodCode='EVN'>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.5'/>
    <id root=''/>
    <code code='' codeSystem='' codeSystemName='' displayName=''/>
    <statusCode code='completed'/>
  </consent>
</authorization>
```

Figure 5.4-20 Authorization Example

Policies are identified using an Affinity Domain specified coding system. Each coded value in that vocabulary represents one affinity domain specific policy.

5.4.2.5.2 <authorization typeCode='AUTH'>

At least one <authorization> element must be present in a consent medical document in documents shared by Document Source actors that implement the privacy option. The typeCode attribute shall be present and be valued with AUTH, indicating that this is an authorization act related to the document.

5.4.2.5.3 <consent classCode='CONS' moodCode='EVN'>

Each authorization element shall have one <consent> element. The classCode shall be present and be valued with CONS, indicating that the related act is an informed consent. The moodCode shall be EVN, indicating that this element represents and act that has occurred.

5.4.2.5.4 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.5'/>

The <templateId> element shall be recorded as shown above and identifies this consent as an authorization entry.

5.4.2.5.5 <id root=' '/>

The <consent> element shall have one identifier that is used to uniquely identify the consent act. This identifier shall contain a root attribute, and shall not contain an extension attribute.

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

The <consent> element shall have one <code> element that is used to identify the consent policy that was agreed to by the patient.

5.4.2.6 Consent Service Events 1.3.6.1.4.1.19376.1.5.3.1.2.6

Within a consent document, the effective time of the consent shall be specified within the documentationOf/serviceEvent element.

5.4.2.6.1 Specification

```
<documentationOf typeCode='DOC'>
  <serviceEvent classCode='ACT' moodCode='EVN'>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.6'/>
    <id root=''/>
    <code code='' displayName='' codeSystem='' codeSystemName=''/>
    <effectiveTime>
      <low value=''/>
      <high value=''/>
    </effectiveTime>
  </serviceEvent>
</documentationOf>
```

Figure 5.4-21 Consent Service Events Example

5.4.2.6.2 <documentationOf typeCode='DOC'>

At least one <documentationOf> element shall exist within a consent to share information, describing the service event of provision of consent. This element shall have a typeCode attribute with the value DOC.

5.4.2.6.3 <serviceEvent classCode='ACT' moodCode='EVN'>

One <serviceEvent> shall exist for each consent to share information given, describing the duration of the provision of consent. This element shall have a classCode attribute set to ACT, and a moodCode attribute of EVN.

5.4.2.6.4 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.6'/>

The <templateId> element shall be recorded exactly as shown above, and identifies this <serviceEvent> as recording consent to share information.

5.4.2.6.5 <id root=' ' />

The service event shall have one <id> element, providing an identifier for the service event. The root attribute of this element shall be present, and shall be a GUID or OID. The extension attribute shall not be present.

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

The <code> element shall be present, and shall indicate the consent given. The code attribute indicates the consent given, and the codeSystem attribute indicates the code system from which this consent is given. The displayName attribute may be present, and

describes the consent given. The codeSystemName attribute may be present, and describes the code system.

5.4.2.6.7 <effectiveTime><low value=' '/><high value=' '/></effectiveTime>

The <effectiveTime> element shall be present, and shall indicated the effective time range over which consent is given. The low value must be provided . The high value may be present. If present, is shall indicate the maximum effective time of the consent.

5.4.3 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.

5.4.3.1 Reasons for Care

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

5.4.3.1.1 Reason for Referral Section

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 5.4-22 Sample Reason for Referral Section

5.4.3.1.1.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.1'>
 <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='../cda:section'>
      Error: The Reason for Referral can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "42349-1"]'>
     Error: The section type code of a Reason for Referral must be 42349-1
   </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>
```

5.4.3.1.2 Coded Reason for Referral Section

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

5.4.3.1.2.1 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 5.4-23 Sample Coded Reason for Referral Section

5.4.3.1.2.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.2'>
 <rule context='*[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='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='code[@code = "42349-1"]'>
     Error: The section type code of a Coded Reason for Referral must be 42349-1
   </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>
   <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: A Coded Reason for Referral must contain Simple Observations.
     See http://www.ihe.net/index.php/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: A Coded Reason for Referral must contain Conditions Entry.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.3.2
   </assert>
 </rule>
</pattern>
```

5.4.3.1.3 Chief Complaint Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1	
General Description	This section 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 5.4-24 Sample Chief Complaint Section

5.4.3.1.3.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1'>
 <rule context='*[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='code[@code = "10154-3"]'>
     Error: The section type code of a Chief Complaint must be 10154-3
   </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>
```

5.4.3.1.4 Hospital Admission Diagnosis Section

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	R	Conditions 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 Conditions Entry element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5'/>
        :
    </entry>

  </section>
</component>
```

Figure 5.4-25 Sample Hospital Admission Diagnosis Section

5.4.3.1.4.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.3'>
 <rule context='*[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='code[@code = "46241-6"]'>
     Error: The section type code of a Hospital Admission Diagnosis must be 46241-6
   </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>
   <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: A Hospital Admission Diagnosis must contain Conditions Entry.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.3.3
   </assert>
 </rule>
</pattern>
```

5.4.3.2 Other Condition Histories

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

5.4.3.2.1 History of Present Illness Section

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 5.4-26 Sample History of Present Illness Section

5.4.3.2.1.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.4'>
 <rule context='*[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='code[@code = "10164-2"]'>
     Error: The section type code of a History of Present Illness must be 10164-2
   </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>
```

5.4.3.2.2 Hospital Course Section

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 5.4-27 Sample Hospital Course Section

5.4.3.2.2.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.5'>
 <rule context='*[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='code[@code = "8648-8"]'>
     Error: The section type code of a Hospital Course must be 8648-8
   </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>
```

5.4.3.2.3 Active Problems Section

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

5.4.3.2.3.1 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 5.4-28 Sample Active Problems Section

5.4.3.2.3.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.6'>
 <rule context='*[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='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='code[@code = "11450-4"]'>
     Error: The section type code of a Active Problems must be 11450-4
   </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>
   <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: A Active Problems must contain Problem Concern Entry.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.3.6
   </assert>
 </rule>
</pattern>
```

5.4.3.2.4 Discharge Diagnosis Section

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 5.4-29 Sample Discharge Diagnosis Section

5.4.3.2.4.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.7'>
 <rule context='*[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='code[@code = "11535-2"]'>
     Error: The section type code of a Discharge Diagnosis must be 11535-2
   </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>
   <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: A Discharge Diagnosis must contain Problem Concern Entry.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.3.7
   </assert>
 </rule>
</pattern>
```

5.4.3.2.5 Resolved Problems Section

Template ID		1.3.6.1.4.1.19376.1.5.3.1.3.8
General Description		The resolved problems 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 5.4-30 Sample Resolved Problems Section

5.4.3.2.5.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.8'>
 <rule context='*[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 Resolved Problems can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "11348-0"]'>
     Error: The section type code of a Resolved Problems must be 11348-0
   </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>
   <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: A Resolved Problems must contain Problem Concern Entry.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.3.8
   </assert>
 </rule>
</pattern>
```

For Public Comment	Should we change the name of this section to Past Medical History, or Past Problems?

5.4.3.2.6 Encounter Histories Section

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

5.4.3.2.6.1 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 5.4-31 Sample Encounter Histories Section

5.4.3.2.6.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3'>
 <rule context='*[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='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='code[@code = "46240-8"]'>
     Error: The section type code of a Encounter Histories must be 46240-8
   </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>
   <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: A Encounter Histories must contain Encounters.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3
   </assert>
 </rule>
</pattern>
```

5.4.3.2.7 History of Outpatient Visits Section

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 5.4-32 Sample History of Outpatient Visits Section

5.4.3.2.7.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.9'>
 <rule context='*[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='code[@code = "11346-4"]'>
     Error: The section type code of a History of Outpatient Visits must be 11346-4
   </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>
```

5.4.3.2.8 History of Inpatient Visits Section

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 5.4-33 Sample History of Inpatient Visits Section

5.4.3.2.8.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.10'>
 <rule context='*[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='code[@code = "11336-5"]'>
     Error: The section type code of a History of Inpatient Visits must be 11336-5
   </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>
```

5.4.3.2.9 List of Surgeries Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.11	
Parent Template	2.16.840.1.113883.10.20.1.12 (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

5.4.3.2.9.1 Parent Template

The parent of this template is 2.16.840.1.113883.10.20.1.12.

```
<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 5.4-34 Sample List of Surgeries Section

5.4.3.2.9.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.11'>
 <rule context='*[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='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='code[@code = "47519-4"]'>
     Error: The section type code of a List of Surgeries must be 47519-4
   </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>
```

5.4.3.2.10 Coded List of Surgeries Section

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

5.4.3.2.10.1 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 5.4-35 Sample Coded List of Surgeries Section

5.4.3.2.10.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.12'>
 <rule context='*[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='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='code[@code = "47519-4"]'>
     Error: The section type code of a Coded List of Surgeries must be 47519-4
   </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>
   <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: A Coded List of Surgeries must contain Procedure Entry .
     See http://www.ihe.net/index.php/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: A Coded List of Surgeries should contain References Entry.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.3.12
   </assert>
 </rule>
</pattern>
```

5.4.3.2.11 Allergies and Other Adverse Reactions Section

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

5.4.3.2.11.1 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 5.4-36 Sample Allergies and Other Adverse Reactions Section

5.4.3.2.11.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.13'>
 <rule context='*[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='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='code[@code = "48765-2"]'>
     Error: The section type code of a Allergies and Other Adverse Reactions must be 48765-2
   </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>
   <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: A Allergies and Other Adverse Reactions must contain Allergies and Intolerances Concern.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.3.13
   </assert>
 </rule>
</pattern>
```

5.4.3.2.12 Family Medical History Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.14

Parent Template	2.16.840.1.113883.10.20.1.4 (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

5.4.3.2.12.1 Parent Template

The parent of this template is 2.16.840.1.113883.10.20.1.4.

```
<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 5.4-37 Sample Family Medical History Section

5.4.3.2.12.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.14'>
 <rule context='*[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='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='code[@code = "10157-6"]'>
     Error: The section type code of a Family Medical History must be 10157-6
   </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>
```

5.4.3.2.13 Coded Family Medical History Section

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

6120

5.4.3.2.13.1 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 5.4-38 Sample Coded Family Medical History Section

5.4.3.2.13.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.15'>
 <rule context='*[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='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='code[@code = "10157-6"]'>
     Error: The section type code of a Coded Family Medical History must be 10157-6
   </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>
   <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: A Coded Family Medical History must contain Family History Organizer.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.3.15
   </assert>
 </rule>
</pattern>
```

5.4.3.2.14 Pre-procedure Family Medical History Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.5
Parent Template	1.3.6.1.4.1.19376.1.5.3.1.3.15 (1.3.6.1.4.1.19376.1.5.3.1.3.15)
General Description	The pre-procedure family history section shall contain a description of the genetic family members who have suffered complications during anesthesia such

	as malignant hyperthermia, bleeding, etc. It 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

5.4.3.2.14.1 Parent Template

The parent of this template is 1.3.6.1.4.1.19376.1.5.3.1.3.15.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.15'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.5'/>
    <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 5.4-39 Sample Pre-procedure Family Medical History Section

5.4.3.2.14.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.5'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.5"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
     Error: The Pre-procedure Family Medical History can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.3.15"]'>
     Error: The parent template identifier for Pre-procedure Family Medical History is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "10157-6"]'>
     Error: The section type code of a Pre-procedure Family Medical History must be 10157-6
   </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>
```

5.4.3.2.15 Social History Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.16	
Parent Template	2.16.840.1.113883.10.20.1.15 (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

5.4.3.2.15.1 Parent Template

The parent of this template is 2.16.840.1.113883.10.20.1.15.

```
<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 5.4-40 Sample Social History Section

5.4.3.2.15.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.16'>
 <rule context='*[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='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='code[@code = "29762-2"]'>
     Error: The section type code of a Social History must be 29762-2
   </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>
```

5.4.3.2.16 Functional Status Section

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

5.4.3.2.16.1 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 5.4-41 Sample Functional Status Section

5.4.3.2.16.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.17'>
 <rule context='*[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='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='code[@code = "47420-5"]'>
     Error: The section type code of a Functional Status must be 47420-5
   </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>
```

5.4.3.2.17 Coded Functional Status Assessment Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.12.2.1
Parent Template	Functional Status (1.3.6.1.4.1.19376.1.5.3.1.3.17)
General Description	The coded functional status assessment section provided a machine readable and narrative description of the patient's status of normal functioning at the time the document was created. Functional status includes information concerning: Ambulatory ability Mental status or competency Activities of Daily Living (ADL's) including bathing, dressing, feeding, grooming Home/living situation having an effect on the health status of the patient Ability to care for self Social activity, including issues with social cognition, participation with friends and acquaintances other than family members Occupation activity, including activities partly or directly related to working, housework or volunteering, family and home responsibilities or activities related to home and family Communication ability, including issues with speech, writing or cognition required for communication Perception, including sight, hearing, taste, skin sensation, kinesthetic sense, proprioception, or balance

LOINC Code	Opt	Description
47420-5	R	Functional Status Assessment
Subsections	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.1.12.2.2	O	Pain Scale Assessment
1.3.6.1.4.1.19376.1.5.3.1.1.12.2.3	O	Braden Score Assessment
1.3.6.1.4.1.19376.1.5.3.1.1.12.2.4	O	Geriatric Depression Scale
1.3.6.1.4.1.19376.1.5.3.1.1.12.2.5	O	Minimum Data Set

6295 At least one of the above subsections shall be present

5.4.3.2.17.1 Standards

CDAR2 HL7 CDA Release 2.0

CRS HL7 Care Record Summary

CCD ASTM/HL7 Continuity of Care Document

LOINC Logical Observation Identifier Names and Codes

SNOMED Systemitized Nomenclature of Medicine Clinical Terminology

5.4.3.2.17.2 Parent Template

The parent of this template is Functional Status.


```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.17'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.2.1'/>
    <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>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.2.2'/>
        <!-- Optional Pain Scale Assessment Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.2.3'/>
        <!-- Optional Braden Score Assessment Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.2.4'/>
        <!-- Optional Geriatric Depression Scale Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.2.5'/>
        <!-- Optional Minimum Data Set Section content -->
      </section>
    </component>


  </section>
</component>
```

Figure 5.4-42 Sample Coded Functional Status Assessment Section

5.4.3.2.17.3 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.12.2.1'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.12.2.1"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Coded Functional Status Assessment can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.3.17"]'>
     Error: The parent template identifier for Coded Functional Status Assessment is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "47420-5"]'>
     Error: The section type code of a Coded Functional Status Assessment must be 47420-5
   </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>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.12.2.2"]'>
     <-- Note any missing optional elements -->
     Note: This Coded Functional Status Assessment does not contain Pain Scale Assessment.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.12.2.1
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.12.2.3"]'>
     <-- Note any missing optional elements -->
     Note: This Coded Functional Status Assessment does not contain Braden Score Assessment.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.12.2.1
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.12.2.4"]'>
     <-- Note any missing optional elements -->
     Note: This Coded Functional Status Assessment does not contain Geriatric Depression Scale.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.12.2.1
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.12.2.5"]'>
     <-- Note any missing optional elements -->
     Note: This Coded Functional Status Assessment does not contain Minimum Data Set.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.12.2.1
   </assert>
   <assert test="./cda:component/cda:section/cda:templateId[
                  @root = '1.3.6.1.4.1.19376.1.5.3.1.1.12.2.2' or
                  @root = '1.3.6.1.4.1.19376.1.5.3.1.1.12.2.3' or
                  @root = '1.3.6.1.4.1.19376.1.5.3.1.1.12.2.4' or
                  @root = '1.3.6.1.4.1.19376.1.5.3.1.1.12.2.5']">
     At least one of the subsections must be a coded functional assessment.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.12.2.1
   </assert>
 </rule>
</pattern>
```

5.4.3.2.18 Pain Scale Assessment Section

Template ID		1.3.6.1.4.1.19376.1.5.3.1.1.12.2.2
General Description		The Pain Scale Assessment contains a coded observation reflecting the patient's reported intensity of pain on a scale from 0 to 10.
LOINC Code	**Opt**	**Description**
38208-5	R	Pain severity
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.1.12.3.1	R	Pain Score Observation


```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.2.2'/>
    <id root=' ' extension=' '/>
    <code code='38208-5' displayName='Pain severity'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Pain Score Observation element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.1'/>
        :
    </entry>

  </section>
</component>
```

Figure 5.4-43 Sample Pain Scale Assessment Section

5.4.3.2.18.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.12.2.2'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.12.2.2"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
     Error: The Pain Scale Assessment can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "38208-5"]'>
     Error: The section type code of a Pain Scale Assessment must be 38208-5
   </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>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.12.3.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Pain Scale Assessment must contain Pain Score Observation.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.12.2.2
   </assert>
 </rule>
</pattern>
```

5.4.3.2.19 Braden Score Section

Template ID		1.3.6.1.4.1.19376.1.5.3.1.1.12.2.3
General Description		This section reports the braden score and its related assessments in machine and human readable form.
LOINC Code	**Opt**	**Description**
38228-3	R	BRADEN SCALE SKIN ASSESSMENT PANEL
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.1.12.3.2	R	Braden Score Observation


```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.2.3'/>
    <id root=' ' extension=' '/>
    <code code='38228-3' displayName='BRADEN SCALE SKIN ASSESSMENT PANEL'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Braden Score Observation element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.2'/>
        :
    </entry>

  </section>
</component>
```

Figure 5.4-44 Sample Braden Score Section

5.4.3.2.19.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.12.2.3'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.12.2.3"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
     Error: The Braden Score can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "38228-3"]'>
     Error: The section type code of a Braden Score must be 38228-3
   </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>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.12.3.2"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Braden Score must contain Braden Score Observation.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.12.2.3
   </assert>
 </rule>
</pattern>
```

5.4.3.2.20 Geriatric Depression Scale Section

Template ID		1.3.6.1.4.1.19376.1.5.3.1.1.12.2.4
General Description		This section reports the Geriatric Depression Scale score and its related assessments in machine and human readable form.
LOINC Code	**Opt**	**Description**
48542-5	R	Geriatric Depression Scale (GDS) Panel
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.1.12.3.4	R	Geriatric Depression Score Observation

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.2.4'/>
    <id root=' ' extension=' '/>
    <code code='48542-5' displayName='Geriatric Depression Scale (GDS) Panel'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
         :
      <!-- Required Geriatric Depression Score Observation element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.4'/>
         :
    </entry>

  </section>
</component>
```

Figure 5.4-45 Sample Geriatric Depression Scale Section

5.4.3.2.20.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.12.2.4'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.12.2.4"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
     Error: The Geriatric Depression Scale can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "48542-5"]'>
     Error: The section type code of a Geriatric Depression Scale must be 48542-5
   </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>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.12.3.4"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Geriatric Depression Scale must contain Geriatric Depression Score Observation.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.12.2.4
   </assert>
 </rule>
</pattern>
```

5.4.3.2.21 Physical Function Section

Template ID		1.3.6.1.4.1.19376.1.5.3.1.1.12.2.5
General Description		This section reports scores from section G of the Minimum Data Set.
LOINC Code	**Opt**	**Description**
46006-3	R	Physical functioning and structural problems
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.1.12.3.7	O	Survey Panel At least one Survey Panel or Survey Observation shall be present.
1.3.6.1.4.1.19376.1.5.3.1.1.12.3.6	O	Survey Observations At least one Survey Panel or Survey Observation shall be present.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.2.5'/>
    <id root=' ' extension=' '/>
    <code code='46006-3' displayName='Physical functioning and structural problems'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Optional Survey Panel element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.7'/>
        :
    </entry>
    <entry>
        :
      <!-- Optional Survey Observations element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.6'/>
        :
    </entry>

  </section>
</component>
```

Figure 5.4-46 Sample Physical Function Section

5.4.3.2.21.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.12.2.5'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.12.2.5"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
     Error: The Physical Function can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "46006-3"]'>
     Error: The section type code of a Physical Function must be 46006-3
   </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>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.12.3.7"]'>
     <-- Note any missing optional elements -->
     Note: This Physical Function does not contain Survey Panel.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.12.2.5
     At least one Survey Panel or Survey Observation shall be present.
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.12.3.6"]'>
     <-- Note any missing optional elements -->
     Note: This Physical Function does not contain Survey Observations.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.12.2.5
     At least one Survey Panel or Survey Observation shall be present.
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.12.3.6"] or
                 .//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.12.3.7"]'>
     At least one Survey Panel or Survey Observation shall be present.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.12.2.5
   </assert>
 </rule>
</pattern>
```

5.4.3.2.22 Constraints

Survey Panels found in this section shall be identified using the panel codes found in the table below, and shall contain one or more survey observations from that panel. Survey Observations found in this section shall use the LOINC codes from the table below to express the answer to one or more questions from the Minimum Data Set

Section G. The Survey Observations shall not contain a <methodCode> or <targetSiteCode> element, as these are not appropriate to the MDS Survey instrument.

