Integrating the Healthcare Enterprise

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IHE Patient Care Coordination (PCC) Technical Framework Supplement 2008-2009

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Antepartum Record (APR)

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Draft for Trial Implementation

August 22, 2008

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1 Foreword

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
25 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
30 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
35 choices when necessary. IHE maintain formal relationships with several standards bodies including HL7, DICOM and refers recommendations to them when clarifications or extensions to existing standards are necessary.

This initiative has numerous sponsors and supporting organizations in different medical specialty domains and geographical regions. In North America the primary sponsors are
40 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
45 (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
50 [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
55 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
60 medical information to support optimal patient care. It is expanded annually, after a period of public review, and maintained regularly through the identification and

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correction of errata. The current version for these Technical Frameworks may be found at www.ihe.net/Technical_Framework.

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. The 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. The subsequent volumes provide detailed technical descriptions of each IHE transaction.

This IHE Patient Care Coordination (PCC) Technical Framework Supplement is issued for Trial Implementation through May 2009.

Comments and change proposals arising from Trial Implementation may be submitted to http://forums.rsna.org under the forum:

"*Integrating the Healthcare Enterprise*"

Select the sub-forum:

"*IHE Patient Care Coordination 2008 Supplements for Trial Implementation*"

The IHE IT Infrastructure Technical Committee will address these comments resulting from implementation, Connectathon testing, and demonstrations. Final text is expected to be published in June 2009, dependent upon results of IHE validation process.

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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:
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1.1 Preface to Volume 1 of the PCC Technical Framework

1.1.1 Intended Audience

The intended audience of this document is:

- Healthcare professionals involved in informatics
- IT departments of healthcare institutions
- Technical staff of vendors participating in the IHE initiative
- Experts involved in standards development
- Those interested in integrating healthcare information systems and workflows

1.1.2 Related Information for the Reader

The reader of volume 1 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

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- Volume 1 of the Notification of Document Availability (NAV) Integration Profile documented in the ITI Infrastructure Technical Framework

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- 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

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- 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:
- Leveraging IHE to Build RHIO Interoperability
- Cross-Enterprise Document Sharing (XDS)

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- Notification of Document Availability (NAV)
- Patient Care Coordination
- Use Cases for Medical Summaries
- Patient Care Coordination - Overview of Profiles

1.1.3 How this Volume is Organized

190 Section 2 describes the general nature, structure, purpose and function of the Technical Framework. Section 3 and the subsequent sections of this volume provide detailed documentation on each integration profile, including the Patient Care Coordination problem it is intended to address and the IHE actors and transactions it comprises.

The appendices following the main body of the document provide a summary list of the 195 actors and transactions, detailed discussion of specific issues related to the integration profiles and a glossary of terms and acronyms used.

1.1.4 Conventions Used in this Document

This document has adopted the following conventions for representing the framework concepts and specifying how the standards upon which the IHE Technical Framework is 200 based should be applied.

1.1.4.1 Technical Framework Cross-references

When references are made to another section within a Technical Framework volume, a section number is used by itself. When references are made to other volumes or to a Technical Framework in another domain, the following format is used:

205 <domain designator> TF-<volume number>: <section number>

where:

    <domain designator>

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is a short designator for the IHE domain (PCC= Patient Care Coordination, ITI = IT Infrastructure, RAD = Radiology)

210   <volume number>

is the applicable volume within the given Domain Technical Framework (e.g., 1, 2, 3), and

    <section number>

is the applicable section number.

215   For example: PCC TF-1: 3.1 refers to Section 3.1 in volume 1 of the IHE Patient Care Coordination Technical Framework, ITI TF-2: 4.33 refers to Section 4.33 in volume 2 of the IHE IT Infrastructure Technical Framework.

1.1.4.2 IHE Actor and Transaction Diagrams and Tables

Each integration profile is a representation of a real-world capability that is supported by
220   a set of actors that interact through transactions. Actors are information systems or components of information systems that produce, manage, or act on categories of information required by operational activities in the enterprise. Transactions are interactions between actors that communicate the required information through standards-based messages.

225   The diagrams and tables of actors and transactions in subsequent sections indicate which transactions each actor in a given profile must support.

The transactions shown on the diagrams are identified both by their name and the transaction number as defined in PCC TF-2 (Volume 2 of the PCC Technical framework). The transaction numbers are shown on the diagrams as bracketed numbers
230   prefixed with the specific Technical Framework domain.

In some cases, a profile is dependent on a prerequisite profile in order to function properly and be useful. For example, Cross-Enterprise Sharing of Medical Summaries depends on Audit Trail and Node Authentication (ATNA). These dependencies can be found by locating the desired profile in the dependencies section of this document to
235   determine which profile(s) are listed as prerequisites. An actor must implement all required transactions in the prerequisite profiles in addition to those in the desired profile.

1.1.4.3 Process Flow Diagrams

The descriptions of integration profiles that follow include process flow diagrams that illustrate how the profile functions as a sequence of transactions between relevant actors.

240   These diagrams are intended to provide an overview so the transactions can be seen in the context of an institution's or cross-institutions' workflow. Certain transactions and activities not defined in detail by IHE are shown in these diagrams in italics to provide additional context on where the relevant IHE transactions fit into the broader scheme of healthcare information systems. These diagrams are not intended to present the only
245   possible scenario. Often other actor groupings are possible, and transactions from other profiles may be interspersed.

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In some cases the sequence of transactions may be flexible. Where this is the case there will generally be a note pointing out the possibility of variations. Transactions are shown as arrows oriented according to the flow of the primary information handled by the 250 transaction and not necessarily the initiator.

1.1.5 Copyright Permissions

Health Level Seven, Inc., has granted permission to the IHE to reproduce tables from the HL7 standard. The HL7 tables in this document are copyrighted by Health Level Seven, Inc. All rights reserved. Material drawn from these documents is credited where used.

255   IHE has been very fortunate in having the American College of Obstetricians and Gynecologists (ACOG) help us in the definition of the data found in the Antepartum Summary Profile (APS).

The Antepartum Record Profile (APR) describes the content structures and specifications the American College of Obstetricians and Gynecologists (ACOG) views are necessary 260   in an antepartum record. ACOG encourages the use of the content structures contained in the Antepartum Record Profile of the Patient Care Coordination Technical Framework. ACOG does not endorse any EMR products. Companies or individuals that use these content structures in EMR product or service are prohibited from using ACOG's name and/or its logo on any promotional material, packaging, advertisement, website or in any 265   other context related to the EMR product or service.

Braden Scale For Predicting Pressure Sore Risk, Copyright © Barbara Braden and Nancy Bergstrom, 1988. Reprinted with permission. Barabara Braden and Nancy Bergstrom have granted permission to use the Braden Scale in the IHE Functional Status Assessment Integration Profile to be provided to vendors for demonstration purposes 270   only. Should a vendor chose to include the Braden Scale in their product, they must seek permission to do so from the copyright holders. More information is available from http://www.bradenscale.com/

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2 Introduction

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

At its current level of development, IHE has also created Content Integration Profiles to
further specify the payloads of these transactions, again based on standards. This has
become necessary as the healthcare industry moves towards the use of transaction
standards that have been used in more traditional computing environments.