Panel Code	Observation Code	Description	Data Type	Value Set
46007-1	Panel	ADL self performance or support		
	45588-1	Bed mobility - self-performance	CO	2.16.840.1.113883.6.257.755
	45589-9	Bed mobility - support provided	CO	2.16.840.1.113883.6.257.768
	45590-7	Transfer - self-performance	CO	2.16.840.1.113883.6.257.755
	45591-5	Transfer - support provided	CO	2.16.840.1.113883.6.257.768
	45592-3	Walk in room - self-performance	CO	2.16.840.1.113883.6.257.755
	45593-1	Walk in room - support provided	CO	2.16.840.1.113883.6.257.768
	45594-9	Walk in corridor - self-performance	CO	2.16.840.1.113883.6.257.755
	45595-6	Walk in corridor - support provided	CO	2.16.840.1.113883.6.257.768
	45596-4	Locomotion on unit - self-performance	CO	2.16.840.1.113883.6.257.755
	45597-2	Locomotion on unit - support provided	CO	2.16.840.1.113883.6.257.768
	45598-0	Locomotion off unit - self-performance	CO	2.16.840.1.113883.6.257.755
	45599-8	Locomotion off unit - support provided	CO	2.16.840.1.113883.6.257.768
	45600-4	Dressing - self-performance	CO	2.16.840.1.113883.6.257.755
	45601-2	Dressing - support provided	CO	2.16.840.1.113883.6.257.768
	45602-0	Eating - self-performance	CO	2.16.840.1.113883.6.257.755
	45603-8	Eating - support provided	CO	2.16.840.1.113883.6.257.768
	45604-6	Toilet use - self-performance	CO	2.16.840.1.113883.6.257.755
	45605-3	Toilet use - support provided	CO	2.16.840.1.113883.6.257.768
	45606-1	Personal hygiene - self-	CO	2.16.840.1.113883.6.257.755

		performance		
	45607-9	Personal hygiene - support provided	CO	2.16.840.1.113883.6.257.768
46008-9	Panel	Bathing		
	45608-7	Bathing - self-performance	CO	2.16.840.1.113883.6.257.860
	45609-5	Bathing - support provided	CO	2.16.840.1.113883.6.257.768
46009-7	Panel	Test for balance		
	45610-3	Balance while standing	CO	2.16.840.1.113883.6.257.876
	45523-8	Balance while sitting	CO	2.16.840.1.113883.6.257.876
46010-5	Functional limitation in range of motion			
	45524-6	Range of motion^Neck	CO	2.16.840.1.113883.6.257.889
	45525-3	Voluntary movement^Neck	CO	2.16.840.1.113883.6.257.898
	45526-1	Range of motion^Upper Extremity	CO	2.16.840.1.113883.6.257.889
	45527-9	Voluntary movement^Upper Extremity	CO	2.16.840.1.113883.6.257.898
	45528-7	Range of motion^Hand	CO	2.16.840.1.113883.6.257.889
	45529-5	Voluntary movement^Hand	CO	2.16.840.1.113883.6.257.898
	45530-3	Range of motion^Lower Extremity	CO	2.16.840.1.113883.6.257.889
	45531-1	Voluntary movement^Lower Extremity	CO	2.16.840.1.113883.6.257.898
	45532-9	Range of motion^Foot	CO	2.16.840.1.113883.6.257.889
	45533-7	Voluntary movement^Foot	CO	2.16.840.1.113883.6.257.898
	45534-5	Other - range of motion	CO	2.16.840.1.113883.6.257.889
	45535-2	Other - voluntary movement	CO	2.16.840.1.113883.6.257.898
46011-3	Panel	Modes of locomotion		
	45536-0	Uses cane, walker or crutch	CO	2.16.840.1.113883.6.257.117
	45537-8	Wheeled self	CO	2.16.840.1.113883.6.257.117
	45538-6	Other person wheeled	CO	2.16.840.1.113883.6.257.117

	45539-4	Uses wheelchair for primary locomotion	CO	2.16.840.1.113883.6.257.117
	45540-2	No modes of locomotion	CO	2.16.840.1.113883.6.257.117
46012-1	Panel	Modes of transfer		
	45541-0	Bedfast all or most of the time	CO	2.16.840.1.113883.6.257.117
	45542-8	Bed rails for bed mobility or transfer	CO	2.16.840.1.113883.6.257.117
	45543-6	Lifted manually	CO	2.16.840.1.113883.6.257.117
	45544-4	Lifted mechanically	CO	2.16.840.1.113883.6.257.117
	45545-1	Transfer aid	CO	2.16.840.1.113883.6.257.117
	45546-9	No mode of transfer	CO	2.16.840.1.113883.6.257.117
No Panel	45611-1	Task segmentation	CO	2.16.840.1.113883.6.257.117
46013-9	Panel	ADL functional rehabilitation potential		
	45612-9	Resident sees increased independence capability	CO	2.16.840.1.113883.6.257.117
	45613-7	Staff sees increased independence capability	CO	2.16.840.1.113883.6.257.117
	45614-5	Resident slow performing tasks or activity	CO	2.16.840.1.113883.6.257.117
	45615-2	Difference in morning to evening activities of daily living	CO	2.16.840.1.113883.6.257.117
	45616-0	Activities of daily living rehabilitation potential - none of above	CO	2.16.840.1.113883.6.257.117
	45617-8	Change in activities of daily living function	CO	2.16.840.1.113883.6.257.464

6595 The coded orginal values used in the observations above are described in more detail in the table below.

Explanation	Coded Value
2.16.840.1.113883.6.257.755	
INDEPENDENT-No help or oversight -OR- Help/oversight provided only 1 or 2 times during last 7 days	0

SUPERVISION-Oversight, encouragement or cueing provided 3 or more times during last7 days -OR-Supervision (3 or more times) plus physical assistance provided only 1 or 2 times during last 7 days	1
LIMITED ASSISTANCE-Resident highly involved in activity; received physical help in guided maneuvering of limbs or other nonweight bearing assistance 3 or more times - OR-More help provided only 1 or 2 times during last 7 days	2
EXTENSIVE ASSISTANCE-While resident performed part of activity, over last 7-day period, help of following type(s) provided 3 or more times: - Weight-bearing support - Full staff performance during part (but not all) of last 7 days	3
TOTAL DEPENDENCE-Full staff performance of activity during entire 7 days	4
ACTIVITY DID NOT OCCUR during entire 7 days	8
2.16.840.1.113883.6.257.768	
No setup or physical help from staff	0
Setup help only	1
One person physical assist	2
ADL activity itself did not occur during entire 7 days	8
2.16.840.1.113883.6.257.860	
Independent-No help provided	0
Supervision-Oversight help only	1
Physical help limited to transfer only	2
Physical help in part of bathing activity	3
Total dependence	4
Activity itself did not occur during entire 7 days	8
2.16.840.1.113883.6.257.876	
Maintained position as required in test	0
Unsteady, but able to rebalance self without physical support	1
Partial physical support during test; or stands (sits) but does not follow directions for test	2
Not able to attempt test without physical help	3
2.16.840.1.113883.6.257.889	
No limitation	0
Limitation on one side	1

Limitation on both sides	2
2.16.840.1.113883.6.257.898	
No loss	0
Partial loss	1
Full loss	2
2.16.840.1.113883.6.257.117	
No	0
Yes	1
UTD	-
2.16.840.1.113883.6.257.464	
No change	0
Improved	1
Deteriorated	2

5.4.3.2.23 Review of Systems Section

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 5.4-47 Sample Review of Systems Section

5.4.3.2.23.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.18'>
 <rule context='*[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='code[@code = "10187-3"]'>
     Error: The section type code of a Review of Systems must be 10187-3
   </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>
```

5.4.3.2.24 Preprocedure Review of Systems Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.13	
Parent Template	Review of Systems (1.3.6.1.4.1.19376.1.5.3.1.3.18)	
General Description	The pre-procedure review of systems section shall contain only required and optional subsections dealing with the responses the patient gave to a set of routine questions on body systems in general and specific risks of anesthesia not covered in general review of systems.	
LOINC Code	**Opt**	**Description**
10187-3	R	REVIEW OF SYSTEMS
Subsections	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.1.9.46	R	History of Implanted Medical Devices
1.3.6.1.4.1.19376.1.5.3.1.1.9.47	R2	Pregnancy Status History
1.3.6.1.4.1.19376.1.5.3.1.1.9.14	R	Anesthesia Risk Review of Systems

5.4.3.2.24.1 Parent Template

The parent of this template is Review of Systems.


```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.18'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.13'/>
    <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>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.46'/>
        <!-- Required History of Implanted Medical Devices Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.47'/>
        <!-- Required if known Pregnancy Status History Section content -->
      </section>
    </component>

    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.14'/>
        <!-- Required Anesthesia Risk Review of Systems Section content -->
      </section>
    </component>


  </section>
</component>
```

Figure 5.4-48 Sample Preprocedure Review of Systems Section

5.4.3.2.24.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.13'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.13"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Preprocedure Review of Systems can only be used on sections.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.3.18"]'>
     Error: The parent template identifier for Preprocedure Review of Systems is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "10187-3"]'>
     Error: The section type code of a Preprocedure Review of Systems must be 10187-3
   </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>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.46"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Preprocedure Review of Systems must contain History of Implanted Medical Devices.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9.13
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.47"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A Preprocedure Review of Systems should contain Pregnancy Status History.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9.13
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.14"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Preprocedure Review of Systems must contain Anesthesia Risk Review of Systems.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9.13
   </assert>
 </rule>
</pattern>
```


5.4.3.2.25 Hazardous Working Conditions Section

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 5.4-49 Sample Hazardous Working Conditions Section

5.4.3.2.25.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5.3.1'>
 <rule context='*[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='code[@code = "10161-8"]'>
     Error: The section type code of a Hazardous Working Conditions must be 10161-8
   </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>
```

5.4.3.2.26 Pregnancy History Section

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 5.4-50 Sample Pregnancy History Section

5.4.3.2.26.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4'>
 <rule context='*[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='code[@code = "10162-6"]'>
     Error: The section type code of a Pregnancy History must be 10162-6
   </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>
   <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: A Pregnancy History must contain Pregnancy Observation .
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4
   </assert>
 </rule>
</pattern>
```

5.4.3.2.27 Estimated Due Dates Section Section

Template ID		1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.1
General Description		This section houses the physicians best estimate of the patients due date. This is generally done both on an initial evaluation, and later confirmed at 18-20 weeks. The date is supported by evidence such as the patients history of last menstral period, a physical examination, or ultrasound measurements. If an gestational age based on ultrasound is present, it is generally considered the most accurate measurement and so that date would be chosen.
LOINC Code	**Opt**	**Description**
(xx-edd-section)	R	ESTIMATED DELIVERY DATE-^PATIENT-FIND-PT-NAR-
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.1.11.2.3.1	R	Estimated Due Date Observation This is a simple observation to represent the estimated due date with a supporting observation or observations that state the method used and date implied by that method. If one observation is present, then it is to be interpreted as the initial EDD. If the initial observation dates indicate the EDD is within the 18 to 20 weeks completed

		gestation, that observation will also populate the 18-20 week update. If the initial observation indicates an EDD of more than 20 weeks EGA, then no value will be placed in the 18-20 week update field.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.1'/>
    <id root=' ' extension=' '/>
    <code code='(xx-edd-section)' displayName='ESTIMATED DELIVERY DATE-^PATIENT-FIND-PT-NAR-'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
         :
      <!-- Required Estimated Due Date Observation element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.11.2.3.1'/>
         :
    </entry>

  </section>
</component>
```

Figure 5.4-51 Sample Estimated Due Dates Section Section

5.4.3.2.27.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.1'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.1"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Estimated Due Dates Section can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "(xx-edd-section)"]'>
     Error: The section type code of a Estimated Due Dates Section must be (xx-edd-section)
   </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>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.11.2.3.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Estimated Due Dates Section must contain Estimated Due Date Observation.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.1
     This is a simple observation to represent the estimated due date with a supporting observation or
observations that state the method used and date implied by that method. If one observation is
present, then it is to be interpreted as the initial EDD. If the initial observation dates indicate
the EDD is within  the 18 to 20 weeks completed gestation, that observation will also populate the 18-
20 week update.  If the initial observation indicates an EDD of more than 20 weeks EGA, then no value
will be placed in the 18-20 week update field.
   </assert>
 </rule>
</pattern>
```

5.4.3.2.28 Medical Devices Section

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

5.4.3.2.28.1 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 5.4-52 Sample Medical Devices Section

5.4.3.2.28.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5.3.5'>
 <rule context='*[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='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='code[@code = "46264-8"]'>
     Error: The section type code of a Medical Devices must be 46264-8
   </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>
```

5.4.3.2.29 Foreign Travel Section

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 5.4-53 Sample Foreign Travel Section

5.4.3.2.29.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5.3.6'>
 <rule context='*[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='code[@code = "10182-4"]'>
     Error: The section type code of a Foreign Travel must be 10182-4
   </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>
```

5.4.3.2.30 History of Tobacco Use Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.8	
General Description	The history of tobacco use section shall contain a description of the responses the patient gave to a set of routine questions on the history of tobacco use.	
LOINC Code	**Opt**	**Description**
11366-2	R	HISTORY OF TOBACCO USE

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.8'/>
    <id root=' ' extension=' '/>
    <code code='11366-2' displayName='HISTORY OF TOBACCO USE'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 5.4-54 Sample History of Tobacco Use Section

5.4.3.2.30.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.8'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.8"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The History of Tobacco Use can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "11366-2"]'>
     Error: The section type code of a History of Tobacco Use must be 11366-2
   </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>
```

5.4.3.2.31 Current Alcohol/Substance Abuse Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.10	
General Description	The history of alcohol/substance abuse section shall contain a description of the responses the patient gave to a set of routine questions on the current abuse of alcohol or other substances.	
LOINC Code	**Opt**	**Description**
18663-5	R	HISTORY OF PRESENT ALCOHOL AND/OR SUBSTANCE ABUSE

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.10'/>
    <id root=' ' extension=' '/>
    <code code='18663-5' displayName='HISTORY OF PRESENT ALCOHOL AND/OR SUBSTANCE ABUSE'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 5.4-55 Sample Current Alcohol/Substance Abuse Section

5.4.3.2.31.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.10'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.10"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Current Alcohol/Substance Abuse can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "18663-5"]'>
     Error: The section type code of a Current Alcohol/Substance Abuse must be 18663-5
   </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>
```


5.4.3.2.32 Transfusion History Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.12	
General Description	The transfusion history section shall contain a description of the blood products the patient has received in the past, including any reactions to blood products. It shall include entries for substance administration as described in the Entry Content Modules.	
LOINC Code	**Opt**	**Description**
TBD	R	BLOOD PRODUCTS ADMINISTRATION

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.12'/>
    <id root=' ' extension=' '/>
    <code code='TBD' displayName='BLOOD PRODUCTS ADMINISTRATION'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 5.4-56 Sample Transfusion History Section

5.4.3.2.32.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.12'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.12"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Transfusion History can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "TBD"]'>
     Error: The section type code of a Transfusion History must be TBD
   </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>
```

5.4.3.3 Medications

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

5.4.3.3.1 Medications Section

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

5.4.3.3.1.1 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 5.4-57 Sample Medications Section

5.4.3.3.1.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.19'>
 <rule context='*[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='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='code[@code = "10160-0"]'>
     Error: The section type code of a Medications must be 10160-0
   </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>
   <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: A Medications must contain Medications.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.3.19
   </assert>
 </rule>
</pattern>
```

5.4.3.3.2 Admission Medication History Section

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 5.4-58 Sample Admission Medication History Section

5.4.3.3.2.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.20'>
 <rule context='*[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='code[@code = "42346-7"]'>
     Error: The section type code of a Admission Medication History must be 42346-7
   </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>
   <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: A Admission Medication History must contain Medications.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.3.20
   </assert>
 </rule>
</pattern>
```

}}

5.4.3.3.3 Medications Administered Section

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 5.4-59 Sample Medications Administered Section

5.4.3.3.3.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.21'>
 <rule context='*[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='code[@code = "18610-6"]'>
     Error: The section type code of a Medications Administered must be 18610-6
   </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>
   <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: A Medications Administered must contain Medications.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.3.21
   </assert>
 </rule>
</pattern>
```

5.4.3.3.4 Hospital Discharge Medications Section

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 5.4-60 Sample Hospital Discharge Medications Section

5.4.3.3.4.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.22'>
 <rule context='*[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='code[@code = "10183-2"]'>
     Error: The section type code of a Hospital Discharge Medications must be 10183-2
   </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>
   <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: A Hospital Discharge Medications must contain Medications.
     See http://www.ihe.net/index.php/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"

5.4.3.3.5 Immunizations Section

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

5.4.3.3.5.1 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 5.4-61 Sample Immunizations Section

5.4.3.3.5.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.23'>
 <rule context='*[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='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='code[@code = "11369-6"]'>
     Error: The section type code of a Immunizations must be 11369-6
   </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>
   <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: A Immunizations must contain Immunization.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.3.23
   </assert>
 </rule>
</pattern>
```

5.4.3.4 Physical Exams

5.4.3.4.1 Physical Exam Section

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**
22029-3	R	PHYSICAL EXAM.TOTAL

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.24'/>
    <id root=' ' extension=' '/>
    <code code='22029-3' displayName='PHYSICAL EXAM.TOTAL'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 5.4-62 Sample Physical Exam Section

5.4.3.4.1.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.24'>
 <rule context='*[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='code[@code = "22029-3"]'>
     Error: The section type code of a Physical Exam must be 22029-3
   </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>
```

5.4.3.4.2 Physical Exam Section

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**
22029-3	R	PHYSICAL EXAM.TOTAL
Entries	**Opt**	**Description**
Subsections	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.3.49	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
1.3.6.1.4.1.19376.1.5.3.1.1.9.34	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

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5.4.3.4.2.1 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='22029-3' displayName='PHYSICAL EXAM.TOTAL'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.49'/>
        <!-- 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='1.3.6.1.4.1.19376.1.5.3.1.1.9.34'/>
        <!-- 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>


  </section>
</component>
```

Figure 5.4-63 Sample Physical Exam Section

5.4.3.4.2.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.15'>
 <rule context='*[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='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='code[@code = "22029-3"]'>
     Error: The section type code of a Physical Exam must be 22029-3
   </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>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.49"]'>
     <-- Note any missing optional elements -->
     Note: This Physical Exam does not contain Vital Signs.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9.15
     Vital signs may be a subsection of the physical exam or they may stand alone
   </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 does not contain General Appearance.
     See http://www.ihe.net/index.php/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 does not contain Visible Implanted Medical Devices.
     See http://www.ihe.net/index.php/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 does not contain Integumentary System.
     See http://www.ihe.net/index.php/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 does not contain Head.
     See http://www.ihe.net/index.php/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 does not contain Eyes.
     See http://www.ihe.net/index.php/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 does not contain Ears, Nose, Mouth and Throat.
     See http://www.ihe.net/index.php/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 does not contain Ears.
     See http://www.ihe.net/index.php/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 does not contain Nose.
     See http://www.ihe.net/index.php/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 does not contain Mouth, Throat, and Teeth.
     See http://www.ihe.net/index.php/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 does not contain Neck.
     See http://www.ihe.net/index.php/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 does not contain Endocrine System.
      See http://www.ihe.net/index.php/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 does not contain Thorax and Lungs.
      See http://www.ihe.net/index.php/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 does not contain Chest Wall.
      See http://www.ihe.net/index.php/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 does not contain Breasts.
      See http://www.ihe.net/index.php/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 does not contain Heart.
      See http://www.ihe.net/index.php/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 does not contain Respiratory System.
      See http://www.ihe.net/index.php/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 does not contain Abdomen.
      See http://www.ihe.net/index.php/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 does not contain Lymphatic System.
      See http://www.ihe.net/index.php/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 does not contain Vessels.
      See http://www.ihe.net/index.php/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 does not contain Musculoskeletal System.
      See http://www.ihe.net/index.php/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 does not contain Neurologic System.
      See http://www.ihe.net/index.php/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 does not contain Genitalia.
      See http://www.ihe.net/index.php/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 does not contain Rectum.
      See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.9.15
    </assert>
  </rule>
</pattern>
```

5.4.3.4.3 Hospital Discharge Physical Exam Section

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 5.4-64 Sample Hospital Discharge Physical Exam Section

5.4.3.4.3.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.26'>
 <rule context='*[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='code[@code = "10184-0"]'>
     Error: The section type code of a Hospital Discharge Physical Exam must be 10184-0
   </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>
```

5.4.3.4.4 Vital Signs Section

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

5.4.3.4.4.1 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 5.4-65 Sample Vital Signs Section

5.4.3.4.4.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.25'>
 <rule context='*[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='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='code[@code = "8716-3"]'>
     Error: The section type code of a Vital Signs must be 8716-3
   </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>
```

5.4.3.4.5 Coded Vital Signs Section

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

5.4.3.4.5.1 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 5.4-66 Sample Coded Vital Signs Section

5.4.3.4.5.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2'>
 <rule context='*[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='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='code[@code = "8716-3"]'>
     Error: The section type code of a Coded Vital Signs must be 8716-3
   </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>
   <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: A Coded Vital Signs must contain Vital Signs Organizer.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2
   </assert>
 </rule>
</pattern>
```

5.4.3.4.6 General Appearance Section

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 5.4-67 Sample General Appearance Section

5.4.3.4.6.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.16'>
 <rule context='*[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='code[@code = "10210-3"]'>
     Error: The section type code of a General Appearance must be 10210-3
   </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>
```

5.4.3.4.7 Visible Implanted Medical Devices Section

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 5.4-68 Sample Visible Implanted Medical Devices Section

5.4.3.4.7.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.48'>
 <rule context='*[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='code[@code = "TBD"]'>
     Error: The section type code of a Visible Implanted Medical Devices must be TBD
   </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>
```

5.4.3.4.8 Integumentary System Section

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 5.4-69 Sample Integumentary System Section

5.4.3.4.8.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.17'>
 <rule context='*[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='code[@code = "29302-7"]'>
     Error: The section type code of a Integumentary System must be 29302-7
   </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>
```


5.4.3.4.9 Head Section

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 5.4-70 Sample Head Section

5.4.3.4.9.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.18'>
 <rule context='*[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='code[@code = "10199-8"]'>
     Error: The section type code of a Head must be 10199-8
   </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>
```

5.4.3.4.10 Eyes Section

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 5.4-71 Sample Eyes Section

5.4.3.4.10.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.19'>
 <rule context='*[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='code[@code = "10197-2"]'>
     Error: The section type code of a Eyes must be 10197-2
   </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>
```

5.4.3.4.11 Ears, Nose, Mouth and Throat Section

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 & NOSE & MOUTH & 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 & NOSE & MOUTH & THROAT'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 5.4-72 Sample Ears, Nose, Mouth and Throat Section

5.4.3.4.11.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.20'>
 <rule context='*[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='code[@code = "11393-6"]'>
     Error: The section type code of a Ears, Nose, Mouth and Throat must be 11393-6
   </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>
```

5.4.3.4.12 Ears Section

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 5.4-73 Sample Ears Section

5.4.3.4.12.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.21'>
 <rule context='*[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='code[@code = "10195-6"]'>
     Error: The section type code of a Ears must be 10195-6
   </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>
```


5.4.3.4.13 Nose Section

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 5.4-74 Sample Nose Section

5.4.3.4.13.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.22'>
 <rule context='*[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='code[@code = "10203-8"]'>
     Error: The section type code of a Nose must be 10203-8
   </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>
```

5.4.3.4.14 Mouth, Throat and Teeth Section

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 & THROAT & 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 & THROAT & TEETH'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 5.4-75 Sample Mouth, Throat and Teeth Section

5.4.3.4.14.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.23'>
 <rule context='*[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='code[@code = "10201-2"]'>
     Error: The section type code of a Mouth, Throat and Teeth must be 10201-2
   </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>
```

5.4.3.4.15 Neck Section

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 5.4-76 Sample Neck Section

5.4.3.4.15.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.24'>
 <rule context='*[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='code[@code = "11411-6"]'>
     Error: The section type code of a Neck must be 11411-6
   </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>
```

5.4.3.4.16 Endocrine System Section

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 5.4-77 Sample Endocrine System Section

5.4.3.4.16.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.25'>
 <rule context='*[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='code[@code = "29307-6"]'>
     Error: The section type code of a Endocrine System must be 29307-6
   </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>
```


5.4.3.4.17 Thorax and Lungs Section

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 5.4-78 Sample Thorax and Lungs Section

5.4.3.4.17.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.26'>
 <rule context='*[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='code[@code = "10207-9"]'>
     Error: The section type code of a Thorax and Lungs must be 10207-9
   </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>
```

5.4.3.4.18 Chest Wall Section

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 5.4-79 Sample Chest Wall Section

5.4.3.4.18.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.27'>
 <rule context='*[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='code[@code = "11392-8"]'>
     Error: The section type code of a Chest Wall must be 11392-8
   </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>
```

5.4.3.4.19 Breast Section

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 5.4-80 Sample Breast Section

5.4.3.4.19.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.28'>
 <rule context='*[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='code[@code = "10193-1"]'>
     Error: The section type code of a Breast must be 10193-1
   </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>
```

5.4.3.4.20 Heart Section

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 5.4-81 Sample Heart Section

5.4.3.4.20.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.29'>
 <rule context='*[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='code[@code = "10200-4"]'>
     Error: The section type code of a Heart must be 10200-4
   </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>
```


5.4.3.4.21 Respiratory System Section

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 5.4-82 Sample Respiratory System Section

5.4.3.4.21.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.30'>
 <rule context='*[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='code[@code = "11412-4"]'>
     Error: The section type code of a Respiratory System must be 11412-4
   </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>
```

5.4.3.4.22 Abdomen Section

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 5.4-83 Sample Abdomen Section

5.4.3.4.22.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.31'>
 <rule context='*[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='code[@code = "10191-5"]'>
     Error: The section type code of a Abdomen must be 10191-5
   </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>
```

5.4.3.4.23 Lymphatic System Section

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 5.4-84 Sample Lymphatic System Section

5.4.3.4.23.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.32'>
 <rule context='*[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='code[@code = "11447-0"]'>
     Error: The section type code of a Lymphatic System must be 11447-0
   </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>
```

5.4.3.4.24 Vessels Section

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 5.4-85 Sample Vessels Section

5.4.3.4.24.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.33'>
 <rule context='*[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='code[@code = "10208-7"]'>
     Error: The section type code of a Vessels must be 10208-7
   </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>
```


5.4.3.4.25 Musculoskeletal System Section

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 5.4-86 Sample Musculoskeletal System Section

5.4.3.4.25.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.34'>
 <rule context='*[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='code[@code = "11410-8"]'>
     Error: The section type code of a Musculoskeletal System must be 11410-8
   </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>
```

5.4.3.4.26 Neurologic System Section

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 5.4-87 Sample Neurologic System Section

5.4.3.4.26.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.35'>
 <rule context='*[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='code[@code = "10202-0"]'>
     Error: The section type code of a Neurologic System must be 10202-0
   </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>
```

5.4.3.4.27 Genitalia Section

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 5.4-88 Sample Genitalia Section

5.4.3.4.27.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.36'>
 <rule context='*[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='code[@code = "11400-9"]'>
     Error: The section type code of a Genitalia must be 11400-9
   </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>
```

5.4.3.4.28 Rectum Section

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 5.4-89 Sample Rectum Section

5.4.3.4.28.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.37'>
 <rule context='*[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='code[@code = "10205-3"]'>
     Error: The section type code of a Rectum must be 10205-3
   </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>
```


5.4.3.5 Relevant Studies

5.4.3.5.1 Results Section

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 5.4-90 Sample Results Section

5.4.3.5.1.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.27'>
 <rule context='*[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='code[@code = "30954-2"]'>
     Error: The section type code of a Results must be 30954-2
   </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>
```

5.4.3.5.2 Coded Results Section

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**
1.3.6.1.4.1.19376.1.5.3.1.4.16	R	Procedure Entry
1.3.6.1.4.1.19376.1.5.3.1.4.4	R2	References Entry

```
<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='1.3.6.1.4.1.19376.1.5.3.1.4.16'/>
         :
    </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 5.4-91 Sample Coded Results Section

5.4.3.5.2.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.28'>
 <rule context='*[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='code[@code = "30954-2"]'>
     Error: The section type code of a Coded Results must be 30954-2
   </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>
   <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: A Coded Results must contain Procedure Entry.
     See http://www.ihe.net/index.php/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: A Coded Results should contain References Entry.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.3.28
   </assert>
 </rule>
</pattern>
```

5.4.3.5.3 Hospital Studies Summary Section

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 5.4-92 Sample Hospital Studies Summary Section

5.4.3.5.3.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.29'>
 <rule context='*[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='code[@code = "11493-4"]'>
     Error: The section type code of a Hospital Studies Summary must be 11493-4
   </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>
```

5.4.3.5.4 Coded Hospital Studies Summary Section

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

5.4.3.5.4.1 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 5.4-93 Sample Coded Hospital Studies Summary Section

5.4.3.5.4.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.30'>
 <rule context='*[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='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='code[@code = "11493-4"]'>
     Error: The section type code of a Coded Hospital Studies Summary must be 11493-4
   </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>
   <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: A Coded Hospital Studies Summary must contain Procedure Entry.
     See http://www.ihe.net/index.php/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: A Coded Hospital Studies Summary should contain References Entry.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.3.30
   </assert>
 </rule>
</pattern>
```

5.4.3.5.5 ED Consultations Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.8	
General Description	The ED Consultations section shall contain a narrative description of the consultations obtained during an encounter of care. Consultations themselves may be placed in the consultation section of the EDER folder.	
LOINC Code	**Opt**	**Description**

18693-2	R	ED CONSULTANT PRACTITIONER

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.8'/>
    <id root=' ' extension=' '/>
    <code code='18693-2' displayName='ED CONSULTANT PRACTITIONER'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 5.4-94 Sample ED Consultations Section

5.4.3.5.5.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.2.8'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.13.2.8"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The ED Consultations can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "18693-2"]'>
     Error: The section type code of a ED Consultations must be 18693-2
   </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>
```

5.4.3.6 Plans of Care

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

5.4.3.6.1 Care Plan Section

Template ID		1.3.6.1.4.1.19376.1.5.3.1.3.31
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

```
<component>
  <section>
    <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 5.4-95 Sample Care Plan Section

5.4.3.6.1.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.31'>
 <rule context='*[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 the section type code -->
   <assert test='code[@code = "18776-5"]'>
     Error: The section type code of a Care Plan must be 18776-5
   </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>
```

5.4.3.6.2 Care Plan Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.10.3.1	
Parent Template	Care Plan (1.3.6.1.4.1.19376.1.5.3.1.3.31)	
General Description	The plan of care section contains descriptions of the expectations for care including proposals, order requests, the intended transporation mode and estimated time of arrival to the ED, as well as intended disposition from the ED.	
LOINC Code	**Opt**	**Description**
18776-5	R	TREATMENT PLAN
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.1.10.4.2	R2	Intended Encounter Disposition This required entry describes the expected disposition of the patient after the emergency department encounter has been completed.
Subsections	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2	R	Transport Mode This required entry describes the expected disposition of the patient after the emergency department encounter has been completed.

5.4.3.6.2.1 Parent Template

The parent of this template is Care Plan.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.31'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.3.1'/>
    <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>
    <entry>
        :
      <!-- Required if known Intended Encounter Disposition element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.4.2'/>
         :
    </entry>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2'/>
        <!-- Required Transport Mode Section content -->
      </section>
    </component>


  </section>
</component>
```

Figure 5.4-96 Sample Care Plan Section

5.4.3.6.2.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.10.3.1'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.10.3.1"]'>
     <!-- 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='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.3.31"]'>
     Error: The parent template identifier for Care Plan is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "18776-5"]'>
     Error: The section type code of a Care Plan must be 18776-5
   </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>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.10.4.2"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A Care Plan should contain Intended Encounter Disposition.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.10.3.1
     This required entry describes the expected disposition of the patient after the emergency
department encounter has been completed.
   </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: A Care Plan must contain Transport Mode.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.10.3.1
     This required entry describes the expected disposition of the patient after the emergency
department encounter has been completed.
   </assert>
 </rule>
</pattern>
```

5.4.3.6.3 Discharge Disposition Section

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 an emergency department, 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 5.4-97 Sample Discharge Disposition Section

5.4.3.6.3.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.32'>
 <rule context='*[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='code[@code = "18776-5"]'>
     Error: The section type code of a Discharge Disposition must be 18776-5
   </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>
```

5.4.3.6.4 Discharge Diet Section

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 5.4-98 Sample Discharge Diet Section

5.4.3.6.4.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.33'>
 <rule context='*[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='code[@code = "42344-2"]'>
     Error: The section type code of a Discharge Diet must be 42344-2
   </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>
```

5.4.3.6.5 Advance Directives Section

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

5.4.3.6.5.1 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 5.4-99 Sample Advance Directives Section

5.4.3.6.5.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.34'>
 <rule context='*[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='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='code[@code = "42348-3"]'>
     Error: The section type code of a Advance Directives must be 42348-3
   </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>
```

5.4.3.6.6 Coded Advance Directives Section

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

5.4.3.6.6.1 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 5.4-100 Sample Coded Advance Directives Section

5.4.3.6.6.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.35'>
 <rule context='*[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='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='code[@code = "42348-3"]'>
     Error: The section type code of a Coded Advance Directives must be 42348-3
   </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>
   <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: A Coded Advance Directives should contain Advance Directive Observation.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.3.35
   </assert>
 </rule>
</pattern>
```

5.4.3.6.7 Transport Mode Section

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 arrival to the Emergency Department.
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 actual mode and time of arrival of the patient to the emergency department. The transport entry must be recorded as an event.

```
<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 5.4-101 Sample Transport Mode Section

5.4.3.6.7.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2'>
 <rule context='*[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='code[@code = "11459-5"]'>
     Error: The section type code of a Transport Mode must be 11459-5
   </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>
   <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: A Transport Mode must contain Transport.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2
     This entry provides coded values giving the actual mode and time of arrival of the patient to the
emergency department.  The transport entry must be recorded as an event.
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.10.4.1"]/../@moodCode =
"EVN"'>
     The transport entry must be recorded as an event.
   <assert>
 </rule>
</pattern>
```

5.4.3.7 Procedures Performed

5.4.3.7.1 Patient Education and Consents Section

Template ID		1.3.6.1.4.1.19376.1.5.3.1.1.9.38
General Description		The patient education and consents section shall contain a description of the patient education the patient received, the results of the education, and the consents the patient signed.
LOINC Code	**Opt**	**Description**
34895-3	R	EDUCATION NOTE


```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.38'/>
    <id root=' ' extension=' '/>
    <code code='34895-3' displayName='EDUCATION NOTE'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 5.4-102 Sample Patient Education and Consents Section

5.4.3.7.1.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.38'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.38"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Patient Education and Consents can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "34895-3"]'>
     Error: The section type code of a Patient Education and Consents must be 34895-3
   </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>
```

5.4.3.7.2 Procedures Section

Template ID		1.3.6.1.4.1.19376.1.5.3.1.1.13.2.11
General Description		The procedures section contains a narrative description of the procedures performed by a clinician.
LOINC Code	**Opt**	**Description**
PROC-X	R	PROCEDURES PERFORMED
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.19	R	Procedures This entry provides coded values for procedures performed during the encounter.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.11'/>
    <id root=' ' extension=' '/>
    <code code='PROC-X' displayName='PROCEDURES PERFORMED'
      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>


  </section>
</component>
```

Figure 5.4-103 Sample Procedures Section

5.4.3.7.2.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.2.11'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.13.2.11"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
     Error: The Procedures can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "PROC-X"]'>
     Error: The section type code of a Procedures must be PROC-X
   </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>
```

5.4.3.8 Impressions

5.4.3.8.1 Visit Summary Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2	
General Description	This section is a running history of the most important elements noted for a pregnant woman.	
LOINC Code	**Opt**	**Description**
(xx-acog-visit-sum-section)	R	PREGNANCY VISIT SUMMARY-^PATIENT-FIND-PT-NAR
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.13	R	Simple Observation The flowsheet contains one simple observation to represent the Prepregancy Weight. This observation SHALL be valued with the LOINC code 8348-5, BODY WEIGHT^PRE PREGNANCY-MASS-PT-QN-MEASURED. The value SHALL be of type PQ. The units may be either "lb_av" or "kg".
1.3.6.1.4.1.19376.1.5.3.1.1.11.2.3.2	R	ACOG Flowsheet Panel Other entries on the flowsheet are "batteries" which represent a single visit.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2'/>
    <id root=' ' extension=' '/>
    <code code='(xx-acog-visit-sum-section)' displayName='PREGNANCY VISIT SUMMARY-^PATIENT-FIND-PT-
NAR'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
        :
      <!-- Required Simple Observation element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
         :
    </entry>
    <entry>
        :
      <!-- Required ACOG Flowsheet Panel element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.11.2.3.2'/>
         :
    </entry>

  </section>
</component>
```

Figure 5.4-104 Sample Visit Summary Section

5.4.3.8.1.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Visit Summary can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "(xx-acog-visit-sum-section)"]'>
     Error: The section type code of a Visit Summary must be (xx-acog-visit-sum-section)
   </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>
   <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: A Visit Summary must contain Simple Observation.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2
     The flowsheet contains one simple observation to represent the Prepregancy Weight.  This
observation SHALL be valued with the LOINC code 8348-5, BODY WEIGHT^PRE PREGNANCY-MASS-PT-QN-MEASURED.
The value SHALL be of type PQ.  The units may be either "lb_av" or "kg".
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.11.2.3.2"]'>
     <!-- Verify that all required data elements are present -->
     Error: A Visit Summary must contain ACOG Flowsheet Panel.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2
     Other entries on the flowsheet are "batteries" which represent a single visit.
   </assert>
   <assert test='observation/code[@code=8348-5]'>
     Error: the APS flowsheet must have at least one simple observation with the LOINC
     code 8348-5 to represent the prepregnancy weight.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2
   </assert>
 </rule>
</pattern>
```

5.4.3.8.2 Progress Note Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.7
General Description	The Progress Note section shall contain a narrative description of the sequence of events from initial assessment to discharge for an encounter.

LOINC Code	Opt	Description
18733-6	R	SUBSEQUENT EVALUATION NOTE (ATTENDING PHYSICIAN)

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.7'/>
    <id root=' ' extension=' '/>
    <code code='18733-6' displayName='SUBSEQUENT EVALUATION NOTE (ATTENDING PHYSICIAN)'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>

  </section>
</component>
```

Figure 5.4-105 Sample Progress Note Section

5.4.3.8.2.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.2.7'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.13.2.7"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
      Error: The Progress Note can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "18733-6"]'>
     Error: The section type code of a Progress Note must be 18733-6
   </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>
```

5.4.3.8.3 ED Diagnosis Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.9	
General Description	The ED diagnosis section shall contain a narrative description of the conditions that were diagnosed or addressed during the ED course, as well as those active conditions that modify the complexity of the patient encounter. It should include entries for patient conditions as described in the Entry Content Module.	
LOINC Code	**Opt**	**Description**
11301-9	R	ED DIAGNOSIS
Entries	**Opt**	**Description**
1.3.6.1.4.1.19376.1.5.3.1.4.5	R	Conditions Entry

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.9'/>
    <id root=' ' extension=' '/>
    <code code='11301-9' displayName='ED DIAGNOSIS'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <entry>
         :
      <!-- Required Conditions Entry element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5'/>
         :
    </entry>

  </section>
</component>
```

Figure 5.4-106 Sample ED Diagnosis Section

5.4.3.8.3.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.2.9'>
 <rule context='*[templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.13.2.9"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:section'>
     Error: The ED Diagnosis can only be used on sections.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "11301-9"]'>
     Error: The section type code of a ED Diagnosis must be 11301-9
   </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>
   <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: A ED Diagnosis must contain Conditions Entry.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.2.9
   </assert>
 </rule>
</pattern>
```

}}

5.4.3.9 Administrative and Other Information

5.4.3.9.1 Payers Section

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

5.4.3.9.1.1 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 5.4-107 Sample Payers Section

5.4.3.9.1.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5.3.7'>
 <rule context='*[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='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='code[@code = "48768-6"]'>
     Error: The section type code of a Payers must be 48768-6
   </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>
   <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: A Payers should contain Coverage Entry.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.5.3.7
   </assert>
 </rule>
</pattern>
```

5.4.3.9.2 Referral Source Section

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 5.4-108 Sample Referral Source Section

5.4.3.9.2.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.2.3'>
 <rule context='*[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='code[@code = "11293-8"]'>
     Error: The section type code of a Referral Source must be 11293-8
   </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>
```

5.4.3.9.3 Transport Mode Section

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 arrival to the Emergency Department.
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 actual mode and time of arrival of the patient to the emergency department. The transport entry must be recorded as an event.

```
<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 5.4-109 Sample Transport Mode Section

5.4.3.9.3.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2'>
 <rule context='*[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='code[@code = "11459-5"]'>
     Error: The section type code of a Transport Mode must be 11459-5
   </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>
   <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: A Transport Mode must contain Transport.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.10.3.2
     This entry provides coded values giving the actual mode and time of arrival of the patient to the
emergency department.  The transport entry must be recorded as an event.
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.10.4.1"]/../@moodCode =
"EVN"'>
     The transport entry must be recorded as an event.
   <assert>
 </rule>
</pattern>
```

5.4.3.9.4 ED Disposition Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10	
Parent Template	1.3.6.1.4.1.19376.1.5.3.1.3.31 (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, 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	Intended Encounter Disposition This required entry describes the expected disposition of the patient

		after the emergency department encounter has been completed.