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.

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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
315 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.

320 ## 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
325 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
330 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
335 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.

340 ## 2.3 Framework Development and Maintenance

The IHE Patient Care Coordination Technical Framework is continuously maintained and expanded on an annual basis by the IHE Patient Care Coordination Technical Committee. The development and maintenance process of the Framework follows a number of principles to ensure stability of the specification so that both vendors and users may use it
345 reliably in specifying, developing and acquiring systems with IHE integration capabilities.

The first of these principles is that any extensions or clarifications to the Technical Framework must maintain backward compatibility with previous versions of the framework (except in rare cases for corrections) in order to maintain interoperability with
350 systems that have implemented IHE Actors and Integration Profiles defined there. The IHE Patient Care Coordination Technical Framework is developed and re-published annually following a three-step process:

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1. The Patient Care Coordination Technical Committee develops supplements to the current stable version of the Technical Framework to support new functionality identified by the IHE Strategic and PCC Planning Committees and issues them for public comment.

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2. The Committee addresses all comments received during the public comment period and publishes an updated version of the Technical Framework for "Trial Implementation." This version contains both the stable body of the Technical Framework from the preceding cycle and the newly developed supplements. It is this version of the Technical Framework that is used by vendors in developing trial implementation software for the IHE Connectathons.

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3. The Committee regularly considers change proposals to the Trial Implementation version of the Technical Framework, including those from implementers who participate in the Connectathon. After resolution of all change proposals received within 60 days of the Connectathon, the Technical Framework version is published as "Final Text".

As part of the Technical Framework maintenance the Committee will consider change proposals received after the publication to the "Final Text".

370 ## 2.4 About the Patient Care Coordination Integration Profiles

IHE Integration Profiles offer a common language that healthcare professionals and vendors can use to discuss integration needs of healthcare enterprises and the integration capabilities of information systems in precise terms. Integration Profiles specify implementations of standards that are designed to meet identified clinical needs. They
375 enable users and vendors to state which IHE capabilities they require or provide, by reference to the detailed specifications of the IHE Patient Care Coordination Technical Framework.

Integration profiles are defined in terms of IHE Actors, transactions and their content. Actors (listed in PCC TF-1: Appendix A) are information systems or components of
380 information systems that produce, manage, or act on information associated with clinical and operational activities. Transactions (listed in PCC TF-1: Appendix B) are interactions between actors that communicate the required information through standards-based messages. Content is what is exchanged in these transactions, and are defined by Content Profiles.

385 Vendor products support an Integration Profile by implementing the appropriate actor(s) and transactions. A given product may implement more than one actor and more than one integration profile.

Content Profiles define how the content used in a transaction is structured. Each transaction is viewed as having two components, a payload, which is the bulk of the
390 information being carried, and metadata that describes that payload. The binding of the Content to an IHE transaction specifies how this payload influences the metadata of the transaction. Content modules within the Content Profile then define the payloads. Content modules are transaction neutral, in that what they describe is independent of the

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395   transaction in which they are used, whereas content bindings explain how the payload
       influences the transaction metadata.

       The figure below shows the relations between the Content Integration Profiles of the
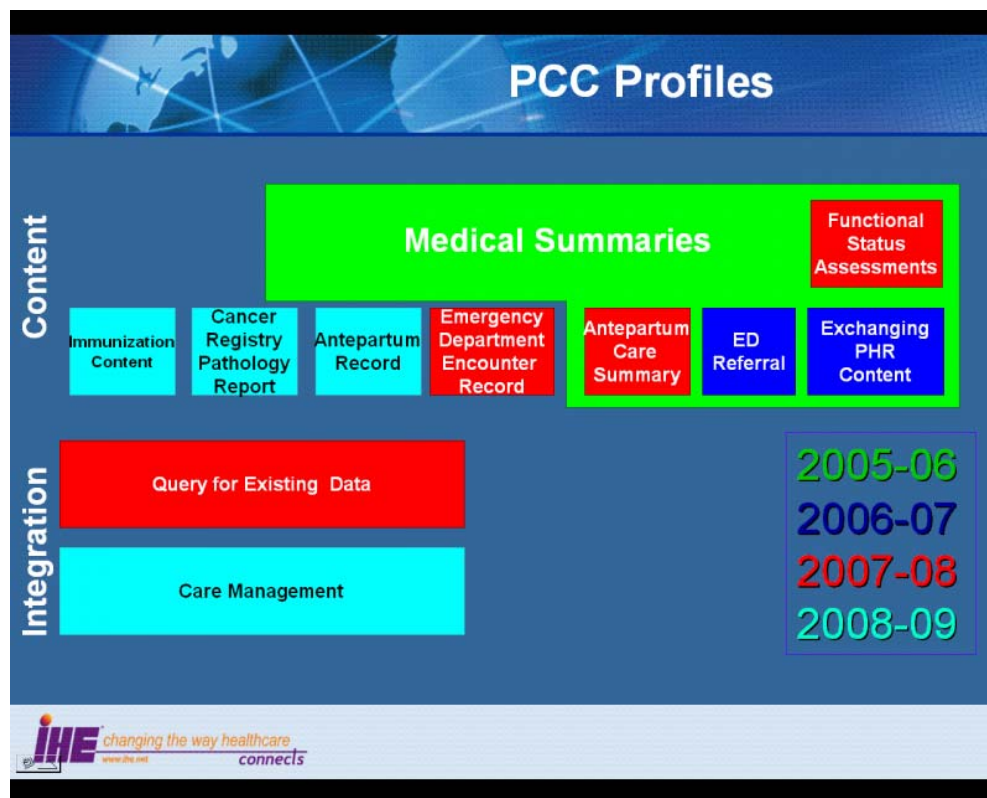   Patient Care Coordination Domain.

Figure 2.4-1 IHE Patient Care Coordination Content Integration Profiles

400   ## 2.5 Dependencies of the PCC Integration Profiles

       Dependencies among IHE Integration Profiles exist when implementation of one
       integration profile is a prerequisite for achieving the functionality defined in another
       integration profile. The table below defines these dependencies. Some dependencies
       require that an actor supporting one profile be grouped with one or more actors
405   supporting other integration profiles. For example, Cross-Enterprise Sharing of Medical
       Summaries (XDS-MS) requires that its actors be grouped with a Secured Node Actor of
       the Audit Trail and Node Authentication (ATNA) Integration Profile. The dependency
       exists because XDS-MS and XDS actors must support a secured communication channel
       with proper auditing of the exchange of patient identified information in order to function
410   properly in an environment where protection of patient privacy is critical.