5.4.3.9.4.1 Parent Template

The parent of this template is 1.3.6.1.4.1.19376.1.5.3.1.3.31.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10'/>
    <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 Intended Encounter Disposition element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.4.2'/>
         :
    </entry>

  </section>
</component>
```

Figure 5.4-110 Sample ED Disposition Section

5.4.3.9.4.2 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10'>
 <rule context='*[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 that the parent templateId is also present. -->
   <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10"]'>
     Error: The parent template identifier for ED Disposition is not present.
   </assert>
   <!-- Verify the section type code -->
   <assert test='code[@code = "11302-7"]'>
     Error: The section type code of a ED Disposition must be 11302-7
   </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>
   <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: A ED Disposition must contain Intended Encounter Disposition.
     See http://www.ihe.net/index.php/1.3.6.1.4.1.19376.1.5.3.1.1.13.2.10
     This required entry describes the expected disposition of the patient after the emergency
department encounter has been completed.
   </assert>
 </rule>
</pattern>
```

}}

5.4.4 CDA Entry Content Modules

5.4.4.1 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.

5.4.4.1.1 Standards

RIM HL7 Version 3 Reference Information Model

CDAR2 HL7 Clinical Document Architecture Release 2.0

5.4.4.1.2 Constraints

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 5.4-1

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"

Table 5.4-2

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)]
```

5.4.4.2 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.

5.4.4.2.1 Standards

PatCareStruct HL7 Care Provision Domain (DSTU)

CCD ASTM/HL7 Continuity of Care Document

5.4.4.2.2 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>
```

Figure 5.4-111 Severity Example

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.

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

The related statement is made about the severity of the condition (or allergy). 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'.

5.4.4.2.2.2 <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).

5.4.4.2.2.3 <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.

5.4.4.2.2.4 <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.

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

The <observation> element shall contain a <text> element. The <text> elements shall contain a <reference> element pointing to the narrative where the severity is recorded, rather than duplicate text to avoid ambiguity.

5.4.4.2.2.6 <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.

5.4.4.2.2.7 <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.

5.4.4.3 Problem Status Observation 1.3.6.1.4.1.19376.1.5.3.1.4.1.1

Any problem or allergy observation may be the subject of 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.

5.4.4.3.1 Standards

CCD ASTM/HL7 Continuity of Care Document

5.4.4.3.2 Specification

```
 <entry>
   <observation classCode='OBS' moodCode='EVN'>
<font style='font-weight: bold'/>
     <entryRelationship typeCode='REFR' inversionInd='true'>
       <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></font></br>
   </observation>
 </entry>
```

Figure 5.4-112 Problem Status Observation Example

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.

5.4.4.3.3 <entryRelationship typeCode='REFR' >

The related statement is made about the clinical status of the problem or allergy. This observation is recorded inside an <entryRelationship> element occurring in the problem or allergy. The containing <entry> refers to (typeCode='REFR') this new observation.

5.4.4.3.4 <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).

5.4.4.3.5 <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.

5.4.4.3.6 <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.

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

The <observation> element shall contain a <text> element that points to the narrative text describing the clinical status. The <text> elements shall contain a <reference> element pointing to the narrative section (see PCC TF-2:5.4.4.1), rather than duplicate text to avoid ambiguity.

5.4.4.3.8 <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.

5.4.4.3.9 <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

Table 5.4-3

5.4.4.4 Health Status 1.3.6.1.4.1.19376.1.5.3.1.4.1.2

Any concern may have as its subject 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.

5.4.4.4.1 Specification

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

   <entryRelationship typeCode='REFR'>
     <observation classCode='OBS' moodCode='EVN'>
       <templateId root='2.16.840.1.113883.10.20.1.57'/>
       <templateId root='2.16.840.1.113883.10.20.1.51'/>
       <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>
```

Figure 5.4-113 Health Status Example

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

5.4.4.4.2 <entryRelationship typeCode='REFR'>

The related statement is made about the health status of the patient. This observation is recorded inside an <entryRelationship> element occurring in the observation. The contained <entry> is referenced (typeCode='REFR') by the observation entry.

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

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

5.4.4.4.4 <templateId root='2.16.840.1.113883.10.20.1.57'/> <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.

5.4.4.4.5 <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.

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

The <observation> element shall contain a <text> element that points to the narrative text describing the clinical status. 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.

5.4.4.4.7 <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.

5.4.4.4.8 <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

Table 5.4-4

5.4.4.5 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 Act entry. This structure is included in the target act using the <entryRelationship> element defined in the CDA Schema. The example below shows recording a comment for an <entry>, and is used as context for the following sections.
Any condition or allergy may be the subject of a comment.

5.4.4.5.1 Standards

CareStruct HL7 Care Provision Care Structures (DSTU)

CCD ASTM/HL7 Continuity of Care Document

5.4.4.5.2 Specification

```
<entry>
  <observation classCode='COND' 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>
```

Figure 5.4-114 Comments Example

5.4.4.5.3 <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.

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

Again, a related statement is made about the condition, allergy or medication. This observation is recorded inside an <entryRelationship> element occurring at the end of the condition or allergy 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'.

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

The related statement is an event (moodCode='EVN') making an arbitrary comment or providing instruction on the related entry. As this is simply an observation, so classCode='OBS'.

5.4.4.5.6 <code code='48767-8' displayName='Annotation Comment' codeSystem='1.3.6.1.4.1.19376.1.5.3.2' 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.

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

The <text> element provides a <reference> to the 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>.

5.4.4.5.8 <statusCode code='completed' />

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

5.4.4.5.9 <author>

The comment may have an author.

5.4.4.5.10 <time value=' '/>

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

5.4.4.5.11 <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.

5.4.4.5.12 <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.

5.4.4.6 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.

5.4.4.6.1 Standards

Pharmacy HL7 Pharmacy Domain (Normative)

5.4.4.6.2 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>
```

Figure 5.4-115 Patient Medication Instructions Example

5.4.4.6.3 <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'.

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

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

5.4.4.6.5 <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.

5.4.4.6.6 <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.

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

The <text> element provides a <reference> to the 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>.

5.4.4.6.8 <statusCode code='completed' />

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

5.4.4.7 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.

5.4.4.7.1 Standards

Pharmacy HL7 Pharmacy Domain (Normative)

5.4.4.7.2 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>
```

Figure 5.4-116 Medication Fulfillment Instructions Example

5.4.4.7.3 <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'.

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

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

5.4.4.7.5 <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.

5.4.4.7.6 <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.

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

The <text> element provides a <reference> to the 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>.

5.4.4.7.8 <statusCode code='completed' />

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

5.4.4.8 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.

5.4.4.8.1 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>
    <reference typeCode='REFR|SPRT'>
      <externalDocument classCode='DOC' moodCode='EVN'>
        <id extension='' root=''/>
        <text><reference value=''/></text>
      </externalDocument>
    </reference>
  </act>
</entry>
```

Figure 5.4-117 External References Example

5.4.4.8.2 <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').

5.4.4.8.3 <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'.

5.4.4.8.4 <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.

5.4.4.8.5 <code nullFlavor='NA'/>

The reference act has no code associated with it.

5.4.4.8.6 <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.

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

The reference itself is 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. The reference is to an <externalDocument> which documents (classCode='DOC') the event (moodCode='EVN').

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

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

5.4.4.8.9 <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. The link should also be present in the narrative inside a <linkHTML> element.

5.4.4.9 Internal References 1.3.6.1.4.1.19376.1.5.3.1.4.4.1

A CDA Entry may reference (point to) information contained in other entries within the same document as shown below.

5.4.4.9.1 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>
```

Figure 5.4-118 Internal References Example

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

The act being referenced appears inside a related entry. The type (typeCode) and direction (inversionInd) attributes will be specified in the entry content module that contains the reference.

5.4.4.9.3 <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.

5.4.4.9.4 <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.

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

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

5.4.4.9.6 <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".

5.4.4.10 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 (or allergy). The <effectiveTime> element describes the period of concern. The subject of concern is one or more observations about related problems (see section 5.4.4.12) or allergies and intolerances (see section 5.4.4.13). The subject of the concern may also include the current health status of the patient. Additional references can be provided having additional information related to the concern.

5.4.4.10.1 Standards

CCD ASTM/HL7 Continuity of Care Document

CareStruct HL7 Care Provision Care Structures (DSTU)

ClinStat ClinStat HL7 Clinical Statement (DRAFT)

5.4.4.10.2 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'>
  </entryRelationship>
  <!-- zero or one entry relationships identifying the health status of concern -->
  <entryRelationship typeCode='SUBJ'>
  </entryRelationship>
  <!-- optional entry relationship providing more information about the concern -->
  <entryRelationship typeCode='REFR'>
  </entryRelationship>
</act>
```

Figure 5.4-119 Concern Entry Example

5.4.4.10.3 <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.

5.4.4.10.4 <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.

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

This required element identifies the concern.

5.4.4.10.6 <code nullFlavor='NA'/>

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

5.4.4.10.7 <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.

Table 5.4-5

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.

5.4.4.10.8 <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.

5.4.4.10.9 <!-- 1..* entry relationships identifying problems of concern --> <entryRelationship type='SUBJ'>

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.

Note: The Allergy and Intolerances entry is a refinement of the Problem entry.

5.4.4.10.10 <!-- zero or one entry relationships identifying the health status of concern --> <entryRelationship type='SUBJ'>

Also of concern may be the health status of the patient with respect to the problem and/or allergy described above.

5.4.4.10.11 <!-- optional entry relationship providing more information about the concern --> <entryRelationship type='REFR'>

5.4.4.11 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.

5.4.4.11.1 Standards

CCD ASTM/HL7 Continuity of Care Document

CareStruct HL7 Care Provision Care Structures (DSTU)

ClinStat HL7 Clinical Statement Pattern (Draft)

5.4.4.11.2 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

5.4.4.11.3 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'>
 </entryRelationship>
 <!-- zero or one entry relationships identifying the health status of concern -->
 <entryRelationship type='SUBJ'>
 </entryRelationship>
 <!-- optional entry relationship providing more information about the concern -->
 <entryRelationship type='REFR'>
 </entryRelationship>
</act>
```

Figure 5.4-120 Problem Concern Entry Example

5.4.4.11.4 <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.

5.4.4.11.5 <!-- 1..* entry relationships identifying problems of concern --> <entryRelationship type='SUBJ'>

This entry shall contain one or more problem entries that conform to the Problem Entry template.

5.4.4.12 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.

5.4.4.12.1 Standards

CCD ASTM/HL7 Continuity of Care Document

CareStruct HL7 Care Provision Care Structures (DSTU)

ClinStat HL7 Clinical Statement Pattern (Draft)

5.4.4.12.2 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

5.4.4.12.3 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='1.3.6.1.4.1.19376.1.5.3.1.4.5.3'/>
 <id root=' ' extension=' '/>
 <code nullFlavor='NA'/>
 <statusCode code='active|suspended|aborted|completed'/>
 <effectiveTime>
   <low value=' '/>
   <high value=' '/>
 </effectiveTime>
 <font color='black'/><!-- 1..* entry relationships identifying allergies of concern -->
 <entryRelationship type='SUBJ'>
 </entryRelationship>
 <!-- zero or one entry relationships identifying the health status of concern -->
 <entryRelationship type='SUBJ'>
 </entryRelationship>
 <!-- optional entry relationship providing more information about the concern -->
 <entryRelationship type='REFR'>
 </entryRelationship>
</act></font>
```

Figure 5.4-121

5.4.4.12.4 <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.

5.4.4.12.5 <!-- 1..* entry relationships identifying allergies of concern --> <entryRelationship type='SUBJ'>

This entry shall contain one or more allergy or intolerance entries that conform to the Allergy and Intolerance Entry.

5.4.4.13 Problem Entry 1.3.6.1.4.1.19376.1.5.3.1.4.5

This section makes use of the -->>linking, severity and 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 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.

5.4.4.13.1 Standards

CCD ASTM/HL7 Continuity of Care Document

CareStruct HL7 Care Provision Care Structures (DSTU)

ClinStat HL7 Clinical Statement Pattern (Draft)

5.4.4.13.2 Parent Template

This template is compatible with the ASTM/HL7 Continuity of Care Document template: 2.16.840.1.113883.10.20.1.28

5.4.4.13.3 Specification

```
<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'/>
 <statusCode code='completed'/>
 <effectiveTime><low value=' '/><high value=' '/></effectiveTime>
 <value xsi:type='CD' code=' '
   codeSystem=' ' displayName=' ' codeSystemName=' '>
   <originalText><reference value=' '/></originalText>
 </value>
 <!-- <entryRelationship> element containing severity -->
 <!-- <entryRelationship> element containing clinical status -->
 <!-- <entryRelationship> element containing comments -->
</observation>
```

Figure 5.4-122

5.4.4.13.4 <observation classCode='OBS' moodCode='EVN' negationInd='false'>

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.

5.4.4.13.5 <<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> element identify this <observation> as a problem, and must be included as shown above. As a side effect, readers of the CDA can quickly locate and identify problems.

5.4.4.13.6 <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.

5.4.4.13.7 <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.

Code	Description
64572001	Condition
418799008	Symptom
404684003	Finding
409586006	Complaint
248536006	Functional limitation
55607006	Problem
282291009	Diagnosis

Table 5.4-6

5.4.4.13.8 <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'.

5.4.4.13.9 <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).

5.4.4.13.10 <confidentialityCode code=' '/>

While CDA allows for a condition to specify a <confidentialtyCode> for an observation, in practice there is no way to enforce consistent use of this information across institutions to secure confidential patient information. Therefore, it is recommended that this element not be sent. If there are confidentiality issues that need to be addressed other mechanisms should be negotiated within the affinity domain.

5.4.4.13.11 <uncertaintyCode code=' '/>

CDA allows a condition to be specified with an <uncertaintyCode>. Such conditions can also be recorded as a possible condition (e.g. possible ear infection). There is no present consensus on the best use of this element; therefore, it is recommended that this element not be sent.

5.4.4.13.12 <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.

Table 5.4-7

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.

5.4.4.13.13 <originalText><reference value=' '/></originalText>

The <value> contains a <reference> to the <originalText> in order to link the coded value to the narrative text. 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.

5.4.4.13.14 <!-- <entryRelationship> element 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.

5.4.4.13.15 <!-- <entryRelationship> element 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.

5.4.4.13.16 <!-- <entryRelationship> element containing comments -->

An optional <entryRelationship> may be present providing an additional comment (annotation) for the condition. When present, this <entryRelationship> element shall contain a comment observation conforming to the Comment entry.

5.4.4.14 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.

5.4.4.14.1 Standards

CCD ASTM/HL7 Continuity of Care Document

CareStruct HL7 Care Provision Care Structures (DSTU)

ClinStat HL7 Clinical Statement Pattern (Draft)

5.4.4.14.2 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'/>
 <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'/>
 <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>
 <!-- Optional <entryRelationship> element containing reactions -->
 <!-- Optional <entryRelationship> element containing clinical status -->
 <!-- Optional <entryRelationship> element containing severity -->
 <!-- Optional <entryRelationship> element containing comments -->
</observation>
```

Figure 5.4-123

5.4.4.14.3 <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 1.3.6.1.4.1.19376.1.5.3.1.4.5.6, and is a subtype of the {{ILink|1.3.6.1.4.1.19376.1.5.3.1.4.6|1.3.6.1.4.1.19376.1.5.3.1.4.5.5|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.

5.4.4.14.4 <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.

5.4.4.14.5 <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.

5.4.4.14.6 <participant typeCode='CSM'> <participantRole classCode='MANU'> <playingEntity classCode='MMAT'>

The substance that causes the allergy or intolerance may be specified in the <participant> element.

5.4.4.14.7 <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.

5.4.4.14.8 <!-- <entryRelationship> element 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>
```

Figure 5.4-124 Adverse Reaction Example

5.4.4.14.9 <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.

5.4.4.14.10 <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.

5.4.4.15 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.

5.4.4.15.1 Standards

Pharmacy HL7 Pharmacy Domain (Normative)

CCD ASTM/HL7 Continuity of Care Document

5.4.4.15.2 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>
```

Figure 5.4-125 Medications Example

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.

5.4.4.15.2.1 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	<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).

Table 5.4-8

5.4.4.15.3 <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.

5.4.4.15.3.1 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.

5.4.4.15.3.2 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.

5.4.4.15.3.3 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.

5.4.4.15.3.4 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.

5.4.4.15.3.5 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.

5.4.4.15.4 <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.

5.4.4.15.5 <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.

Table 5.4-9

5.4.4.15.6 <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.

5.4.4.15.7 <code code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '>

Do NOT code the medication here. This <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. This element is optional.

5.4.4.15.8 <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.

5.4.4.15.9 <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. Unlike the condition observation, this attribute does not indicate whether or not the patient is still under the medication regime.

5.4.4.15.10 <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.

5.4.4.15.11 <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.

5.4.4.15.12 <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.

5.4.4.15.12.1 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>

Table 5.4-10

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.

5.4.4.15.12.2 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).

Table 5.4-11

5.4.4.15.13 <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.

5.4.4.15.14 <approachSiteCode code=' ' codeSystem=' '>

originalText><reference value=' '/></originalText>
</approachSiteCode>

The <approachSiteCode> element contains a URI in the value attribute of the <reference> that points to the text in the narrative identifying the site. It may be coded to a controlled vocabulary that lists such sites (e.g., SNOMED-CT).

5.4.4.15.15 <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 .

5.4.4.15.16 <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 .

5.4.4.15.17 <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.

5.4.4.15.18 <consumable>

The <consumable> element shall be present, and shall contain a <manufacturedProduct> entry conforming to the Product Entry template

5.4.4.15.19 <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 section 5.4.4.16.

5.4.4.15.20 <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.

5.4.4.15.21 <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 above under section 5.4.4.6 on 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).

5.4.4.15.22 <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 specified in section 5.4.4.8.2.

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.

5.4.4.15.23 <precondition><criterion> <text><reference value=' '></text> </criterion></precondition>

5.4.4.16 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.

5.4.4.16.1 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 typeCode='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='true' typeCode='CAUS'>
    <observation typeCode='OBS' moodCode='EVN'>
      <id root='' extension=''/>
    </observation>
  </entryRelationship>
  <!-- Optional <entryRelationship> element containing comments -->
</substanceAdministration>
```

Figure 5.4-126 Immunizations Example

5.4.4.16.2 <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.

5.4.4.16.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.12'/>

The <templateId> element identifies this <substanceAdministration> as an immunization, allowing for validation of the content. The templateId must have root='1.3.6.1.4.1.19376.1.5.3.1.4.12'.

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

This shall be the identifier for the immunization event.

5.4.4.16.5 <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.

Table 5.4-12

5.4.4.16.6 <text><reference value='#xxx'/><text>

The <text> element shall contain a <reference> to the original text that decribes the immunization activitiy in the narrative of the document.

5.4.4.16.7 <statusCode code='completed'/>

The statusCode shall be set to "completed" for all immunizations.

5.4.4.16.8 <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.

5.4.4.16.9 <routeCode code=' ' codeSystem=' ' codeSystemName='RouteOfAdministration'/>

See routeCode under Medications.

5.4.4.16.10 <approachSiteCode code=' ' codeSystem=' ' codeSystemName='HumanSubstanceAdministrationSite'/>

See approachSiteCode under Medications.

5.4.4.16.11 <doseQuantity value=' ' units=' '/>

See doseQuantity under Medications.

5.4.4.16.12 <consumable typeCode='CSM'>

See consumable under Medications.

5.4.4.16.13 <code code=' ' codeSystem=' ' codeSystemName=' '>

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 procedure (such as CPT-4) shall not be used to describe the vaccine entry.

codeSystem	codeSystemName	Description
2.16.840.1.113883.6.59	CVX	CDC Vaccine Codes
2.16.840.1.113883.6.88	RxNorm	RxNorm
2.16.840.1.113883.6.63	FDDC	First DataBank Drug Codes
2.16.840.1.113883.6.96	SNOMED-CT	SNOMED Controlled Terminology

Table 5.4-13

See also code under Medications.

5.4.4.16.14 <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

5.4.4.16.15 <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.

5.4.4.16.16 <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.

5.4.4.16.17 <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.

5.4.4.16.18 <value xsi:type='INT' value=' '/>

The <value> element shall be present, and shall indicate the immunization series number in the value attribute.

5.4.4.16.19 <entryRelationship inversionInd='true' typeCode='CAUS'>

This repeatable element should be used to identify adverse reactions caused by the immunization.

5.4.4.16.20 <observation typeCode='OBS' moodCode='EVN'>

This element is required, and provides a pointer to the the adverse reaction caused by the immunization.

5.4.4.16.21 <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.

5.4.4.16.22 <!-- 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.

5.4.4.17 Supply Entry 1.3.6.1.4.1.19376.1.5.3.1.4.7.3

The supply entry describes a prescription activity.

5.4.4.17.1 Specification

```
<substanceAdministration classCode='SBADM' moodCode='INT|EVN'>
    :
    .
  <entryRelationship type='REFR'>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.3'/>
    <sequenceNumber value=''/>
    <supply classCode='SPLY' moodCode='INT|EVN'>
      <templateId root='2.16.840.1.113883.10.20.1.34'/>
      <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>
```

Figure 5.4-127 Supply Entry Example

5.4.4.17.2 <entryRelationship typeCode='REFR'>

A <substanceAdministration> act may reference (typeCode='REFR') a prescription activity in an <entryRelationship> element.

5.4.4.17.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.3'/>

The <entryRelationship> element shall contain a <templateId> element that appears exactly as shown above. This element identifies this entry as a prescription activity.

5.4.4.17.4 <sequenceNumber value=' '/>

The prescription activity may have a <sequenceNumber> element to indicate that it is the first, second, or Nth fill of a specific prescription. This element should be present when the embedded <supply> element has a moodCode attribute of EVN.

5.4.4.17.5 <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.

5.4.4.17.6 <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.

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

Each supply act shall have an identifier to uniquely identify the supply entry.

5.4.4.17.8 <repeatNumber value=' '/>

Each supply entry should have a <repeatNumber> element that indicates the number of times the prescription can be filled.

5.4.4.17.9 <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.

5.4.4.17.10 <author>

A supply entry that describes an intent (<supply classCode='SPLY' moodCode='INT'>) may include an <author> element to identify the prescribing provider.

5.4.4.17.11 <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.

5.4.4.17.12 <assignedAuthor>

The <assignedAuthor> element shall be present, and identifies the author.

5.4.4.17.13 <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.

5.4.4.17.14 <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.

5.4.4.17.15 <performer typeCode='PRF'>

The <performer> element may be present to indicate who is intended (moodCode='INT'), or actually filled (moodCode='EVN') the prescription.

5.4.4.17.16 <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').

5.4.4.17.17 <assignedEntity>

The < assignedEntity> element shall be present, and identifies the filler of the prescription.

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

One or more <id> elements should be present. These identify the performer.

5.4.4.17.19 <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.

5.4.4.17.20 <!-- 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.

5.4.4.18 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.

5.4.4.18.1 Specification

```
<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>
```

Figure 5.4-128 Product Entry Example

5.4.4.18.2 <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>

The name and strength of the medication are specified in the elements under the <manufacturedMaterial> element.

5.4.4.18.3 <code code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '> <originalText><reference value=' '/></originalText> </code>

The <code> element of the <manufacturedMaterial> 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. 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). .

Note: Since 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 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.

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

Table 5.4-14

5.4.4.18.4 <name>

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).

5.4.4.19 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).

5.4.4.19.1 Specification

```
<observation typeCode='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=''/>
  <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>
```

Figure 5.4-129 Simple Observations Example

5.4.4.19.2 <observation typeCode='OBS' moodCode='EVN'>

These acts are simply observations that have occurred, and so are recored using the <observation> element as shown above.

5.4.4.19.3 <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 shonw above.

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

Each observation shall have an identifier.

5.4.4.19.5 <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.

5.4.4.19.6 <text><reference value='#xxx'/></text>

Each measurement entry shall contain a <text> element providing a <reference> to the text that provides the same information as the observation within the narrative portion of the document.

5.4.4.19.7 <statusCode code='completed'/>

The status code of all observations shall be completed.

5.4.4.19.8 <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.

5.4.4.19.9 <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.

5.4.4.19.10 <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.

5.4.4.19.11 <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 .

5.4.4.19.12 <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.

5.4.4.20 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.

5.4.4.20.1 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=''/>
  <!-- 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>
```

Figure 5.4-130 Vital Signs Organizer Example

5.4.4.20.2 <organizer classCode='CLUSTER' moodCode='EVN'>

The vital signs organizer is a cluster of vital signs observations.

5.4.4.20.3 <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.

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

The organizer shall have an <id> element.

5.4.4.20.5 <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.

5.4.4.20.6 <statusCode code='completed'/>

The observations have all been completed.

5.4.4.20.7 <effectiveTime value=' '/>

The effective time element shall be present to indicate when the measurement was taken.

5.4.4.20.8 <component typeCode='COMP'>

The organizer shall have one or more <component> elements that are <observation> elements using the Vital Signs Observation template.

5.4.4.21 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.

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5.4.4.21.1 Specification

Vital Signs Observation Example

```
<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|RTO' />
 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>
</observation>
```

5.4.4.21.2 <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'/>

11080

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.

5.4.4.21.3 <code code=' ' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>

11085

A vital signs observation entry shall use one of the following LOINC codes, with the specified data types and units.

Vital Signs Codes

LOINC	Description	Units	Type
9279-1	RESPIRATION RATE	min or s	RTO
8867 4	HEART BEAT		
2710-2	OXYGEN SATURATION	%	PQ
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]	

5.4.4.21.4 <value xsi:type='PQ|RTO' .../>

The <value> element shall be present, and shall be of the appropriate data type specified for measure in the table above.

5.4.4.21.5 <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).

5.4.4.21.6 <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.

5.4.4.21.7 <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).

5.4.4.22 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.

5.4.4.22.1 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='SUBJ'>
      <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='PART'>
      <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 -->
    <entryRelationship typeCode='COMP'>
      <observation classCode='OBS' moodCode='EVN'>
        <templateId root='2.16.840.1.113883.10.20.1.22'/>
      </observation>
    </entryRelationship>
  </organizer>
</entry>
```

Figure 5.4-131 Family History Organizer Example

5.4.4.22.2 <organizer classCode='CLUSTER' moodCode='EVN'>

Each family history entry is organized (classCode='CLUSTER') into a group of observations about a family member.

5.4.4.22.3 <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.

5.4.4.22.4 <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').

5.4.4.22.5 <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.

5.4.4.22.6 <subject>

The <subject> element contains information about the relation.

5.4.4.22.7 <sdtc:id root=' ' extension=' '/>

The <sdtc:id> element should be present. It is used to identify the patient relation to create a pedigree graph.

5.4.4.22.8 <administrativeGenderCode code=' ' />

The <administrativeGenderCode> element should be present. It gives the gender of the relation.

5.4.4.22.9 <participant typeCode='PART'> <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').

5.4.4.22.10 <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.

5.4.4.22.11 <playingEntity classCode='PSN'>

The <playingEntity> element identifies the related person. It shall be recorded as shown above.

5.4.4.22.12 <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.

5.4.4.22.13 <entryRelationship 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 <entryRelationship> element shown above. These components must conform the Family History Observation template.

5.4.4.23 Family History Observation 1.3.6.1.4.1.19376.1.5.3.1.4.13.3

A family history observation is a Simple Observation that uses a specific vocabulary, and inherits constraints from CCD. Family history observations are found inside Family History Organizers.

5.4.4.23.1 Standards

CCD ASTM/HL7 Continuity of Care Document

5.4.4.23.2 Parent Template

The parent of this template is Simple Observation. This template is compatible with the ASTM/HL7 Continuity of Care Document template: 2.16.840.1.113883.10.20.1.22

5.4.4.23.3 Specification

Family 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='2.16.840.1.113883.10.20.1.22'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.3'/>
 <id root='&nsbp;' extension='&nsbp;'/>
 <code code='&nsbp;' displayName='&nsbp;' codeSystem='&nsbp;' codeSystemName='&nsbp;'/>
 <text><reference value='#xxx'/></text>
 <statusCode code='completed'/>
 <effectiveTime value='&nsbp;'/>
 <repeatNumber value='&nsbp;'/>
 <value xsi:type='CD' .../>
 <interpretationCode code='&nsbp;' codeSystem='&nsbp;' codeSystemName='&nsbp;'/>
 <methodCode code='&nsbp;' codeSystem='&nsbp;' codeSystemName='&nsbp;'/>
 <targetSiteCode code='&nsbp;' codeSystem='&nsbp;' codeSystemName='&nsbp;'/>
</observation>
```

5.4.4.23.4 <templateId root='2.16.840.1.113883.10.20.1.22'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.3'/>

The <templateId> elements identify this observation as a family history observation, and shall be present as shown above.

5.4.4.23.5 <code code='&nsbp;' displayName='&nsbp;' codeSystem='&nsbp;' codeSystemName='&nsbp;'/>

The <code> indicates the type of observation made (e.g., Diagnosis, et cetera). See the code element in the Problem Entry entry for suggested values.

5.4.4.23.6 <value xsi:type='CD' code='&nsbp;' displayName='&nsbp;' codeSystem='&nsbp;' codeSystemName='&nsbp;'/>

The <value> element indicates the information (e.g., diagnosis) of the family member. See the value element in the Problem Entry for suggested values.

5.4.4.24 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.

5.4.4.24.1 Standards

CCD ASTM/HL7 Continuity of Care Document

5.4.4.24.2 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

5.4.4.24.3 Specification

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>
```

5.4.4.24.4 <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.

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

The <code> element identifies the type social history observation.

Social History Codes

Code	Description	Data Type	Units
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	

5.4.4.24.6 ~~<repeatNumber value=' '/>~~

The <repeatNumber> element should not be used in a social history observation.

5.4.4.24.7 <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.

5.4.4.24.8 ~~<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.

5.4.4.25 Pregnancy Observation 1.3.6.1.4.1.19376.1.5.3.1.4.13.5

A pregnancy observation is a Simple Observation that uses a specific vocabulary to record observations about a patient's pregnancy history.

5.4.4.25.1 Parent Template

The parent of this template is Simple Observation.

5.4.4.25.2 Specification

```
<observation typeCode='OBS' moodCode='EVN'>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.5'/>
 <id root=' ' extension=' '/>
 <code code=' ' displayName=' ' 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=' ' .../>
 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <methodCode code=' ' codeSystem=' ' codeSystemName=/>
 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>
</observation>
```

Figure 5.4-132

5.4.4.25.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.5'/>

These <templateId> elements identify this <observation> as a pregnancy observation, allowing for validation of the content. The <templateId> elements shall be recorded as shown above.

5.4.4.25.4 <code code=' ' displayName=' ' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>

A pregnancy observations shall have a LOINC code describing what facet of patient's pregnancy history is being recorded. These codes should come from the list of codes shown below. Additional codes may be used to reflect additional information about the pregnancy history.

Pregnancy Observation Codes

LOINC CODE	Description	Type	Units or Vocabulary
11449-6	PREGNANCY STATUS	CE	SNOMED CT, ICD-9-CM (V22)
8678-5	MENSTRUAL STATUS		SNOMED CT
8665-2	DATE LAST MENSTRUAL PERIOD	TS	N/A
11636-8	BIRTHS LIVE (REPORTED)	QTY	
11637-6	BIRTHS PRETERM (REPORTED)		

11638-4	BIRTHS STILL LIVING (REPORTED)		
11639-2	BIRTHS TERM (REPORTED)		
11640-0	BIRTHS TOTAL (REPORTED)		
11778-8	DELIVERY DATE (CLINICAL ESTIMATE)	TS	
11779-6	DELIVERY DATE (ESTIMATED FROM LAST MENSTRUAL PERIOD)		
11780-4	DELIVERY DATE (ESTIMATED FROM OVULATION DATE)		
11884-4	FETUS, GESTATIONAL AGE (CLINICAL ESTIMATE)	PQ	d, wk or mo
11885-1	FETUS, GESTATIONAL AGE (ESTIMATED FROM LAST MENSTRUAL PERIOD)		
11886-9	FETUS, GESTATIONAL AGE (ESTIMATED FROM OVULATION DATE)		
11887-7	FETUS, GESTATIONAL AGE (ESTIMATED FROM SELECTED DELIVERY DATE)		

5.4.4.25.5 ~~<repeatNumber value=' '/>~~

The <repeatNumber> element should not be present in a pregancy observation.

5.4.4.25.6 <value xsi:type=' ' .../>

The value of the observation shall be recording using a data type appropriate to the coded observation according to the table above.

5.4.4.25.7 ~~<interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>~~ ~~<methodCode code=' ' codeSystem=' ' codeSystemName=' '/>~~ ~~<targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>~~

The <interpretationCode>, <methodCode>, and <targetSiteCode> should not be present in a pregnancy observation.

5.4.4.26 EDD Observation 1.3.6.1.4.1.19376.1.5.3.1.1.11.2.3.1

The EDD observation reflects the clinicians best judgement about the estimated delivery date of the patient. It can be supported by patient history (eg last menses or quickening), physical examination findings (uterine size), or Ultrasound. If present, ultrasound findings generally are the most accurate supporting evidence. The observation is a Simple Observation with a supporting entryRelation of another Observation. The supporting

observation may in turn have a entryRelation that gives the original observation as a gestational age or date from which the estimated due date is calculated.

5.4.4.26.1 Specification

```
<observation classCode='OBS' moodCode='EVN'>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.11.2.3.1'>
 <statusCode code='completed'/>
 <effectiveTime value=' '/>
 <author typeCode='AUT'>
   <time value=' '/>
   <assignedAuthor>
     <id root=' ' extension=' '/>
   </assignedAuthor>
 </author>
 <id root=' ' extension=' '/>
 <code code='11778-8'
       displayName='DELIVERY DATE-TMSTP-PT-^PATIENT-QN-CLINICAL.ESTIMATED'
       codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
 <text><reference value='id-foo'/></text>
 <value xsi:type='TS' value=' '/>
 <entryRelationship typeCode='SPRT'>
   <observation classCode='OBS' moodCode='EVN'>
     <id root=' ' extension=' '/>
     <statusCode code='completed'/>
     <effectiveTime value=' '/>
     <author typeCode='AUT'>
        <time value=' '/>
        <assignedAuthor classCode=' '>
          <id root=' ' extension=' '/>
        </assignedAuthor>
     </author>
     <code code='[11779-6|(xx-EDD-by-PE)|11781-2|(xx-EDD-by-Qck)|(xx-EDD-by-Fund)]'
           codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
     <value type='TS' value=' '>
     <entryRelationship typeCode='DRIV'>
       <observation  classCode='OBS' moodCode='EVN'>
         <id root=' ' extension=' '/>
         <statusCode code='completed'/>
         <effectiveTime value=' '/>
         <author typeCode='AUT'>
           <time value=' '/>
           <assignedAuthor>
             <id root=' ' extension=' '/>
           </assignedAuthor>
         </author>
         <informant typeCode='INF'>
           <relatedEntity classCode=' '>
             <id root=' ' extension=' '/>
           </relatedEntity>
         </informant>
         <code code='[8655-2|(xx-ga-by-pe)|11888-5|(xx-date-of-qck)|(xx-date-of-fund-umb) ]'
               codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
         <value type='[PQ|TS]' value=' ' units='week'/>
       </observation>
     </entryRelationship>
   </observation>
 </entryRelationship>
</observation>
```

Figure 5.4-133

5.4.4.26.2 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.11.2.3.1'/>

The <templateId> identifies the observation as a type of Estimated Delivery Date Observation.

5.4.4.26.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>

EDD observation SHALL comply with the restrictions of a [[1.3.6.1.4.1.19376.1.5.3.1.4.13|Simple Observation]. The observation SHALL NOT include repeatNumber, interpretationCode, methodCode, or targetSiteCode.

5.4.4.26.4 <code code='11778-8' codeSystem='2.16.840.1.113883.6.1'/>

The <code> element indicates that this is a "clinically estimated" estimated delivery date. This code SHALL be the LOINC code 11778-8. It is good style to include the displayName and codeSystemName to help debugging.

5.4.4.26.5 <value xsi:type='TS' value=' '>

The value of the EDD SHALL be represented as a point in time.

5.4.4.26.6 <author typeCode='AUT'><assignedAuthor><id root=' ' extension=' '/></assignedAuthor></author>

There may be multiple clinicians following the patient and authoring the overall document, however the EDD observation has an individual author. This author SHALL be listed in the CDA header and referenced from the entry by including the id element of the assignedAuthor.

5.4.4.26.7 <author typeCode='AUT'><time value=' '/></author>

The author.time is used to record the time that the author recorded the observation. It SHALL be included.

5.4.4.26.8 <entryRelationship typeCode='SPRT'>

The <entryRelationship> element binds the clinicians estimated EDD to supporting observations by different methods. Supporting observations SHOULD be included. If included, the typeCode SHALL be 'SPRT'.

5.4.4.26.9 <observation><templateId root=' '/>...</observation> [1st nesting]

Supporting observations SHALL also conform to the simple observation template. Supporting observations MAY include a different effectiveTime, author, or informant. Supporting observations SHALL NOT include repeatNumber, interpretationCode, methodCode, or targetSiteCode.

5.4.4.26.10 <code code=' ' codeSystem='2.16.840.1.113883.6.1'/> [1st nesting]

Supporting observations SHALL include one of following LOINC values to indicate the method used to calculate the EDD.

Code	Description
11779-6	DELIVERY DATE-TMSTP-PT-^PATIENT-ON-ESTIMATED FROM LAST MENSTRUAL

	PERIOD
(xx-EDD-by-PE)	DELIVERY DATE-TMSTP-PT-^PATIENT-QN-ESTIMATED FROM CLINICIANS PHYSICAL EXAM
11781-2	DELIVERY DATE-TMSTP-PT-^PATIENT-QN-US.COMPOSITE.ESTIMATED
(xx-EDD-by-Qck)	DELIVERY DATE-TMSTP-PT-^PATIENT-QN-ESTIMATED FROM DATE OF QUICKENING
(xx-EDD-by-Fund)	DELIVERY DATE-TMSTP-PT-^PATIENT-QN-ESTIMATED FROM DATE FUNDAL HEIGHT REACHES UMBILICUS

5.4.4.26.11 <entryRelationship typeCode='DRIV'>

Observations of supporting EDD should provide observations from which they were derived such as the patients last menses, or gestational age value at a point in time.

5.4.4.26.12 <code code=' ' codeSystem='2.16.840.1.113883.6.1'/> [2nd nesting]

This code is used to represent the either the relevant date, or the gestational age observation from which the EDD is derived. The following table lists the relevant LOINC codes for methods used. For observations that record the gestational age the value is recorded as a physical quantity (PQ) with the units of weeks and the activity time should be recorded to indicate the date at which the gestational age was observed. For observations that simply record a date (eg LMP) the observation value is recorded as a point in time (TS).

Code	Description	Type
8655-2	DATE LAST MENSTRUAL PERIOD-TMSTP-PT-^PATIENT-QN-REPORTED	TS
(xx-ga-by-PE)	GESTATIONAL AGE-TIME-PT-^FETUS-QN-ESTIMATED FROM CLINICIANS PHYSICAL EXAM	PQ
11888-5	GESTATIONAL AGE-TIME-PT-^FETUS-QN-US.COMPOSITE.ESTIMATED	PQ
(xx-date-of-Qck)	DATE OF QUICKENING-TMSTP-PT-^PATIENT-QN-REPORTED	TS
(xx-date-of-Fund-Umb)	DATE FUNDAL HEIGHT REACHES UMBILICUS-TMSTP-PT-^PATIENT-QN-CLINICIANS PHYSICAL EXAM	TS

5.4.4.26.13 Schematron

```
TODO:
must include templateID and simple obs templateID
must include loinc 11778-8
must include author.assignedAuthor with Id valued
must include author.time
must have value xsi:type=ts
must include text.reference.value
may include effectiveTime
warn should include sprt relation to simple obs
assert must not include entryRelationship other than SPRT.
must not include repeatNumber, interpretationCode, methodCode, or targetSiteCode
if sprt relation included then
  must include obs.id
  must include includes obs.code=(one of loincs)
  may include obs.author
  may include obs.effectiveTime
```

5.4.4.27 Blood Type Observation 1.3.6.1.4.1.19376.1.5.3.1.4.13.6

The blood type observation is a Simple Observation of the patient's blood type. It conforms to the CCD Result observation template.

5.4.4.27.1 Standards

CCD ASTM/HL7 Continuity of Care Document

5.4.4.27.2 Parent Template

The parent of this template is Simple Observation.