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Integration Profile	Depends on	Dependency Type	Purpose
All PCC Content Profiles	*Audit Trail and Node Authentication (ATNA)*	Each Content Creator and Content Consumer actor shall be grouped with the ATNA Secured Node Actor	Required to manage audit trail of exported PHI, node authentication, and transport encryption.
	Consistent Time (CT)	Each Content Creator and Content Consumer actor shall be grouped with the Time Client Actor	Required to manage and resolve conflicts in multiple updates.
Functional Status Assessments (FSA)	*Cross Enterprise Document Exchange of Medical Summaries (XDS-MS)* OR *Exchange of Personal Health Record Content (XPHR)* OR *Emergency Department Referral (EDR)*	Content Consumers implementing the Functional Status Assessments profile shall be grouped with either the XDS-MS, XPHR or EDR Content Consumer. Content Creators implementing the Functional Status Assessments profile shall be grouped with either the XDS-MS, XPHR or EDR Content Creator.	Ensures that the Functional Status Assessment is communicated as part of an exchange of medical summary information.
Functional Status Assessments (QED)	*Audit Trail and Node Authentication (ATNA)*	Each actor in this profile shall be grouped with the ATNA Secure Node or Secure Application actor.	Required to manage audit trail of exported PHI, node authentication, and transport encryption.
	Consistent Time (CT)	Each actor in this profile shall be grouped with the Time Client Actor	Required to manage and resolve conflicts in multiple updates.

Table 1.1.5-1 PCC Profile Dependencies

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To support a dependent profile, an actor must implement all required transactions in the prerequisite profiles in addition to those in the dependent profile. In some cases, the prerequisite is that the actor selects any one of a given set of profiles.

2.6 PCC Integration Profiles Overview

In this document, each IHE Integration Profile is defined by:

- The IHE actors involved
- The specific set of IHE transactions exchanged by each IHE actor.
- The content of the IHE transactions

These requirements are presented in the form of a table of transactions required for each actor supporting the Integration Profile. Actors supporting multiple Integration Profiles are required to support all the required transactions of each Integration Profile supported. When an Integration Profile depends upon another Integration Profile, the transactions required for the dependent Integration Profile have not been included in the table.

The content of the transactions are presented as Content Integration Profiles. These are specification of the content to be exchange, along with explanations (called bindings) of how the content affects the transactions in which it is exchanged. It is expected that Content Integration Profiles will be used environments where the physician offices and hospitals have a coordinated infrastructure that serves the information sharing needs of this community of care. Several mechanisms are supported by IHE profiles:

- A registry/repository-based infrastructure is defined by the IHE Cross-Enterprise Document Sharing (XDS) and other IHE Integration Profiles such as patient identification (PIX & PDQ), and notification of availability of documents (NAV).
- A media-based infrastructure is defined by the IHE Cross-Enterprise Document Media Interchange (XDM) profile.
- A reliable messaging-based infrastructure is defined by the IHE Cross-Enterprise Document Reliable Interchange (XDR) profile.
- All of these infrastructures support Security and privacy through the use of the Consistent Time (CT) and Audit Trail and Node Authentication (ATNA) profiles.

For more details on these profiles, see the IHE IT Infrastructure Technical Framework, found here: http://www.ihe.net/Technical_Framework/.

Such an infrastructure is assumed by the use cases that focus on the context for defining the specific clinical information content for this profile. These content integration profiles use similar transactions and differ only in the content exchanged. A process flow for these use cases using Cross Enterprise Document Sharing (XDS) and Notification of Document Availability (NAV) is shown in the figure below. Other process flows are possible using XDM and/or XDR.

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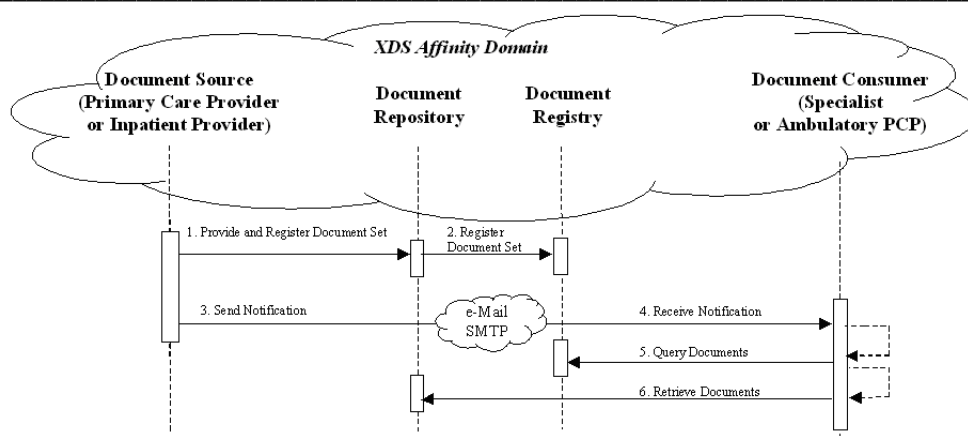
Figure 2.6-1 Use Case Process Flow Diagram

These steps are:

- Extract/capture a collection of records into a set of documents packaged as an XDS Submission Set. This submission contains at least one clinical document, and may contain a number of other related clinical documents. For example, Medical Summaries are clinical documents (already known in the paper world), which often serve the dual purpose of documenting an encounter and providing the rationale for sending the information to another provider. This step utilizes the transactions provided by the ITI XDS profile to place the records in an XDS Repository (local or shared).

- The Repository ensures that the documents of the submission set are registered with the XDS Registry of the Affinity Domain (set of cooperating care delivery institutions).

- Notify the other provider that documents are now available for review. This step utilizes the transactions provided by the ITI NAV profile to perform the e-mail notification.

- The e-mail notification that contains no patient identified information is received by the specialist EMR system.

- The receiving provider can then utilize existing query transactions from the XDS profile to find the URL of the Documents.

- Finally, the receiving provider may choose to display the document, or import relevant information from these records into their own EMR system.

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2.6.1 Unplanned Access to past Content

475 In many cases, a provider may need to assess information from the patient care history, and patients may have content in the XDS repository from prior visits to other providers. For example, Medical Summaries, as well as other documents such as laboratory and radiology reports are critical for emergency physicians and nurses to provide the best care to patient in acute conditions. The figure below shows the transactions required for this

480 use case, again, using XDS. Other process flows are possible using XDM and/or XDR.
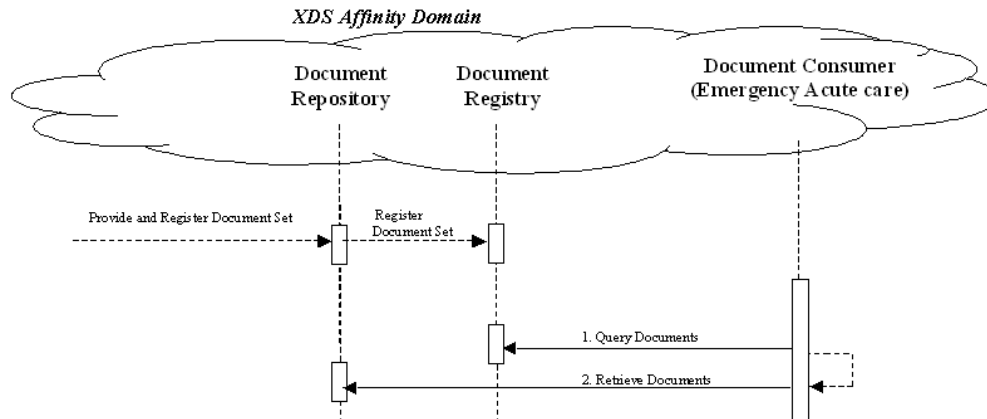
Figure 2.6-2 Unplanned Access Process Flow Diagram

Note that IHE Integration Profiles are not statements of conformance to standards, and

485 IHE is not a certifying body. Users should continue to request that vendors provide statements of their conformance to standards issued by relevant standards bodies, such as HL7 and DICOM. Standards conformance is a prerequisite for vendors adopting IHE Integration Profiles.