5.4.4.27.3 Specification

```
<observation typeCode='OBS' moodCode='EVN'>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.6'/>
 <templateId root='2.16.840.1.113883.10.20.1.31'/>
 <id root=' ' extension=' '/>
 <code code='882-1' displayName='ABO+RH GROUP'
   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='CE' code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '/>
 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>
<observation>
```

Figure 5.4-134

5.4.4.27.4 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.6'/> <templateId root='2.16.840.1.113883.10.20.1.31'/>

These <templateId> elements identify this as a blood type observation. They shall be present in the <observation> element as shown above.

5.4.4.27.5 <code code='882-1' displayName='ABO+RH GROUP' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>

The <code> element shall be present to represent this as a finding of the patient's composite blood type. It shall use the code and codeSystem attributes shown above.

5.4.4.27.6 ~~<repeatNumber value=' '/>~~

The <repeatNumber> element should not be present in a blood type observation.

5.4.4.27.7 <value xsi:type='CE' code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '/>

The <value> element shall be present and shall use the CE data type. The code attribute should be valued using a vocabulary that supports encoding of blood types. The table below shows some coding systems that may be used to encode blood type.

Blood Type Coding Systems

Coding System	OID
ISBT 128	2.16.840.1.113883.6.18
SNOMED CT	2.16.840.1.113883.6.96

5.4.4.27.8 ~~<interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>~~ ~~<methodCode code=' ' codeSystem=' ' codeSystemName=' '/>~~ ~~<targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>~~

The <interpretationCode>, <methodCode>, and <targetSiteCode> should not be present in a blood type observation.

5.4.4.28 Encounters 1.3.6.1.4.1.19376.1.5.3.1.4.14

5.4.4.28.1 Standards

CCD ASTM/HL7 Continuity of Care Document

5.4.4.28.2 Specification

```
<encounter classCode='ENC' moodCode='PRMS|ARQ|EVN'>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.14'/>
 <templateId root='2.16.840.1.113883.10.20.1.21'/>
 <templateId root='2.16.840.1.113883.10.20.1.25'/>
 <id root=' ' extension=' '/>
 <code code=' ' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActEncounterCode' />
 <text><reference value='#xxx'/></text>
 <effectiveTime>
   <low value=' '/>
   <high value=' '/>
 </effectiveTime>
 <priorityCode code=' '/>
 <performer typeCode='PRF'>
   <time><low value=' '/><high value=' '/></time>
   <assignedEntity>...</assignedEntity>
 </performer>
 <author />
 <informant />
 <participant typeCode='LOC'>
   <participantRole classCode='SDLOC'>
     <id/>
     <code/>
     <addr>...</addr>
     <telecom value=' ' use=' '/>
     <playingEntity classCode='PLC' determinerCode='INST'>
       <name></name>
     </playingEntity>
   </participantRole>
 </participant>
</encounter>
```

Figure 5.4-135

5.4.4.28.3 <encounter classCode='ENC' moodCode='APT|ARQ|EVN'>

This element is an encounter. The classCode shall be 'ENC'. The moodCode may be PRMS to indicated a scheduled appointment, ARQ to describe a request for an appointment that has been made but not yet scheduled by a provider, or EVN, to describe an encounter that has already occurred.

5.4.4.28.4 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.14'/>

The templateId indicates that this <encounter> entry conforms to the constraints of this content module. NOTE: When the encounter is in event mood (moodCode='EVN'), this entry conforms to the CCD template 2.16.840.1.113883.10.20.1.21, and when in other moods, this entry conforms to the CCD template 2.16.840.1.113883.10.20.1.25.

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

This required element shall contain an identifier for the encounter. More than one encounter identifier may be present.

5.4.4.28.6 <code code=' ' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActEncounterCode' />

This required element shall contain a code from the HL7 ActEncounterCode vocabulary describing the type of encounter (e.g., inpatient, ambulatory, emergency, et cetera). Developers should take care to check that rational combinations of encounter.code and encounter.moodCode are used , but this profile does not restrict any combination.

5.4.4.28.7 <text><reference value='#xxx'/></text>

The <text> element shall contain a reference to the narrative text describing the encounter.

5.4.4.28.8 <effectiveTime><low value=' '/><high value=' '/></effectiveTime>

This element records the time over which the encounter occurred (in EVN mood), or the desired time of the encounter in ARQ or APT mood. In EVN or APT mood, the effectiveTime element shall be present. In ARQ mood, the effectiveTime element should be present, and if not, the priorityCode shall be present to indicate that a callback is required to schedule the appointment.

5.4.4.28.9 <priorityCode code='CS'/>

This element shall be present in ARQ mood when effectiveTime is not provided. It indicates that a callback is requested to schedule the appointment.

5.4.4.28.10 <performer>

For encounters in EVN mood, at least one performer should be present that identifies the provider of the service given during the encounter. More than one performer may be present. The <time> element should be used to indicate the duration of the participation of the performer when it is substantially different from that of the effectiveTime of the encounter. In ARQ mood, the performer may be present to indicate a preference for a specific provider. In APT mood, the performer may be present to indicate which provider is scheduled to perform the service.

5.4.4.28.11 <participant typeCode='LOC'> <participantRole classCode='SDLOC'>

A <participant> element with typeCode='LOC' may be present to provide information about the location where the encounter is to be or was performed. This element shall have a <participantRole> element with classCode='SDLOC' that describes the service delivery location.

5.4.4.28.12 <id/>

The <id> element may be present to identify the service delivery location.

5.4.4.28.13 <code/>

The <code> element may be present to classify the service delivery location.

5.4.4.28.14 <addr>...</addr>

The <addr> element should be present, and gives the address of the location.

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

The <telecom> element should be present, and gives the telephone number of the location.

5.4.4.28.16 <playingEntity classCode='PLC'> <name>...</name> </playingEntity>

The <playingEntity> shall be present, and gives the name of the location in the required <name> element.

5.4.4.29 Update Entry 1.3.6.1.4.1.19376.1.5.3.1.4.16

The update entry shall contain references to the entries or sections which are being replaced or updated. This reference shall not be present when the update entry is adding a new entries or sections.

Entries and sections can be added, updated, or removed from a PHR. An update entry indicates the entry in the original PHR Extract that should be replaced or updated with new information contained within the entry. Only one organizer of this type is allowed in a section, and if present, it must be the first entry in the section.

5.4.4.29.1 Specification

```
<entry>
  <organizer classCode='ORGANIZER' moodCode='EVN'>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.16'/>
    <reference typeCode='RPLC'>
      <externalAct classCode='ACT' moodCode='EVN'>
        <id root='' extension=''/>
      </externalAct>
    </reference>
  </organizer>
</entry>
```

Figure 5.4-136 Update Entry Example

5.4.4.29.2 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.16'/>

This templateId indicates that the organizer is used to update a PHR Extract.

5.4.4.29.3 <reference typeCode='RPLC|APND'>

Either one reference element shall be present with typeCode APND, or one or more with typeCode RPLC, but APND cannot be combined with RPLC. The reference element lists the acts that are affected by the update. When the typeCode is RPLC, it indicates that any referenced act is being replaced with new information, and this element must be present, and may be repeated to replace more than one act at a time. When the typeCode is APND, the referenced act must be to a section with the same LOINC code as the section containing this entry, and only one reference element is allowed.

5.4.4.29.4 <externalAct classCode='ACT' moodCode='EVN'>

This element must appear as shown above. It indicates that the reference is to an external act (a section or entry contained in the parent document).

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

This element identifies the information being replaced or updated. The identifer is of the entry or section being replaced. If the identifier is to a section being replaced, only one reference element is permitted.

5.4.4.30 Procedure Entry 1.3.6.1.4.1.19376.1.5.3.1.4.19

The procedure entry is used to record procedures that have occured, or which are planned for in the future.

5.4.4.30.1 Standards

CCD ASTM/HL7 Continuity of Care Document

5.4.4.30.2 Specification

```
<procedure classCode='PROC' moodCode='EVN|INT'>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.19'/>
  <templateId root='2.16.840.1.113883.10.20.1.29'/><!-- see text of section 0 -->
  <templateId root='2.16.840.1.113883.10.20.1.25'/><!-- see text of section 0 -->
  <id root='' extension=''/>
  <code code='' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActCode' />
  <text><reference value='#xxx'/></text>
  <statusCode code='completed|active|aborted|cancelled'/>
  <effectiveTime>
    <low value=''/>
    <high value=''/>
  </effectiveTime>
  <priorityCode code=''/>
  <approachSiteCode code='' displayName='' codeSystem='' codeSystemName=''/>
  <targetSiteCode code='' displayName='' codeSystem='' codeSystemName=''/>
  <author />
  <informant />
  <entryRelationship typeCode='REFR'>
    <encounter classCode='ENC' moodCode=''>
      <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4.1'/>
      <id root='' extension=''/>
    </encounter>
  </entryRelationship>
  <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>
</procedure>
```

Figure 5.4-137 Procedure Entry Example

5.4.4.30.3 <procedure classCode='PROC' moodCode='EVN|INT'>

This element is a procedure. The classCode shall be 'PROC'. The moodCode may be INT to indicated a planned procedure or EVN, to describe a procedure that has already occurred.

5.4.4.30.4 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.19'/>

The templateId indicates that this <procedure> entry conforms to the constraints of this content module. NOTE: When the procedure is in event mood (moodCode='EVN'), this entry conforms to the CCD template 2.16.840.1.113883.10.20.1.29, and when in intent mood, this entry conforms to the CCD template 2.16.840.1.113883.10.20.1.25.

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

This required element shall contain an identifier for the procedure. More than one procedure identifier may be present.

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

This element shall be present, and should contain a code describing the type of procedure.

5.4.4.30.7 <text><reference value='#xxx'/></text>

The <text> element shall contain a reference to the narrative text describing the procedure.

5.4.4.30.8 <statusCode code='completed|active|aborted|cancelled'/>

The <statusCode> element shall be present when used to describe a procedure event. It shall have the value 'completed' for procedures that have been completed, and 'active' for procedures that are still in progress. Procedures that were stopped prior to completion shall use the value 'aborted', and procedures that were cancelled before being started shall use the value 'cancelled'.

5.4.4.30.9 <effectiveTime><low value=' '/><high value=' '/></effectiveTime>

This element should be present, and records the time at which the procedure occurred (in EVN mood), or the desired time of the procedure in INT mood.

5.4.4.30.10 <priorityCode code=' '/>

This element shall be present in INT mood when effectiveTime is not provided, it may be present in other moods. It indicates the priority of the procedure.

5.4.4.30.11 <approachSiteCode code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '/>

This element may be present to indicate the procedure approach.

5.4.4.30.12 <targetSiteCode code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '/>

This element may be present to indicate the target site of the procedure.

5.4.4.30.13 <entryRelationship typeCode='COMP' inversionInd='true'>

This element may be present to point the encounter in which the procedure was performed, and shall contain an internal reference to the encounter. See section 1.3.6.1.4.1.19376.1.5.3.1.4.4.1 for more details.

5.4.4.30.14 <entryRelationship typeCode='RSON'>

A <procedure> act may indicate one or more reasons for the procedure. These reasons identify the concern that was the reason for use via the Internal Reference entry content module specified in section 1.3.6.1.4.1.19376.1.5.3.1.4.4.1. The extension and root of each observation present must match the identifier of a concern entry contained elsewhere within the CDA document.

5.4.4.31 Transport 1.3.6.1.4.1.19376.1.5.3.1.1.10.4.1

A mode of transport entry indicates the intended mode of transport and expected time of arrival of the patient.

5.4.4.31.1 Specification

```
<entry>
  <!-- Intent to transport -->
  <act classCode='TRNS' moodCode='INT{{!}}EVN'>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.4.1'/>
    <id root=' ' extension=' '/>
    <code code=' ' displayName=' '
          codeSystem='2.16.840.1.113883.6.102.4.2'
          codeSystemName='DEEDS4.02'>
      <originalText><reference value='#(ID of text coded)/></orginalText>
    </code>
    <text><reference value='#text/></text>
    <!-- effectiveTime
    <effectiveTime>
      <low value=''/><!-- start of transport, not normally sent -->
      <high value=''/><!-- end of transport (arrival) -->
    </effectiveTime>
  </act>
</entry>
```

Figure 5.4-138 Transport Example

5.4.4.31.2 <act classCode='TRNS' moodCode='INT|EVN'>

This element indicates that the entry is regard to transport the patient. This entry records the mode, and intended or actual ending time of transportation. In intent mood (moodCode='INT') this is how the estimated time of arrival is indicated. In event mood (moodCode='EVN') this is how the actual arrival of the patient is recorded.

5.4.4.31.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.4.1'/>

The <templateId> element identifies this <act> as about the tranportation of the patient. The templateId must have root='1.3.6.1.4.1.19376.1.5.3.1.1.10.4.1'.

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

The entry must have an identifier.

5.4.4.31.5 <code code=' ' displayName=' ' codeSystem='2.16.840.1.113883.6.102.4.2' codeSystemName='DEEDS4.02'>

The code describes the intented mode of transport. IHE recommends the use of a code system based on the DEEDS Mode of Transportation data element value set. However, the vocabulary used within an affinity domain should be determined by a policy agreement within the domain.

5.4.4.31.6 <originalText><reference value='#xxx'/><orginalText>

This is a reference to the narrative text within the section that describes the mode of transportation.

5.4.4.31.7 <text><reference value='#text/></text>

This is a reference to the narrative text cooresponding to the transport act.

5.4.4.31.8 <effectiveTime>

The effectiveTime element shall be sent. It records the interval of time over which transport is intended to occur. The use cases for this information reqires that only the ending time of transport be recorded. Therefore the <low value=' '> element need not be sent.

5.4.4.31.9 <high value=' '/>

This element records the expected time of completion of transport, and is required. If unknown, it must be recorded using a flavor of null. This element may be sent using the TS data type, as shown above. If there is uncertainty about the expected time of completion of transport, the sender may record the expected time of arrival using the IVL_TS data type, as shown below.

```
<high xsi:type='IVL_TS'>
  <low value=''/>
  <high value=''/>
</high>
```

Figure 5.4-139 ETA as a Time Range

5.4.4.32 Intended Encounter Disposition 1.3.6.1.4.1.19376.1.5.3.1.1.10.4.2

This element records the referring provider's intended disposition for the patient (e.g., admit, discharge home after treatment, et cetera).

5.4.4.32.1 Specification

```
<encounter classCode='ENC' moodCode='INT' >
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.4.2'/>
  <id root='' extension=''/>
  <code code='' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActEncounterCode' />
  <text><reference value='#xxx'/></text>
  <effectiveTime>
    <low value=''/>
    <high value=''/>
  </effectiveTime>
  <ihe:dischargeDispositionCode
    xmlns:ihe='urn:oid:1.3.6.1.4.1.19376.1.5.3.4'
    code='' codeSystem='' codeSystemName=''/>
</encounter>
```

Figure 5.4-140 Intended Encounter Disposition Example

5.4.4.32.2 <encounter classCode='ENC' moodCode='INT'>

This element describes the intended emergency encounter. The classCode shall be 'ENC'. The moodCode shall be INT.

5.4.4.32.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.10.4.2'/>

The templateId indicates that this <encounter> entry conforms to the constraints of this content module.

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

This required element shall contain an identifier for the intended encounter.

5.4.4.32.5 <code code='EMER' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActEncounterCode' />

This required element indicates that the intended encounter is an ED encounter, and shall be recorded exactly as specified above.

5.4.4.32.6 <text><reference value='#xxx'/></text>

The <text> element shall contain a reference to the narrative text describing the intended actions that should occur during the encounter.

5.4.4.32.7 <priorityCode code='EM|UR'/>

This element may be provided to distinguish between urgent and emergency care.

5.4.4.32.8 <pcc:dischargeDispositionCode xmlns:pcc='urn:oid:1.3.6.1.4.1.19376.1.5.3.4' code=' ' codeSystem=' ' codeSystemName='DEEDS8.02'/>

This element is an extension the CDA Release 2.0 specification. This attribute is a RIM attribute of the Encounter class that has been constrained out of the Encounter act in the CDA Release 2.0 clinical statement model. The purpose of this extension is to be able to record expected disposition of the patient upon completion of the emergency encounter. The code system used to record this information shall be determined by affinity domain

policy. Two vocabularies that are commonly in use to describe discharge disposition codes are DEEDS (See section 8.02), and in the US, the Uniform National Billing Code.

5.4.4.33 Coverage Entry 1.3.6.1.4.1.19376.1.5.3.1.4.17

Payers shall be recorded as described in CCD: 3.1.2.1.2.

5.4.4.33.1 Standards

CCD ASTM/HL7 Continuity of Care Document

5.4.4.33.2 Specification

```
<act classCode='ACT' moodCode='DEF'>
  <templateId root='2.16.840.1.113883.10.20.1.20'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.17'/>
  <id root='' extension='' />
  <code code='48768-6' displayName='PAYMENT SOURCES'
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <statusCode code='completed'/>
  <entryRelationship typeCode='COMP'>
    <sequenceNumber value=''/>
      :
  </entryRelationship>
</act>
```

Figure 5.4-141 Coverage Entry Example

5.4.4.33.3 <act classCode='ACT' moodCode='DEF'>

Coverage shall be recorded in an <act> that groups all patient coverage together, and defines (moodCode='DEF') the payers.

5.4.4.33.4 <templateId root='2.16.840.1.113883.10.20.1.20'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.17'/>

The <act> conforms to CCD: 3.1.2.1.1 as well as this specification. This shall be reflected by including the <templateId> elements shown above.

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

The <id> element shall be present.

5.4.4.33.6 <code code='48768-6' displayName='PAYMENT SOURCES' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>

The <code> element shall be recorded exactly as shown above.

5.4.4.33.7 <statusCode code='completed'/>

The <statusCode> element shall be present exactly as shown above.

5.4.4.33.8 <entryRelationship typeCode='COMP'>

The coverage <act> shall have one or more <entryRelationship> elements. These elements define the coverage. The entry relationships must contain Payer Entries.

5.4.4.33.9 <sequenceNumber value=' '/>

The <sequenceNumber> element may be present. If present, it shall contain a value attribute that indicates the priority of the payment source.

5.4.4.34 Payer Entry 1.3.6.1.4.1.19376.1.5.3.1.4.18

The payer entry allows information about the patient's sources of payment to be recorded.

5.4.4.34.1 Standards

CCD ASTM/HL7 Continuity of Care Document

5.4.4.34.2 Specification

```
<act classCode='ACT' moodCode='EVN'>
  <templateId root='2.16.840.1.113883.10.20.1.26'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.18'/>
  <id root='' extension=''/>
  <code code='' displayName='' codeSystem='' codeSystemName=''/>
  <statusCode code='completed'/>
  <performer typeCode='PRF'><!-- payer -->
    <assignedEntity classCode='ASSIGNED'>
      <id root='' extension=''/>
      <code code='PAYOR|GUAR|PAT' displayName=''
        codeSystem='2.16.840.1.113883.5.110' codeSystemName='RoleClass'/>
      <addr></addr>
      <telecom value='' use=''/>
      <representedOrganization typeCode='ORG'>
        <name></name>
      </representedOrganization>
    </assignedEntity>
  </performer>
  <participant typeCode='COV'><!-- member -->
    <participantRole classCode='PAT'>
      <id root='' extension=''/>
      <code code='SUBSCR|DEPEND' displayName='subscriber|dependent'
        codeSystem='2.16.840.1.113883.5.111' codeSystemName='RoleCode'/>
      <addr></addr>
      <telecom value='' use=''/>
      <playingEntity><name></name></playingEntity>
    </participantRole>
  </participant>
  <participant typeCode='HLD'><!-- subscriber -->
    <participantRole classCode='PAT'>
      <id root='' extension=''/>
      <playingEntity><name></name></playingEntity>
    </participantRole>
  </participant>
  <entryRelationship typeCode='REFR'>
    <act classCode='ACT' moodCode='DEF'>
      <id root='' extension=''/>
      <code code='' displayName='' codeSystem='' codeSystemName=''/>
      <text><reference value=''/></text>
    </act>
  </entryRelationship>
</act>
```

Figure 5.4-142 Payer Entry Example

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

The policy entry <act> describes the policy or program that has agreed to pay (moodCode='EVN') for the patient's treatment.

5.4.4.34.4 <templateId root='2.16.840.1.113883.10.20.1.26'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.18'/>

The <act> conforms to CCD: 3.1.2.1.2 and this guide. This shall be reflected by including the <templateId> elements shown above.

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

The <act> shall contain at least one <id> element that represents the policy or group number of the coverage.

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

The <code> element should be present, and represents the type of coverage provided by the payer. Potential vocabularies to use include:

Payer Type Vocabularies

Vocabulary	Description	OID
HL7 ActCoverageType	The HL7 ActCoverageType vocabulary describes payers and programs. Note that HL7 does not have a specific code to identify an individual payer, e.g., in the role of a guarantor or patient.	2.16.840.1.113883.5.4
X12 Data Element 1336	The X12N 271 implementation guide includes various types of payers. This code set does include a code to identify individual payers.	2.16.840.1.113883.6.255.1336

5.4.4.34.7 <statusCode code='completed'/>

The <statusCode> element shall be present, and should be recorded exactly as shown above.