Also note that there are critical requirements for any successful integration project that

490 IHE cannot address. Successfully integrating systems still requires a project plan that minimizes disruptions and describes fail-safe strategies, specific and mutually understood performance expectations, well-defined user interface requirements, clearly identified systems limitations, detailed cost objectives, plans for maintenance and support, etc.

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2.7 History of Annual Changes

495   In the 2005-2006 cycle of the IHE Patient Care Coordination initiative, the first release of
the IHE PCC Technical Framework introduced the following integration profile:

- **Cross-Enterprise Sharing of Medical Summaries (XDS-MS) –** a
mechanism to automate the sharing process between care providers of
Medical Summaries, a class of clinical documents that contain the most
500   relevant portions of information about the patient intended for a specific
provider or a broad range of potential providers in different settings. Medical
Summaries are commonly created and consumed at points in time of transfers
of care such as referrals or discharge.

In the 2006-2007 cycle of the IHE Patient Care Coordination initiative, the following
505   integration profiles were added to the technical framework.

- **Exchange of Personal Health Record Content (XPHR) –** provides a
standards-based specification for managing the interchange of documents
between a Personal Health Record used by a patient and systems used by
other healthcare providers to enable better interoperability between these
510   systems.

- **Basic Patient Privacy Consents (BPPC) –** enables XDS Affinity Domains to
be more flexible in the privacy policies that they support, by providing
mechanisms to record patient privacy consents, enforce these consents, and
create Affinity Domain defined consent vocabularies that identify information
515   sharing policies.
*Please Note: This profile was transferred to the ITI Domain in the Fall of
2007, and can be found here*
http://www.ihe.net/Technical_Framework/index.cfm#IT

- **Pre-procedure History and Physical Content Profile (PPHP) –** supports
520   the exchange of information allowing for the assessment and amelioration of
risks related to a procedure. *Please Note: This profile has been withdrawn.*

- **Emergency Department Referral Profile (EDR) –** provides a means to
communicate medical summary data from an EHR System to an EDIS
System.

525   In the 2007-2008 cycle of the IHE Patient Care Coordination initiative, the following
integration profiles were added to the technical framework.

- **Antepartum Care Summary (APS)** - describes the content and format of
summary documents used during Antepartum care.

- **Emergency Department Encounter Summary (EDES)** - describes the
530   content and format of records created during an emergency department visit.

- **Functional Status Assessment Profile (FSA)** - supports the handoff of
assessment information between practitioners during transfers of care by
defining the Functional Status Assessment option on the XDS-MS and XPHR
profiles.

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535   •   **Query for Existing Data (QED)** - allows information systems to query data repositories for clinical information on vital signs, problems, medications, immunizations, and diagnostic results.

•   **Public Health Laboratory Report (PHLAB)** - extends the XD*-LAB profile to support reporting from public health laboratories for disease surveillance

540   activities. *Please Note: This profile has been subsequently moved to the XD-LAB specification, and van be found here* *http://www.ihe.net/Technical_Framework/index.cfm#LAB*

In addition, all content within the technical framework was revised in the 2007-2008 cycle to encourage compatibility with the ASTM/HL7 Continuity of Care Document

545 Implementation Guide.

In the 2008-2009 cycle of the IHE Patient Care Coordination initiative, the following integration profiles were added to the technical framework.

•   **Antepartum Record (APR) -** describes the content and format of summary documents used during Antepartum care.

550   •   **Care Management (CM) -** provides a mechanism for EHR and other HIT systems to communicate information to Care Management systems in support of specialized care programs through the use of evidence based guidelines.

•   **Immunization Content (IC) -** defines standard immunization data content for Immunization Information Systems (IISs), other public health systems,

555   electronic medical records (EMR) systems, Health Information Exchanges, and others wishing to exchange immunization data electronically in a standard format.

•   **Cancer Registry Pathology Report (CPR) -** describes the content used in PCC-11 to send a completed pathology report to a Cancer Registry using an

560   HL7 Version 2.3.1 ORU message.

2.8 Product Implementations

Developers have a number of options in implementing IHE actors and transactions in product implementations. The decisions cover three classes of optionality:

•   For a system, select which actors it will incorporate (multiple actors per

565   system are acceptable).

•   For each actor, select the integration profiles in which it will participate.

•   For each actor and profile, select which options will be implemented.

All required transactions must be implemented for the profile to be supported (for XDS-MS, refer to the transaction descriptions for XDS in ITI TF-2).

570 Implementers should provide a statement describing which IHE actors, IHE integration profiles and options are incorporated in a given product. The recommended form for such a statement is defined in PCC TF-1: Appendix C.

In general, a product implementation may incorporate any single actor or combination of actors. When two or more actors are grouped together, internal communication between

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575   actors is assumed to be sufficient to allow the necessary information flow to support their functionality; for example, the Document Source Actor of XDS-MS may use the Patient Identifier Cross-reference Consumer Actor to obtain the necessary patient identifier mapping information from its local patient id to that used in the document sharing domain. The exact mechanisms of such internal communication are outside the scope of

580   the IHE Technical Framework.

When multiple actors are grouped in a single product implementation, all transactions originating or terminating with each of the supported actors shall be supported (i.e., the IHE transactions shall be offered on an external product interface).

The following examples describe which actors typical systems might be expected to

585   support. This is not intended to be a requirement, but rather to provide illustrative examples.

An acute care EMR serving a hospital might include a Document Source Actor, Document Consumer Actor, a Document Repository Actor, a Patient Identification Consumer Actor, as well as a Secured Node Actor. An Ambulatory EMR serving a

590   physician practice might include a Document Source Actor, Document Consumer Actor, a Patient Demographics Client Actor, as well as a Secured Node Actor.

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3   Antepartum Record (APR)

3.1.1   Open Issues

1.   How does the XDS Folder structure need to be handled?

2.   Several LOINC and SNOMED codes are in the process of being created. These
600   codes are denoted by a preceeding "xx-" or "XX-" with an abbreviated
     description of the code following.

3.1.2   Closed Issues

1.   For Antepartum Laboratory there is a LOINC code for Laboratory Studies
     (26436-6) - is this too general? Should a new code be requested specific to
     Antepartum labs? The concern is that this could cause mapping issues in an
605   EMR that has other lab results that are considered to be specific to antepartum
     that would live under that same loinc section code. **the IHE formatCode
     supplied in the XDS Metadata will identify this as an Antepartum
     Laboratory document**

3.2   Profile Abstract

610   The Antepartum Record Profile (APR) extends the description of the content structures
     for the Antepartum Summary (APS), and is based on the data elements from prenatal
     records currently in common use. The Antepartum Record includes the following
     additional documents:

1.   Antepartum History & Physical - The initial assessment and physical

615   2.   Antepartum Laboratory - Laboratory Evaluations

3.   Antepartum Education - Education Record

Additional commonly used forms not included in this profile are:

1.   A patient generated obstetric medical history

2.   A postpartum form

620   A sample form showing the data elements may be found at: http://www.acog.org/acb-custom/aa128.pdf. This profile defines the implementation of HL7 CDA documents to
     represent these data elements along with the XDS, XDR and XDM bindings. This profile
     also defines mechanisms to group them into a single logical folder.

625

Add the following bullet to the list of profiles

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IHE PCC Technical Framework Supplement – Antepartum Record (APR)

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- Antepartum Record - A folder of content profiles that contains the record of Antepartum care including initial patient history and physical, recurring
630   evaluations of mother and fetus(es), laboratory studies, patient education, and on-going plans of care.

3.3 Dependencies

Add the following row(s) to the list of dependencies

Integration Profile	Dependency	Dependency Type	Purpose
Antepartum Record	Sharing of Laboratory Reports (XD-LAB)	child	share laboratory results

3.4 Overview

635 The Antepartum Record Profile (APR) extends the description of the content structures for the Antepartum Summary (APS), and is based on the data elements from prenatal records currently in common use.

Obstetric patients in labor and admitted to the hospital or birthing facility must have a complete summary of their antepartum ambulatory care available at the time of admission
640 to evaluate and / or ameliorate risk. This same data is required at any visit to the birthing facility or hospital for any other problems or special care needs of the patient. The antepartum record must be available in its entirety for appropriate continuity of care and legal concerns.

The aggregated record provides important information for all health care professionals
645 who are part of the patient's obstetric care team. Patients may incorporate the data from this aggregated record into their personal health record. Administration staff may use data for billing and payment purposes.

A typical pregnancy duration is approximately 40 weeks. Patient care during that time includes an initial history and physical examination, followed by repetitive office visits
650 with multiple laboratory studies, imaging/ ultrasound studies, and serial physical examinations. As the patient is seen over a finite period for care, aggregation of data relevant to the evaluation of the obstetric patient upon presentation to the birthing facility or hospital is commonly collected on paper forms. This antepartum record contains the most critical information needed to provide care for the patient during pregnancy,
655 delivery and the post-partum period. This data must all be presented and evaluated upon entry to the birthing facility or hospital to ensure optimal continuity of care for the patient and the fetus.

Although the patient and her care provider may plan for a vaginal method of delivery, there is a substantive chance the delivery route may be surgical, requiring anesthesia and
660 post-surgical care.

Current practice is to copy the patient's paper chart at various times during the pregnancy (as at 28 weeks and at 36 weeks of completed gestation), and transport the copies of the chart to the hospital the patient intends to use for delivery. Should the patient arrive at the birthing facility or hospital prior to the chart copy arriving, or if the chart (or information

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665 within the chart) is missing on presentation of the patient (a frequent occurrence), the
care team must repeat laboratory or imaging studies. This results in unwarranted and
duplicative tests, is wasteful of time and resources, and leads to dissatisfied patients.
Further, missing or incomplete information about the patient's clinical status may create a
situation where critical information is unavailable which may ultimately result in an
670 injury, inadequate aftercare, or other undesirable outcomes.

A large portion of patients arrive at the birthing facility or hospital without complete
documentation. In one recent U.S. study, approximately 70 % of patients (with paper
charts) arrived at the birthing facility without their current medical record being
available. While only one hospital was involved in this study, one can see the extent of
675 the issue, with pregnant patients possibly going to a different hospital than planned
(preterm labor, rapid labor and unable to make it to the planned delivery hospital, or
visiting a distant city), moving mid-care, or with a covering physician (rather than the
primary obstetrician) on call.

In a Swedish study done in the 1990's, critical data on paper records were incomplete
680 from 45 to 87.5% of the time. Thus, availability of current medical records remains a
significant problem for most hospital birthing facilities; availability of key information
electronically will significantly enhance patient safety.

3.5 Use Cases

3.5.1 Use Case 1: Basic Antepartum Record Use Case

685 This use case reflects the course of care during an uncomplicated pregnancy.

Pre-condition
The patient's obstetrician sees the patient for her initial and subsequent prenatal visits.
During the initial and/or subsequent prenatal visits information is collected and may be
690 updated within the office Electronic Health Record (EHR), these include:

- Patient demographics
- Menstrual history
- Obstetric history
- Medical history including surgical history, psych-social history
695 - Genetic history and screening/Teratology counseling
- Infection history
- Family history
- Initial and subsequent physical examination
- Medications
700 - Problems and risk factors for preterm birth
- Allergies
- Prenatal visit information
- Prenatal Laboratory results

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- Documentation of patient education and counseling
705
- Plans for care

The information collected during the patient's prenatal visits make up the components which are included in the patient's Antepartum Record.

Event(s)

Scenario 1 - At a specified time an initial and/or subsequent patient Antepartum Record
710 is transmitted by the patient's prenatal care provider EHR to the intended facility for delivery.

The intended facility of delivery health information system receives the transmitted initial and/or subsequent patient Antepartum Record.

Scenario 2 - At a specified time the initial and/or subsequent patient Antepartum Record
715 registry information is transmitted by the patient's obstetrician EHR to a registry.

The facility of delivery health information system queries the registry repository for the applicable patient's Antepartum Record(s). A request is made for the patient's Antepartum Record. The applicable system which contains the patient's Antepartum Record then makes available the patients Antepartum Record information to the
720 requesting facility of delivery.

Post-condition
The received patient Antepartum Record can be viewed and/or imported into the facility for delivery health information system to facilitate patient care by healthcare professional at the time of delivery for the mother and newborn.

725 **3.5.2 Use Case 2: Antepartum Consultative Care**

This use case reflects an example of perinatologist consultative prenatal care.

Pre-condition
The patient's prenatal care provider sees the patient for her pregnancy in the ambulatory (office) setting. During the pregnancy, the patient is noted to have a medical problem
730 requiring consultation with a maternal-fetal medicine specialist (perinatologist). The office obtains pre-authorization from the insurance payer for the consult and for the intended or anticipated route of delivery. Preauthorization information is transmitted to both the consultant and to the hospital.

Events
735 The patient is seen in the prenatal care provider's office where a complete health history (e.g. medical and surgical history, psycho-social history) is obtained and recorded in the office EHR and sent to the consultive care provider office EHR. Data from the perinatologist's consultation report is incorporated as appropriate. Laboratory and imaging reports ordered by the perinatologist consultant as well as the perinatologist's
740 consultation report are displayed electronically to the prenatal care provider. The prenatal care provider reviews the consultation report from the perinatologist's office and imaging studies ordered by the perinatologist along with current recorded data. Physical exam reveals some abnormalities. The prenatal care provider orders additional laboratory studies, and sends the patient to the hospital or birthing facility.

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745　When the laboratory results return, the prenatal care provider completes the admission history and physical, allergies, medications, includes the data prepared or ordered by the perinatologist, and makes it available to the hospital or birthing facility. This data includes an assessment of the patient's health status, and the requisite data summarized from the antepartum care given. The care team assures the complete collection of

750　documents needed is available and that there is a suitable environment with appropriate support for post-delivery after-care.