5.4.4.34.8 <performer typeCode='PRF'> <assignedEntity classCode='ASSIGNED'>

The <performer> element shall be present to represent the payer of the coverage.

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

The identity of the performer should be recorded in the <id> element.

5.4.4.34.10 <code code='PAYOR|GUAR|PAT' displayName=' ' codeSystem='2.16.840.1.113883.5.110' codeSystemName='RoleClass'/>

The <code> element describes the role of the payer. It shall contain one of the values listed in the table below.

Payer Role Codes

Code	Description
PAYOR	Used to indicate that the payer is a payor for a policy or program.
GUAR	Used to indicate that the payer is a guarantor for the patient.
PAT	Used to indicate that the payer is the patient.

5.4.4.34.11 <addr></addr>

The <addr> element shall be used to record the address of the payer. This information will usually come from the back of an insurance card.

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

The <telecom> element shall be used to record the phone number of the payer. This information will usually come from the back of an insurance card.

5.4.4.34.13 <representedOrganization typeCode='ORG'> <name></name>

The name of the payer organization shall be provided in the <name> element contained within the <representedOrganization> element.

5.4.4.34.14 <participant typeCode='COV'> <participantRole classCode='PAT'>

Information about the patient with respect to the policy or program shall be recorded in the <participantRole> element shown above. This element shall be present when the patient is a member of a policy or program.

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

The <id> element should contain the identifier of the patient with respect to the payer (the subscriber or member id).

5.4.4.34.16 <code code='SUBSCR|DEPEND' displayName='subscriber|dependent' codeSystem='2.16.840.1.113883.5.111' codeSystemName='RoleCode'/>

The <code> element shall indicate whether the member is the subscriber (code='SUBSCR') or a dependent (code='DEPEND') using the code values given above.

5.4.4.34.17 <addr></addr>

The <addr> element should be used to record the address of the patient as known to the payer when different from that recorded in the <patientRole> element.

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

The <telecom> element should be used to record the phone number of the patient when different from that recorded in the <patientRole> element.

5.4.4.34.19 <playingEntity><name></name></playingEntity>

The <name> element should be used to record the member name when it is different from that recorded in the <patient> element.

5.4.4.34.20 <participant typeCode='HLD'> <participantRole classCode='IND'>

Information about subscriber to the policy or program shall be recorded in the <participantRole> element shown above. This element shall be present when the subscriber is different from the patient.

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

The <id> element shall contain the identifier of the subscriber when the subscriber is not the patient.

5.4.4.34.22 <addr></addr>

The <addr> element shall be used to record the address of the subscriber when the subscriber is not the patient.

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

The <telecom> element shall be used to record the phone number of the subscriber when the subscriber is not the patient.

5.4.4.34.24 <playingEntity><name></name></playingEntity>

The name of the subscriber shall be recorded in the <name> element of the <playingEntity>.

5.4.4.34.25 <entryRelationship typeCode='REFR'> <act classCode='ACT' moodCode='DEF'>

The plan information may be provided in the elements described above.

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

The health plan identifier is recorded in the <id> element.

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

This <reference> element shown above should be present and the value attribute should point to the name of the plan contained in the narrative of the document.

5.4.4.35 Pain Score Observation 1.3.6.1.4.1.19376.1.5.3.1.1.12.3.1

The pain score observation is a Simple Observation that records the patient's assessment of their pain on a scale from 0 to 10.

5.4.4.35.1 Parent Template

The parent of this template is Simple Observation.

5.4.4.35.2 Specification

```
<observation typeCode='OBS' moodCode='EVN'>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
 <templateId root=1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
 <id root=' ' extension=' '/>
 <code code='38208-5|38221-8|38214-3' 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='CO|REAL' />
 <interpretationCode code='301379001|40196000|76948002|67849003' codeSystem='2.16.840.1.113883.6.96'
codeSystemName='SNOMED CT'/>
 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>
</observation>
```

Figure 5.4-143

5.4.4.35.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>

The <templateId> identifies this as a Pain Score Observation, and shall be present as shown above.

5.4.4.35.4 <code code='38208-5' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>

The <code> element indicates what kind of pain observation was made. It may be one of the three values shown above, corresponding to the pain score observations described in the table below.

Pain Score Codes

Code	Data Type	Description
38208-5	CO	A Pain Score made using the Numerical Rating Scale (NRS), where pain is assessed on a scale from 0 to 10.

5.4.4.35.5 <value xsi:type='CO' value=' ' />

The <value> element records the assessed pain score. If using the NRS the pain is assessed using coded ordinal values that range from 0 to 10. The use of the coded ordinal type is required because while pain assessments are ordered values, and can be compared, the differences between two pain assessment values cannot be compared, and so these values are not really numbers.

5.4.4.35.6 <interpretationCode code='301379001|40196000|76948002|67849003' codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'/>

The <interpretationCode> element should be present, and provides an interpretation of the pain scale assessment using SNOMED CT.

Pain Score Interpretation Codes

Pain Score Range	Code	Description
0	301379001	No Present Pain
2-4	40196000	Mild Pain
6-8	76948002	Severe Pain
10	67849003	Excruciating Pain

See also SNOMED Pain Numerical Rating Scale Mapping

Note: This mapping was funded by The Office of the Assistant to the Secretary for Planning and Evaluation within the US Department of Health and Human Services.

For Public Comment The mapping provided does not cover all possible pain scale scores using a single SNOMED code, which is required by the CE data type. What should be done about that? Should additional SNOMED CT concepts be requested to fill the gaps? Should the mapping be improved? In what way?

5.4.4.35.7 ~~<methodCode code=' ' codeSystem=' ' codeSystemName=' '/>~~

The <methodCode> should not be present in a Pain Score Observation, as the method is implied by the <code> element.

5.4.4.35.8 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>

The <targetSiteCode> element should be present, and shall indicate the location of the pain being assessed.

5.4.4.36 Braden Score Observation 1.3.6.1.4.1.19376.1.5.3.1.1.12.3.2

The Braden Scale is a summated rating scale made up of six subscales scored from 1-3 or 4, for total scores that range from 6-23. The subscales measure functional capabilities of the patient that contribute to either higher intensity and duration of pressure or lower tissue tolerance for pressure. A lower Braden Scale Score indicates lower levels of functioning and, therefore, higher levers of risk for pressure ulcer development. This entry shows how to record the Braden Score and its component assessment scores.

5.4.4.36.1 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='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.2'/>
 <id root=' ' extension=' '/>
 <code code='38227-5'
       displayName='Braden scale score.total'
       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='INT' value=' '/>
 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <!-- Six entries, containing each of the assessment components -->
 <entryRelationship typeCoded='COMP'>
   <observation classCode='OBS' moodCode='EVN'>
     <tempateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.3'/>
       :
   </observation>
 </entryRelationship>
</observation>
```

Figure 5.4-144

5.4.4.36.2 <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='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.2'/>

These <templateId> elements identify this entry as a Braden Score Observation. Furthermore, they identify it as a CCD Result entry, and a Simple Observation. They shall be present as shown above.

5.4.4.36.3 <code code='38227-5' displayName='Braden scale score.total' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>

The <code> element identifies this observation as being a Braden Scale Score.

For Public Comment	Both LOINC and SNOMED CT support identification of the Braden Scale Score. Should we select one (e.g. LOINC as shown) or the other, require the use of both, allow the sender to choose which coding system to use?

5.4.4.36.4 <value xsi:type='INT' value=' '/>

The <value> element shall be present, and records the Braden Score for the patient. The value shall be within the range of 6 to 23 inclusive.

5.4.4.36.5 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>

The <interpretationCode> may be present to indicate the risk for pressure sores.

For Public Comment	This is a CE data type, which means that it must use a coding system that does not use qualifiers to assess risk. Should we ask SNOMED for a set of concepts that can be used here?

5.4.4.36.6 ~~<methodCode code=' ' codeSystem=' ' codeSystemName=' '/> <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>~~

5.4.4.36.7 <!-- Six entries, containing each of the assessment components --> <entryRelationship typeCoded='COMP'> <observation classCode='OBS' moodCode='EVN'> <tempateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.3'/>

The Braden score is made up of six assessments. Each assessment is scored individually. The overall score indicates the patient risk for pressure sores, and the individual component scores help the reciever of the information determine the appropriate interventions. Thus, a Braden Score Observation shall always be transmitted with all of its component assessments. See Braden Score Component for details on encoding the assessment components.

5.4.4.37 Braden Score Component 1.3.6.1.4.1.19376.1.5.3.1.1.12.3.3

This entry supports the recording of the observations from the six subscales of the Braden Score. These scales are scored from 1-3 or 4. The subscales measure functional capabilities of the patient that contribute to either higher intensity and duration of pressure or lower tissue tolerance for pressure. This entry shows how to record the assessment scores Braden Score components.

5.4.4.37.1 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='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.3'/>
 <id root=' ' extension=' '/>
 <code code='38222-6|38229-1|38223-4|38224-2|38225-9|38226-7'
       displayName=' '
       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='INT' value=' '/>
 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>
</observation>
```

Figure 5.4-145

5.4.4.37.2 <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='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.3'/>

These <templateId> elements identify this entry as a Braden Score Component. Furthermore, they identify it as a CCD Result entry, and a Simple Observation. They shall be present as shown above.

5.4.4.37.3 <code code='38222-6|38229-1|38223-4|38224-2|38225-9|38226-7' displayName=' ' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>

The <code> element identifies which component of the Braden Scale is being assessed in this observation. The valid codes are listed in the table below.

Component	LOINC Code
Sensory Perception	38222-6
Moisture Exposure	38229-1
Physical Mobility	38224-2
Physical Activity	38223-4
Nutrition Intake Pattern	38225-9
Friction and Shear	38226-7

Table 5.4-15 Braden Component Score Codes

For Public Comment	Both LOINC and SNOMED CT support identification of the Braden Scale Assessment panel components. Should we select one (e.g. LOINC as shown) or the other, require the use of both, allow the sender to choose which coding system to use? The LOINC codes are very specific, and identify each component as being a component of the Braden Scale, whereas the SNOMED CT codes are mappings of existing codes to Brade Scale components

5.4.4.37.4 <effectiveTime value=' '/>

The <effectiveTime> element need not be present, as it is already recorded in the observation for which this is a component.

5.4.4.37.5 <value xsi:type='INT' value=' '/>

The <value> element shall be present, and records the Braden Score for the component assessed. The value shall be within the range of 1 to 4 inclusive for all components except the Friction/Shear score, which shall be within the range of 1 to 3 inclusive.

5.4.4.37.6 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>

The <interpretationCode> may be present to describe the meaning of the score value. Interpretations for each of the scores for each assessment component are shown in the table below.

Component	Code	Score	Interpretation Code	Description
Sensory Perception	38222-6	1		
		2		
		3		
		4		
Moisture Exposure	38229-1	1		
		2		
		3		
		4		
Physical Mobility	38224-2	1		
		2		
		3		
		4		
Physical Activity	38223-4	1		
		2		
		3		
		4		
Nutrition Intake Pattern	38225-9			
		2	255351007	Poor
		3	88323005	Adequate
		4	425405005	Excellent
Friction and Shear	38226-7	1	301684000	Does not move in bed
		2	301697003	Difficulty moving up and down bed

		3	301693004	able to move up and down bed

Table 5.4-16 Braden Component Score Interpretation Codes

For Public Comment	This is a CE data type, which means that it must use a coding system that does not use qualifiers to assess risk. Should we ask SNOMED for a set of concepts that can be used here?

5.4.4.37.7 ~~<methodCode code=' ' codeSystem=' ' codeSystemName=' '/> <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>~~

The <methodCode> and <targetSiteCode> elements shall not be used.

5.4.4.38 Geriatric Depression Score Observation 1.3.6.1.4.1.19376.1.5.3.1.1.12.3.4

The Geriatric Depression Scale is a summated rating scale over 30 yes or no questions for total scores that range from 0-30. This entry shows how to record the Geriatric Depression Score and its component assessment scores.

5.4.4.38.1 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='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.4'/>
 <id root=' ' extension=' '/>
 <code code='48544-1'
       displayName='Geriatric Depression Scale Total'
       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='INT' value=' '/>
 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <!-- From 0 to 30 entries, containing some or all of the assessment components -->
 <entryRelationship typeCoded='COMP'>
   <observation classCode='OBS' moodCode='EVN'>
     <tempateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.5'/>
       :
   </observation>
 </entryRelationship>
</observation>
```

Figure 5.4-146 Geriatric Depression Score Observation Example

5.4.4.38.2 <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='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.4'/>

These <templateId> elements identify this entry as a Geriatric Depression Score Observation. Furthermore, they identify it as a CCD Result entry, and a Simple Observation. They shall be present as shown above.

5.4.4.38.3 <code code='48544-1' displayName='Geriatric Depression Scale Total' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>

The <code> element identifies this observation as being a Geriatric Depression Score.

5.4.4.38.4 <value xsi:type='INT' value=' '/>

The <value> element shall be present, and records the Geriatric Depression Score for the patient. The value shall be within the range of 0 to 30 inclusive.

5.4.4.38.5 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>

The <interpretationCode> may be present to indicate the risk for Geriatric Depression.

For Public Comment	This is a CE data type, which means that it must use a coding system that does not use qualifiers to assess risk. Should we ask SNOMED for a set of concepts that can be used here?

5.4.4.38.6 ~~<methodCode code=' ' codeSystem=' ' codeSystemName=' '/> <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>~~

The <methodCode> and <targetSiteCode> elements shall not be used in a Geriatric Depression Score Observation.

5.4.4.38.7 <!-- From 0 to 30 entries, containing some or all of the assessment components --> <entryRelationship typeCoded='COMP'> <observation classCode='OBS' moodCode='EVN'> <tempateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.5'/>

The Geriatric Depression Score is made up of 30 assessments. Each assessment is scored individually. The overall score indicates the patient risk for depression. The individual components may help the reciever of the information determine appropriate interventions, but need not be present to make the score usefull. Thus, a Braden Score Observation may transmit some or all of its component assessments. See Geriatric Depression Score Component for details on encoding the assessment components.

5.4.4.39 Geriatric Depression Score Component 1.3.6.1.4.1.19376.1.5.3.1.1.12.3.5

This entry supports the recording of the observations from the 30 sumcomponents of the Geriatric Depression Score. These scales are scored using a value of 0 or 1. This entry shows how to record the assessment scores Geriatric Depression Score components.

5.4.4.39.1 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='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.5'/>
 <id root=' ' extension=' '/>
 <code code=' ' displayName=' '
       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='INT' value=' '/>
 <interpretationCode code='373066001|373067005' displayName='Yes|No'
      codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'/>
 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>
</observation>
```

Figure 5.4-147 Geriatric Depression Score Component Example

5.4.4.39.2 <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='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.5'/>

These <templateId> elements identify this entry as a Geriatric Depression Score Component. Furthermore, they identify it as a CCD Result entry, and a Simple Observation. They shall be present as shown above.

5.4.4.39.3 <code code=' ' displayName=' ' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>

The <code> element identifies which component of the Geriatric Depression Scale is being assessed in this observation. The valid codes are listed in the table below.

LOINC Code	Question	Yes Score	No Score
48512-8	Are you basically satisfied with your life	0	1
48513-6	Have you dropped many of your activities and interests	1	0
48514-4	Do you feel that your life is empty	1	0
48515-1	Do you often get bored	1	0
48516-9	Are you hopeful about the future	0	1
48517-7	Are you bothered by thoughts you cannot get out of your head	1	0
48518-5	Are you in good spirits most of the time	0	1
48519-3	Are you afraid that something bad is going to happen to you	1	0
48520-1	Do you feel happy most of the time	0	1
48521-9	Do you often feel helpless	1	0
48522-7	Do you often get restless and fidgety	1	0
48523-5	Do you prefer to stay at home, rather than going out and doing new things	1	0
48524-3	Do you frequently worry about the future	1	0
48525-0	Do you feel you have more problems with memory than most	1	0

48526-8	Do you think it is wonderful to be alive now	0	1
48527-6	Do you often feel downhearted and blue	1	0
48528-4	Do you feel pretty worthless the way you are now	1	0
48529-2	Do you worry a lot about the past	1	0
48530-0	Do you find life very exciting	0	1
48531-8	Is it hard for you to get started on new projects	1	0
48532-6	Do you feel full of energy	0	1
48533-4	Do you feel that your situation is hopeless	1	0
48534-2	Do you think that most people are better off than you are	1	0
48535-9	Do you frequently get upset over little things	1	0
48536-7	Do you frequently feel like crying	1	0
48537-5	Do you have trouble concentrating	1	0
48538-3	Do you enjoy getting up in the morning	0	1
48539-1	Do you prefer to avoid social gatherings	1	0
48540-9	Is it easy for you to make decisions	0	1
48541-7	Is your mind as clear as it used to be	1	0

Table 5.4-17 Geriatric Depression Component Codes and Scores

5.4.4.39.4 <effectiveTime value=' '/>

The <effectiveTime> element need not be present, as it is already recorded in the observation for which this is a component.

5.4.4.39.5 <value xsi:type='INT' value=' '/>

The <value> element shall be present, and records the Geriatric Depression Score for the component assessed. The value shall contain either 0 or 1.

5.4.4.39.6 <interpretationCode code='373066001|373067005' displayName='Yes|No' codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'/>

The <interpretationCode> may be present to describe the meaning of the score value. Interpretations for each of the scores for each assessment component are shown in the table below.

SNOMED CT Code	Description
373066001	Yes
373067005	No

Table 5.4-18 Interpretation Codes for Geriatric Depression Score Components

5.4.4.39.7 ~~<methodCode code=' ' codeSystem=' ' codeSystemName=' '/> <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>~~

The <methodCode> and <targetSiteCode> elements shall not be used.

5.4.4.40 Survey Panel 1.3.6.1.4.1.19376.1.5.3.1.1.12.3.7

A survey panel collects related survey observations.

5.4.4.40.1 Parent Template

This template is compatible with the ASTM/HL7 Continuity of Care Document template: 2.16.840.1.113883.10.20.1.32

5.4.4.40.2 Specification

```
<organizer classCode='CLUSTER' moodCode='EVN'>
  <templateId root='2.16.840.1.113883.10.20.1.32'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.7'/>
  <id root='' extension=''/>
  <code code=' ' displayName=' '
    codeSystem=' ' codeSystemName=' '/>
  <statusCode code='completed'/>
  <effectiveTime value=''/>
  <!-- one or more survey observations -->
  <component typeCode='COMP'>
    <observation classCode='OBS' moodCode='EVN'>
      <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.6'/>
        :
    </observation>
  </component>
</organizer>
```

Figure 5.4-148 Survey Panel Example

5.4.4.40.3 <organizer classCode='CLUSTER' moodCode='EVN'>

The survey panel is a cluster of related survey observations.

5.4.4.40.4 <templateId root='2.16.840.1.113883.10.20.1.32'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.7'/>

The survey panel shall have the <templateId> elements shown above to indicate that it inherits constraints from the ASTM/HL7 CCD Specification for results organizers, and the constraints of this specification.

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

The organizer shall have an <id> element.

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

The <code> element shall be present, and identifies the survey panel.

5.4.4.40.7 <statusCode code='completed'/>

The observations have all been completed.

5.4.4.40.8 <effectiveTime value=' '/>

The effective time element shall be present to indicate when the survey panel was taken.

5.4.4.40.9 <!-- one or more survey observations --> <component typeCode='COMP'>

The organizer shall have one or more <component> elements that are <observation> elements using the Survey Observation template.

5.4.4.41 Survey Observation 1.3.6.1.4.1.19376.1.5.3.1.1.12.3.6

Survey observations are used to record responses to assessment instruments. They are simple observations conforming to the CCD Result template. The vocabulary and data type constraints on survey observations is specified elsewhere, either in the specializations of the survey observation template, or by the template that makes use of it.