Post-condition

The pre-delivery history and physical and Antepartum Summary with appropriate relationships to the Perinatologist consultation, and all the Antepartum laboratory and

755　imaging studies are available to the obstetrician and the hospital or birthing center personnel for incorporation into their respective EHRs. The history and physical is also available to the patient for viewing and incorporation into the patient's PHR, and into the newborn baby's PHR.

3.5.3 Use Case 3: Antepartum Collaborative Care

760　This use case reflects two-way transmission of data in an example of collaborative care.

Pre-condition

A pregnant diabetic patient is seen by her prenatal care provider in the office for prenatal care. An ultrasound is performed to determine gestational age. The patient is sent to a consultant (e.g. perinatologist) as a high-risk patient. Her prenatal care provider transmits

765　preauthorization insurance information, labs and anticipated route of delivery to the consultant and/or hospital birthing facility.

Events

The patient returns to her consultant biweekly for blood testing and ultrasounds (when necessary) in addition to regular ob visits. The consultant reports back to the obstetrician

770　after each visit. Complete history and physical, imaging and additional labs are performed during patient's regular visit with her prenatal care provider.

The patient arrives at birthing facility. Prenatal care provider completes the admission history and physical, allergies, medications, and includes the data prepared or ordered by the consultant, and makes it available to the hospital birthing facility. This data includes

775　an assessment of the patient's health status, and the requisite data summarized from the antepartum care given. The care team documents that the complete collection of documents required is available.

Post-condition

780　The patient's prenatal care provider delivers by cesarean section after anesthesia. The post-partum discharge planning is notified and assures that there is a suitable environment with appropriate support for post-delivery after-care. Delivery information, i.e. birth weight, APGAR scores, type of delivery, etc is available for pediatrician. The patient's postpartum record is sent to the consultant for incorporation into the patient's

785　record. The patient can incorporate the history and physical into her own personal health record and the newborn's records into the newborn's personal health record.

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3.6 Actors/Transaction

There are two actors in this profile, the Content Creator and the Content Consumer. Content is created by a Content Creator and is to be consumed by a Content Consumer. The sharing or transmission of content from one actor to the other is addressed by the appropriate use of IHE profiles described below, and is out of scope of this profile. A Document Source or a Portable Media Creator may embody the Content Creator Actor. A Document Consumer, a Document Recipient or a Portable Media Importer may embody the Content Consumer Actor. The sharing or transmission of content or updates from one actor to the other is addressed by the use of appropriate IHE profiles described by section 3.7 Content Bindings with XDS, XDM and XDR found in the Patient Care Coordination Technical Framework

Figure 3.6-1 Antepartum Record Actor Diagram

3.7 Options

Actor	Option	Section
Content Consumer	View Option (See Note 1) Document Import Option (See Note 1) Section Import Option (See Note 1) Discrete Data Import Option (See Note 1)	PCC TF-1: 2.13.1 PCC TF-1: 2.13.2 PCC TF-1: 2.13.3 PCC TF-1: 2.13.4
Content Creator	Referral Option (See Note 1) Discharge Summary Option (See Note 1)	PCC TF-1: 2.13.5 PCC TF-1: 2.13.6

Note 1: The Actor shall support at least one of these options.

3.8 Grouping

3.8.1 Content Bindings with XDS, XDM and XDR

It is expected that the transfers of care will occur in an environment where the physician offices and hospitals have a coordinated infrastructure that serves the information sharing needs of this community of care. Several mechanisms are supported by IHE profiles:

- A registry/repository-based infrastructure is defined by the IHE Cross Enterprise Document Sharing (XDS) and other IHE Integration Profiles such as patient identification (PIX & PDQ) and notification of availability of documents (NAV).

- A media-based infrastructure is defined by the IHE Cross Enterprise Document Media Interchange (XDM) profile.

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- A reliable messaging-based infrastructure is defined by the IHE Cross Enterprise Document Reliable Interchange (XDR) profile.

815
- All of these infrastructures support Security and privacy through the use of the Consistent Time (CT) and Audit Trail and Node Authentication (ATNA) profiles.

For more details on these profiles, see the IHE IT Infrastructure Technical Framework. Content profiles may impose additional requirements on the transactions used when
820   grouped with actors from other IHE Profiles.

3.8.2 Cross Enterprise Document Sharing, Media Interchange and Reliable Messages

Actors from the ITI XDS, XDM and XDR profiles embody the Content Creator and Content Consumer sharing function of this profile. A Content Creator or Content
825   Consumer must be grouped with appropriate actors from the XDS, XDM or XDR profiles, and the metadata sent in the document sharing or interchange messages has specific relationships to the content of the clinical document described in the content profile.

3.8.3 Notification of Document Availability (NAV)

830   A Document Source should provide the capability to issue a Send Notification Transaction per the ITI Notification of Document Availability (NAV) Integration Profile in order to notify one or more Document Consumer(s) of the availability of one or more documents for retrieval. One of the Acknowledgement Request options may be used to request from a Document Consumer that an acknowledgement should be returned when it
835   has received and processed the notification. A Document Consumer should provide the capability to receive a Receive Notification Transaction per the NAV Integration Profile in order to be notified by Document Sources of the availability of one or more documents for retrieval. The Send Acknowledgement option may be used to issue a Send Acknowledgement to a Document Source that the notification was received and
840   processed.

3.8.4 Document Digital Signature (DSG)

When a Content Creator Actor needs to digitally sign a document in a submission set, it may support the Digital Signature (DSG) Content Profile as a Document Source. When a Content Consumer Actor needs to verify a Digital Signature, it may retrieve the digital
845   signature document and may perform the verification against the signed document content.

3.9 Content Modules

Content modules describe the content of a payload found in an IHE transaction. Content profiles are transaction neutral. They do not have dependencies upon the transaction that
850   they appear in.

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3.9.1   Antepartum History and Physical

3.9.2   Antepartum Summary

3.9.3   Antepartum Laboratory

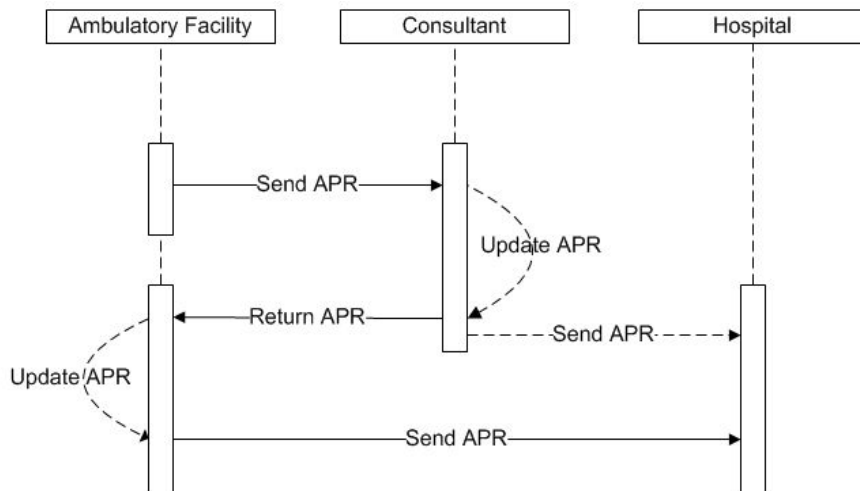### 3.9.4   Antepartum Education

855 ## 3.10 Process Flow

Figure 3.10-1 Antepartum Record Process Flow

This process flow diagram shows the movement of the antepartum record over the course
860 of care for a pregnancy involving an ambulatory facility (obstetric provider), consultant
and hospital (birthing facility). This diagram specifically excludes other infrastructure
interactions for simplicity and readability. These infrastructure interactions may be found
elsewhere in the framework.