5.4.4.41.1 Parent Template

The parent of this template is Simple Observation. This template is compatible with the ASTM/HL7 Continuity of Care Document template: 2.16.840.1.113883.10.20.1.31

5.4.4.41.2 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='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.6'/>
 <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='CO|CD|INT|PQ' />
 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>
</observation>
```

Figure 5.4-149 Survey Observation Example

5.4.4.41.3 <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='1.3.6.1.4.1.19376.1.5.3.1.1.12.3.6'/>

A survey observation shall have the <templateId> elements shown above to indicate that it inherits constraints from the ASTM/HL7 CCD Specification for results, and the constraints of this specification.

5.4.4.41.4 <code code=' ' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>

A survey observation entry shall contain a code identifying the observation made.

5.4.4.41.5 <value xsi:type='CO|CD|INT|PQ' .../>

The <value> element shall be present, and shall be of the appropriate data type specified for the observation.

5.4.4.41.6 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>

An interpretation code may be present to provide an interpretation of the observation.

5.4.4.41.7 ~~<methodCode code=' ' codeSystem=' ' codeSystemName=' '/> <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>~~

The <methodCode> and <targetSiteCode> element shall not be present, as these are not relevant to survey responses.

Appendix A Examples using PCC Content Profiles

A.1 Medical Summaries

A.1.1 Referral Summary

A.1.2 Discharge Summary

A.2 Exchange of PHR Content

A.2.1 XPHR Content

A.2.2 XPHR Update

A.3 Basic Patient Privacy Consents

A.3.1 A Consent to Share Information

A.3.2 Recording Sensitivity in Medical Documents

A.4 Antepartum Care Summary

Appendix B 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>
```

B.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 resolved problems.
      </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>
```

B.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.

B.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.

Appendix C 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.

C.1 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).

C.1.1 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.

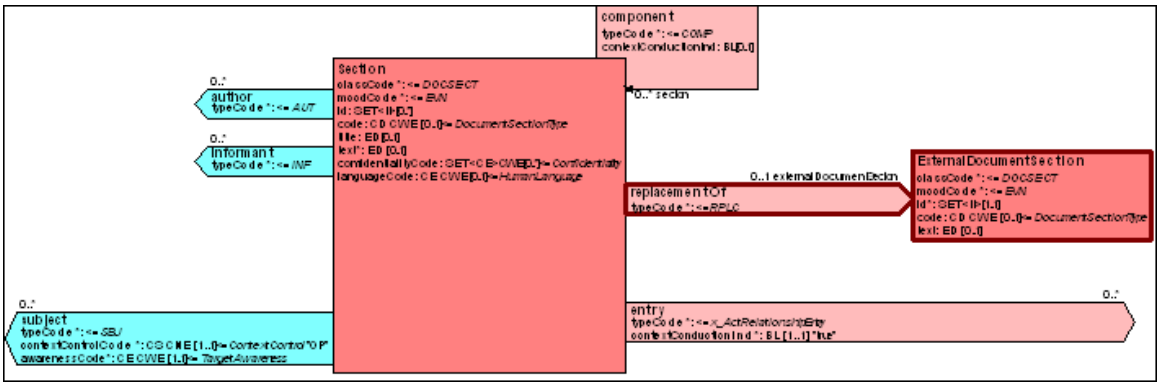

Figure 5.4-150 Model for replacementOf

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>
```

C.2 Extensions Defined Elsewhere used by IHE PCC

C.2.1 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>
```

Figure 5.4-151 Example use of the Patient Identifier Extension

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.

Appendix D Sending HL7 Version 3 Messages

For Public Comment	This appendix and Appendix O of the ITI Technical Framework overlap in content. If you are reviewing this profile, we would like your feedback on the content of this appendix and of the ITI Appendix. Appendix O of the ITI Technical Framework can be found in the PIX/PDQ Version 3 Profile

HL7 Version 3 messages are sent in XML. Each message has information related to:

1. Messaging Infrastructure
2. Control Act
3. Domain Content

The first two components are described in greater detail below. Domain content is decribed in further detail within the IHE Profiles.

D.1 Message Infrastructure

This section of the message conveys information about the message itself, including:

- The message identity
- Creation time of the message
- The message type
- Processing controls on the message
- Identity of the sending and recieving systems
- The control act which is being conveyed in the message

An example message illustrating the message infrastructure elements is shown below.


```
<HL7Interaction xmlns="urn:hl7-org:v3" ITSVersion="XML_1.0"
               xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <id root=' ' extension=' '/>
 <creationTime value=' '/>
 <interactionId extension='HL7Interaction' root='2.16.840.1.113883'/>
 <processingCode code='D|P|T'/>
 <processingModeCode code='A|T|I|R'/>
 <acceptAckCode code='AL|ER|NE'/>
 <receiver typeCode="RCV">
   <device determinerCode="INSTANCE">
     <id/>
     <name/>
     <desc/>
     <existenceTime><low value=' '/></existenceTime>
     <telecom value=' ' />
     <manufacturerModelName/>
     <softwareName/>
   </device>
 </receiver>
 <sender typeCode="SND">
   <device determinerCode="INSTANCE">
     <id/>
     <name/>
     <desc/>
     <existenceTime><low value=' '/></existenceTime>
     <telecom value=' ' />
     <manufacturerModelName/>
     <softwareName/>
   </device>
 </sender>
 <controlActProcess>
  See Control Act Process below
 </controlActProcess>
</HL7Interaction>
```

D.1.1 <HL7Interaction xmlns="urn:hl7-org:v3" ITSVersion="XML_1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

The HL7 Interaction being sent will control the name of the root element in the message. The namespace of this message shall be urn:hl7-org:v3, and the ITSVersion attribute shall be "XML_1.0".

D.1.2 <id root=' ' extension=' '/>

Each message shall be uniquely identified. The root attribute is required, the extension attribute may be used if the root attribute is insufficient to uniquely identify the message instance.

D.1.3 <creationTime value=' '/>

The creationTime indicates when the message was created, and shall be sent with a timestamp that is precise to at least 1/100th of a second.

D.1.4 <interactionId extension='*HL7Interaction*' root='2.16.840.1.113883'/>

The identifer for the interaction shall be sent. The extension value shall be valued with the HL7 Interaction identifier specified within the standard. The root attribute shall be set to the value 2.16.840.1.113883 to identify this as an HL7 interaction.

D.1.5 <processingCode code='D|P|T'/>

The processingCode element identifiers whether this message is being sent for debugging, production or training respectively. It shall be present and have one of the values D, P or T, as shown above.

D.1.6 <processingModeCode code='A|T|I|R'/>

The processingModeCode distinguishes the type of processing being performed, using the values A, T, I or R for Archive, current processing, Initial load, or Restore from archive respectively. This element shall be present and have one of the values shown above.

D.1.7 <acceptAckCode code='AL|ER|NE'/>

The acceptAckCode indicates whether the reciever wants to recieve an acknowledgement Always (AL), only on errors (ER), or never (NE). Unless reliable message transport has been established through some other mechanism, any message that would result in the potential alteration of clinical data shall be sent with the acceptAckCode set to AL, and any message that performs queries or is otherwise non-destructive should be set the value to 'ER' or 'AL'.

D.1.8 <receiver typeCode="RCV"> <sender typeCode='SND'/>

The reciever and sender elements shall be used to identify the systems responsible for recieving and sending the messages.

D.1.9 <id/>

The id element is required and identifies the sender or reciever of the message.

D.1.10<name/>

The name element may be sent to provide a human readable name for the sender or reciever.

D.1.11<existenceTime><low value=' '/></existenceTime>

The existenceTime element may be set by the sender on the sender element, or by the reciever on the reciever element to indicate the time at which the sending or recieving process was last started. The sender should not set this value for the reviever, and visa-versa.

D.1.12<telecom value=' ' />

The telecommunications address for the sender and/or reciever may be sent. This address is the URL at which the sender or reciever is originating or recieving messages. The URL shall be the URL of the appropriate web service end-point.

D.1.13<manufacturerModelName/>

The manufacturer model name may be set by the sender or reciever to indicate a human readable description of the manufacturer model name of the sending or recieving device. Once again, the senders and recievers should only set these values for themselves.

D.1.14<softwareName/>

The software name may be set by the sender or reciever to indicate a human readable description of the software being used to send or recieve the message. Once again, the senders and recievers should only set these values for themselves.

D.2 Control Act Process

This section of the message identifies the action and provides information the business actors related to the transaction. This includes:

- The author or performer of the act
- The information recipients to who the information will be conveyed
- The domain content related to the act

```
 <controlActProcess moodCode="RQO|EVN">
   <id root=' ' extension=' '/>
   <code code='QUPC_TE043100UV'/>
   <effectiveTime value=' '/>
   <languageCode code=' '/>
   <authorOrPerformer typeCode=' '></authorOrPerformer>
   <informationRecipient typeCode=' '></informationRecipient>
   <!-- Performing a Query -->
   <queryByParameter>
     <statusCode code='new'/>
     <initialQuantity value=' '/>
     <initialQuantityCode code=' ' codeSystem='2.16.840.1.113883'>
     <parameterList>
       :
       Domain Content
     </parameterList>
   </queryByParameter>
   <!-- Returning Results -->
   <subject>
      :
      Domain Content
   </subject>
   <!-- Any response to a query (returning results, acknowledging a cancelation, or returning an error
-->
   <queryAck>
     <queryId root=' ' extension=' '/>
     <statusCode code=' '/>
     <queryResponseCode code=' '/>
     <resultTotalQuantity value=' '/>
     <resultCurrentQuantity value=' '/>
     <resultRemainingQuantity value=' '/>
   </queryAck>
   <!-- Requesting more results or cancelling a query -->
   <queryContinuation>
     <queryId root=' ' extension=' '/>
     <statusCode code='waitContinuedQueryResponse|aborted'/>
     <startResultNumber value=' '/>
     <continuationQuantity value=' '/>
   </queryContinuation>
   </queryContinuation>
 </controlActProcess>
```

D.2.1 <controlActProcess moodCode="RQO|EVN">

The controlActProcess element is where information about the business act being performed is recorded. The moodCode is set to "RQO" by the sender to indicate a request to perform an action. The reciever will often return a new controlActProcess element in moodCode "EVN" to indicate that the act has been performed.

D.2.2 <id root=' ' extension=' '/>

Each control act may have a unique identifier, recorded in the id element. The root attribute must be present. The extension attribute may be present to further distinguish the identifier.

D.2.3 <code code='QUPC_TE043100UV'/>

The trigger event which caused the act to be transmitted shall be recorded in the code element.

D.2.4 <effectiveTime value=' '/>

The date and time of the trigger event shall be recorded in the effectiveTime of the control act. This is timestamp is distinct from the time of message transmission in the transmission wrapper.

D.2.5 <languageCode code=' '/>

The primary language used within the message content is identified in the languageCode element. This element shall be present.

D.2.6 <authorOrPerformer typeCode=' '></authorOrPerformer>

This element may be present to identify the business actors responsible for the message transmission.

D.2.7 <informationRecipient typeCode=' '></informationRecipient>

This element may be present to identify the business actors expected to recieve the result of the message.

D.2.8 Performing a Query

D.2.8.1 <queryByParameter>

For HL7 Version 3 messages that perform a query, the query is specified in the <queryByParameter> element.

D.2.8.2 <statusCode code='new'/>

When passing the parameter list, the <statusCode> element shall be recorded as above to indicate that this is a new query.

D.2.8.3 <initialQuantity value=' '/>

The <initialQuantity> element may be present to specify the initial number of data elements to be returned. The responder must send no more than the specified number of data elements in the response, but may send fewer than requested.

D.2.8.4 <initialQuantityCode code=' ' codeSystem='2.16.840.1.113883'>

The <initialQuantityCode> element indicates hoow responses are counted. This element must be specified when the <initialQuantity> element is present. It indicates the HL7 structures to count when determining the total number of data elements to return. The code is the identifier of the HL7 artifact to count (i.e., the R-MIM or C-MET identifier). Each query should indicate what structures are counted within the detail of the transaction. The rationale for counting based on HL7 structures is that each query is expected to return one or more "rows", and each row is expected to coorespond to an HL7 structure that is being returned.

D.2.8.5 <parameterList>

The <parameterList> data element shall be provided. This data element contains a domain specific set of parameters. These parameters will be described in the transaction detail.

D.2.9 Returning Results

D.2.9.1 <subject>
Domain Content
</subject>

For typical HL7 version 3 messages, the domain content is accessible through the subject element, as is the domain content that is generated in response to a query.

D.2.9.2 <queryAck>

The queryAck element is transmitted in any message that is a response to a query, query continuation or query cancellation message.

D.2.9.3 <queryId root=' ' extension=' '/>

The queryId element shall be transmitted in a queryAck element. It shall contain an identifier that may be used in subsquent messages to obtain more results, or to cancel the query.

D.2.9.4 <statusCode code=' '/>

The statusCode element in the queryAck element indicates the status of the query. It may contain the value 'deliveredResponse' or 'aborted'. If the value is 'aborted', no additional messages should be sent to the data repository for the specified query.

D.2.9.5 <queryResponseCode code=' '/>

The queryResponseCode element indicates at a high level the results of performing the query. It may have the value 'OK' to indicate that the query was performed and has

results. It may have the value 'NF' to indicate that the query was performed, but no results were located. Finally, it may have the value 'QE' to indicate that an error was detected in the incoming query message.

D.2.9.6 <resultTotalQuantity value=' '/>

The resultTotalQuantity element should be present, and if so, enumerates the number of results found. It shall be present once the last result has been located by the data repository. This element gives the count of the total number of results located by the query. When present, the resultRemainingQuantity element shall also be present.

D.2.9.7 <resultCurrentQuantity value=' '/>

The resultCurrentQuantity element shall be present, and shall enumerate number of results returned in the current response.

D.2.9.8 <resultRemainingQuantity value=' '/>

This resultRemainingQuantity element may be present, and shall be present if resultTotalQuantity is present. It shall enumerate the number of results that follow the results currently returned.

D.2.10 Continuation or Cancellation of a Query

D.2.10.1 <queryContinuation>

The queryContinuation element shall be sent in messages that are used to obtain more query results or cancel a current query.

D.2.10.2 <queryId root=' ' extension=' '/>

The identifier of the query to continue or cancel shall be reported in the queryId element.

D.2.10.3 <statusCode code='waitContinuedQueryResponse|aborted'/>

The statusCode element shall be sent, and indicates whether this is a continuation or cancellation of the query. If the query is to be continued, the code attribute shall be set to waitContinuedQueryResponse. If the query is to be canceled, it shall be set to aborted.

D.2.10.4 <startResultNumber value=' '/>

The startResultNumber element may be sent to indicate the query result to start returning from. If this element is sent, it shall be honored by the data repository. If this element is omitted, results will be sent that follow the last set of results sent. Results are numbered from 1, so setting this value to 1 will start with the first result returned. Setting this value to a number less than 1 will result in undefined application behavior.

D.2.10.5 <continuationQuantity value=' '/>

The continuationQuantity element shall be sent on cancelation requests, and shall have a value of 0. For continuation requests, this element may be sent to indicate the number of

12875 results that should be returned. The data repository may send fewer results than requested, but shall send no more than this value.

Appendix E WSDLs for QED

The WSDL for QED transactions PCC-1, PCC-2, PCC-3, PCC-4 and PCC-5 are identical except for the actor name. Simply substitute one the following values for the string ACTOR in the following WSDL example.

Transaction	Actor Name
PCC-1	VitalSignsDataRepository
PCC-2	ProblemAndAllergyDataRepository
PCC-3	VitalSignsDataRepository
PCC-4	MedicationDataRepository
PCC-5	ImmunizationDataRepository


```
<?xml version="1.0" encoding="UTF-8"?>
<!--
  HL7-WSP200) WSDL documents SHOULD implement a specific Application Role
  This WSDL implements a ACTOR application role.

  HL7-WSP201) The attribute /wsdl:definitions/@name SHOULD be {Application Role Artifact Id}
  This is an IHE Actor, and conforms to the IHE Convention, using the Actor Name.

  Interactions
    Query Care Record Event Profile Query (QUPC_IN043100UV)
    Query Care Record Event Profile Query Response (QUPC_IN043200UV)
    General Query Activate Query Continue (QUPC_IN000005UV)
    General Query Query Cancel (QUPC_IN000003UV)

  HL7-WSP202) The targetNamespace of the WSDL MUST be “urn:hl7-org:v3”.
  It is.

  HL7-WS203) The WSDL MUST include XML Schema Definitions for each supported Interaction.
  It does, but it is not clear that this is best, due to the overhead this causes when creating
services and proxies from
  the WSDL.  Perhaps the contract should be defined using the XML Schema definitions, but a lighter
weight WSDL should
  also be provided for engineering use.

  HL7-WSP208) WSDL messages for Interactions SHOULD use wsdl:operation/wsdl:input/@wsa:Action =
"urn:hl7-org:v3:{Interaction_Artifact_Id}"
  It doesn't.  Instead the wsa:Action uses
  HL7-WSP209) WSDL messages for Accept Acknowledgement SHOULD use
wsdl:operation/wsdl:input/@wsa:Action = "urn:hl7-org:v3:AcceptAcknowledgement".

  HL7-WSP210) WSDL messages for Application Level Acknowledgement SHOULD use
wsdl:operation/wsdl:input/@wsa:Action = "urn:hl7-org:v3:ApplicationAcknowledgement".

-->
<definitions name="ACTOR" targetNamespace="urn:hl7-org:v3" xmlns="http://schemas.xmlsoap.org/wsdl/"
xmlns:hl7="urn:hl7-org:v3" xmlns:http="http://schemas.xmlsoap.org/wsdl/http/"
xmlns:mime="http://schemas.xmlsoap.org/wsdl/mime/" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <types>
    <xsd:schema elementFormDefault="qualified" targetNamespace="urn:hl7-org:v3" xmlns:hl7="urn:hl7-
org:v3">
      <!-- Query Care Record Event Profile Query -->
      <xsd:include schemaLocation="processable/QUPC_IN043100UV.xsd"/>
      <!-- Query Care Record Event Profile Query Response -->
      <xsd:include schemaLocation="processable/QUPC_IN043200UV.xsd"/>
      <!-- General Query Activate Query Continue -->
      <xsd:include schemaLocation="processable/QUPC_IN000005UV.xsd"/>
      <!-- General Query Query Cancel -->
      <xsd:include schemaLocation="processable/QUPC_IN000003UV.xsd"/>
    </xsd:schema>
  </types>
  <!-- HL7-WSP100) The top-level element of the HL7 message MUST be embedded as the only child of
         the soap:Body element. The name of the top-level element (the one directly under the
soap:Body element)
         MUST be {Interaction Artifact Id}.

         Rather than using {Interaction Artifact Id}_Message, we are using human readable names for
the message
         parts.  These human readable names come from the HL7 names for the message.  The interaction
artifact Ids are
         used as the element names.
  -->
  <message name="QUPC_IN043100UV_Message">
    <part element="hl7:QUPC_IN043100UV" name="Body"/>
  </message>
  <message name="QUPC_IN043200UV_Message">
    <part element="hl7:QUPC_IN043200UV" name="Body"/>
  </message>
  <message name="QUQI_IN000003UV01_Message">
    <part element="hl7:QUQI_IN000003UV01" name="Body"/>
  </message>


  <portType name="ACTOR_PortType">
```



```
    <!-- Send Message with Immediate Response (CP002): this communication maps to a Request/Response
MEP.
          The request and response messages can be correlated both at the Messaging Infrastructure
layer and at the application level.
    -->
    <!-- Rather than using {NAME}_{Interaction Artifact Id}, we are using human readable names for the
operations.  These
          human readable names are derived from the HL7 names for the message. -->
    <operation name="ACTOR_QUPC_IN043100UV">
      <input message="hl7:QUPC_IN043100UV_Message" wsa:Action="urn:hl7-
org:v3:GetCareRecordProfileQuery"/>
      <output message="hl7:QUPC_IN043200UV_Message" wsa:Action="urn:hl7-
org:v3:GetCareRecordProfileQueryResponse"/>
    </operation>
    <operation name="ACTOR_QUQI_IN000003UV01">
      <input message="hl7:QUQI_IN000003UV01_Message" wsa:Action="urn:hl7-
org:v3:GeneralQueryActivateQueryContinue"/>
      <output message="hl7:QUPC_IN043200UV_Message" wsa:Action="urn:hl7-
org:v3:GetCareRecordProfileQueryResponse"/>
    </operation>
  </portType>

  <binding name="ACTOR_Binding" type="hl7:ACTOR_PortType">
    <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
    <!-- Vitals -->
    <operation name="ACTOR_QUPC_IN043100UV">
      <soap:operation soapAction="urn:hl7-org:v3:GetCareRecordProfileQueryQuery"/>
      <input>
        <soap:body use="literal"/>
      </input>
      <output>
        <soap:body use="literal"/>
      </output>
    </operation>
    <operation name="ACTOR_QUQI_IN000003UV01">
      <soap:operation soapAction="urn:hl7-org:v3:GeneralQueryActivateQueryContinue"/>
      <input>
        <soap:body use="literal"/>
      </input>
      <output>
        <soap:body use="literal"/>
      </output>
    </operation>
  </binding>

  <service name="ACTOR_Service">
    <port binding="hl7:ACTOR_Binding" name="ACTOR_Port">
      <soap:address location="http://servicelocation/"/>
    </port>
  </service>
</definitions>
```

This file, along with the necessary HL7 Schemas, and some skelatal examples can all be found on the Patient Care Coordination FTP site: ftp://ftp.ihe.net/Patient_Care_Coordination/yr3_2007-2008/resources/Query.zip