Data from the patient's prenatal care aggregates into her electronic antepartum record by
865 the obstetric provider. The antepartum record is then sent to a consultant who updates the
antepartum record, and returns it to the obstetric provider. The electronic antepartum
record is then sent to the birthing facility at the appropriate time(s). The consultant may
also send the antepartum record directly to the hospital.

Actor Descriptions

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

Content Creator

_____

_____

The Content Creator Actor is responsible for the creation of content and transmission to a Content Consumer.

875   Content Consumer

A Content Consumer Actor is responsible for viewing, import, or other processing of content created by a Content Creator Actor.

Transaction Descriptions

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

How to Prepare an IHE Integration Statement

IHE Integration Statements are documents prepared and published by vendors to describe the conformance of their products with the IHE Technical Framework. They identify the specific IHE capabilities a given product supports in terms of IHE actors and integration
885   profiles described in the technical frameworks of each domain.

Users familiar with these concepts can use Integration Statements to determine what level of integration a vendor asserts a product supports with complementary systems and what clinical and operational benefits such integration might provide. Integration Statements are intended to be used in conjunction with statements of conformance to specific
890   standards (e.g. HL7, IETF, DICOM, W3C, etc.).

IHE provides a process for vendors to test their implementations of IHE actors and integration profiles. The IHE testing process, culminating in a multi-party interactive testing event called the Connect-a-thon, provides vendors with valuable feedback and provides a baseline indication of the conformance of their implementations. The process
895   is not intended to independently evaluate, or ensure, product compliance. In publishing the results of the Connect-a-thon and facilitating access to vendors' IHE Integration Statements, IHE and its sponsoring organizations are in no way attesting to the accuracy or validity of any vendor's IHE Integration Statements or any other claims by vendors regarding their products.

900   **IMPORTANT -- PLEASE NOTE: Vendors have sole responsibility for the accuracy and validity of their IHE Integration Statements**. Vendors' Integration Statements are made available through IHE simply for consideration by parties seeking information about the integration capabilities of particular products. IHE and its sponsoring organizations have not evaluated or approved any IHE Integration Statement or any
905   related product, and IHE and its sponsoring organizations shall have no liability or responsibility to any party for any claims or damages, whether direct, indirect, incidental or consequential, including but not limited to business interruption and loss of revenue, arising from any use of, or reliance upon, any IHE Integration Statement.

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A.1 Structure and Content of an IHE Integration Statement

910 An IHE Integration Statement for a product shall include:

1. The Vendor Name

2. The Product Name (as used in the commercial context) to which the IHE Integration Statement applies.

3. The Product Version to which the IHE Integration Statement applies.

915 4. A publication date and optionally a revision designation for the IHE Integration Statement.

5. The following statement: "This product implements all transactions required in the IHE Technical Framework to support the IHE Integration Profiles, Actors and Options listed below:"

920 6. A list of IHE Integration Profiles supported by the product and, for each Integration Profile, a list of IHE Actors supported. For each integration profile/actor combination, one or more of the options defined in the IHE Technical Framework may also be stated. Profiles, Actors and Options shall use the names defined by the IHE Technical Framework Volume I. (Note: The
925 vendor may also elect to indicate the version number of the Technical Framework referenced for each Integration Profile.)

Note that implementation of the integration profile implies implementation of all required transactions for an actor as well as selected options. The statement shall also include references and/or internet links to the following information:

930 1. Specific internet address (or universal resource locator [URL]) where the vendor's Integration Statements are posted

2. URL where the vendor's standards conformance statements (e.g., HL7, DICOM, etc.) relevant to the IHE transactions implemented by the product are posted.

3. URL of the IHE Initiative's web page for general IHE information
935 www.himss.org/ihe.

An IHE Integration Statement is not intended to promote or advertise aspects of a product not directly related to its implementation of IHE capabilities.

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A.2 Format of an IHE Integration Statement

940 Each Integration Statement shall follow the format shown below. Vendors may add a cover page and any necessary additional information in accordance with their product documentation policies.

IHE Integration Statement	Date	12 Oct 2005
Vendor	**Product Name**	**Version**
Any Medical Systems Co.	IntegrateRecord	V2.3

This product implements all transactions required in the IHE Technical Framework to support the IHE Integration Profiles, Actors and Options listed below:

Integration Profiles Implemented	Actors Implemented	Options Implemented
Cross-Enterprise Sharing of Medical Summaries	Document Consumer	View Option
Audit Trail and Node Authentication	Secure Node	none
Patient Identity Cross-referencing	Patient Identifier Cross-reference Consumer	PIX Update Notification

Internet address for vendor's IHE information:www.anymedicalsystemsco.com/ihe

Links to Standards Conformance Statements for the Implementation	
HL7	www.anymedicalsystemsco.com/hl7

Links to general information on IHE		
In North America: www.ihe.het	In Europe: www.ihe-europe.org	In Japan: www.jira-net.or.jp/ihe-j

The assumption of an integration statement is that all actors listed are functionally grouped and conform to any profile specifications for such groupings. In case of exceptions the vendor must explicitly describe the functional groupings.

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945 **Glossary**

The following elements are found in the Antepartum History & Physical document of the Antepartum Record:

Abortion, Induced (AB, Induced)

950 Number of induced abortions by patient. An induced abortion is a deliberate termination of pregnancy.

Abortion Spontaneous (AB, Spontaneous)

Number of spontaneous abortions by patient. A spontaneous abortion is a natural loss of the products of conception.

Ectopic pregnancy

955 Number of ectopic pregnancies by patient. An ectopic pregnancy is the development of a fertilized ovum outside the uterus, as in a Fallopian tube.

Estimated Date of Delivery(EDD)/Estimated Date of Confinement(EDC)

Date of anticipated delivery (confinement).

Final/Corrected Estimated Date of Delivery (EDD)

960 Corrected EDD/EDC based upon parameters such as ultrasound, first auscultation of fetal heart tones, etc.

Full term

Number of babies the mother has delivered that were between 37 and 42 completed weeks of gestation.

965 Living Children

Number of living children of patient

Multiple births

Number of deliveries of more than one baby by patient

Premature

970 Delivery between 20 and 36 6/7 weeks gestation

Stillbirth

An infant delivered without signs of life after reaching mid-second trimester to full term gestational age. In the US this is usually after 20 or greater weeks gestation. In the UK this has been reported as an infant delivered without signs of life until after 24

975 weeks gestation.

Total Pregnancies

Number of total pregnancies

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Antepartum History & Physical - Menstrual History

980   Birth Control Pills (BCP)

   Oral contraceptives

Frequency

   Duration of the monthly menstrual cycle; from first day of menses to the first day of
   next menses.

985   hCG+

   Human Chorionic Gonadotropin pregnancy test.

LMP (last menstrual period)

   Date measured as the first day of the patient's most recent menstrual period.

990
- Approximate (month known) - Patient is unsure of exact date but can offer an approximate date.
- Definite - Patient can say with certainty the date of her last menstrual period.
- Final - Finally agreed upon date of last menstrual period.
- Unknown - Patient does not know the date of her last menstrual period.

Menarche

995   Age at onset of initial menstrual period.

Menses Monthly

   Menses is the monthly flow of blood and cellular debris from the uterus that begins at
   puberty and ceases at menopause.

Normal Amount/duration

1000   Last menstrual was typical in amount and duration.

Prior Menses

   Date of most recent menstrual period.

Antepartum History & Physical - Past Pregnancies

1005   Anesthesia

   The loss of the ability to feel pain caused by administration of a drug or other
   intervention.

Artificial Reproductive Technology (ART) Treatment

   Fertility procedures in which both eggs and sperm are handled in the laboratory (in
1010   vitro) to establish a pregnancy.

Autoimmune disorder

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An autoimmune disorder is a condition in which the body attacks its own tissues. (ACOG)

Birth weight

1015   Weight of infant at birth.

Delivery Date

Date of delivery of patient's previous pregnancies.

DES

Diethylstilbesterol

1020   D (Rh) sensitized

Rh negative mother is sensitized to the Rh D antigen. A sensitized mother produces IgG anti-D (antibody) that crosses the placenta and coats D-positive fetal red cells which are then destroyed in the fetal spleen.

Gestational Age weeks

1025   The number of weeks elapsed between the first day of the last normal menstrual period and the date of delivery.

Infertility

Infertility primarily refers to the biological inability of a man or a woman to contribute to conception. Infertility may also refer to the state of a woman who is 1030   unable to carry a pregnancy to full term.

Kidney disease

Kidney disease is either a declining or a sudden loss in renal function.

Length of labor

The interval between onset of contractions and childbirth.

1035   Place of Delivery

Hospital name, city and state if known.

Preterm labor

Labor that begins before 37 weeks gestation.

Pulmonary (TB, Asthma)

1040   Diseases or disorders of the lungs, i.e. asthma, tuberculosis or other pulmonary problems.

Sex Male/Female

Sex of patient's previously delivered babies.

Type Delivery

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1045   Type of delivery in pregnancy: Vaginal (spontaneous, forceps, vacuum), Cesarean
        section (low-transverse, classical, low-vertical).

Urinary Tract Infection (UTI)

        A urinary tract infection (UTI) is a bacterial infection that affects any part of the
        urinary tract.

1050   Uterine Anomaly

        – Any uterine structural abnormalities.

Varicosities/Phlebitis

        Swelling or inflammation of veins.

1055   **Antepartum History & Physical - Other elements:**

Abdomen

        Area of the body that lies between the chest and the pelvis and encloses the stomach,
        intestines, liver, spleen and pancreas

Adnexa

1060   Appendages of the uterus which include the fallopian tubes, the ovaries and the
        supporting ligaments of the uterus.

BMI - Body Mass Index.

        Measurement of the relative percentages of fat and muscle mass in the human body.

BP - Blood Pressure

1065   Pressure exerted by the blood against the walls of the arteries, maintained by the
        contraction of the left ventricle, the resistance of the arterioles and capillaries, the
        elasticity of the arterial walls, and by the viscosity and volume of the blood.

Breasts

        In humans, one of the paired regions in the anterior portion of the thorax. The breasts
1070   consists of mammary glands, the skin, the muscles, the adipose tissue and connective
        tissues.

Cervix

        The lower, narrow end of the uterus, which protrudes into the vagina. (ACOG)

Diagonal Conjugate

1075   The distance from the promontory of the sacrum to the lower margin of the pubic
        symphysis

Extremities

        A bodily limb or appendage.

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1080   Fundus

The fundus of the uterus is the top portion of the uterus, opposite from the cervix. Fundal height, measured from the top of the pubic bone, is routinely measured in pregnancy to determine growth rates.

Gynecoid pelvic type

1085   The normal female pelvis.

Heart

The hollow, muscular organ that maintains the circulation of the blood.

HEENT

Head, Eyes, Ears, Nose and Throat

1090   Height

Measurement of stature

Lungs

Either of the pair of organs occupying the cavity of the thorax that effect the aeration of the blood.

1095   Lymph nodes

Any of the accumulations of lymphoid tissue organized as definite lymphoid organs varying from 1 to 25 mm in diameter situated along the course of lymphatic vessels and consisting of an outer cortical and inner medullary part.

Rectum

1100   The distal segment of the large intestine, between the sigmoid colon and the anal canal.

Sacrum

Triangular bone below the lumbar vertebrae.

Skin

1105   Outer protective covering of the body

Spines

(Ischial Spines) Two parts of the maternal pelvis resulting from the bony processes projecting backward and medially from the posterior border of the ischium.

Subpubic arch

1110   Arch formed by the conjoined rami of the ischia and pubic bones of the two sides of the body.

Teeth

one of the hard, calcified structures set in the alveloar processes of the jaws for the biting and mastication of food.

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1115 Thyroid

The thyroid gland. One of the largest endocrine glands in the body. This gland is found in the neck below the thyroid cartilage and at approximately the same level as the cricoid cartilage. The thyroid controls how quickly the body burns energy, makes proteins, and how sensitive the body should be to other hormones.

1120 Uterus size

In pregnancy the uterine size is estimated in terms of weeks of gestation. e.g 12 weeks if the fundus reaches the top of the smphysis pubis or 20 weeks' gestation when the fundus reaches the umbilicus.

Vagina

1125 The genital canal in the female, leading from the opening of the vulva to the cervix of the uterus.

Vulva

The external genital organs of the female, including the labia majora, labia minora, clitoris, and vestibule of the vagina.

1130 Patient Weight

A measurement of mass.

The following terms are found in the Antepartum Laboratory document of the Antepartum Record:

1135 1st Trimester Aneuploidy risk assessment (Free or Total)

Non-invasive screening for chromosomal abnormalities, such as Down syndrome, performed in the first trimester. Screening tests that uses a combination of fetal measurements (crown rump length and nuchal translucency) and maternal blood tests for beta-human chorionic gonadotropin (hCG) and pregnancy associated plasma
1140 protein (PAPP-A) to determine risk for trisomy 21, trisomy 13 and trisomy 18.

2nd Trimester serum screening

Non-invasive screening test for chromosomal abnormalities, such as Down yndrome, trisomy 18, or open neural defects. Blood test to measure alpha-fetoprotein (AFP), estriol, human chorionic gonadotropin (hCG) [free or total], and inhibin-A.

1145 Amniocentesis (Amnio)

Percutaneous transabdominal puncture of the uterus during pregnancy to obtain amniotic fluid.

Amniotic Fluid (AFP) Test

A test to detect the presence of Alpha-fetoprotein in amniotic fluid.

1150 Antibody screen

A blood test to detect antibodies against red blood cell antigens.

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Anti-D Immune Globulin (RHIG)

Anti-D antibodies given to prevent sensitization to the RhD antigen on red blood cells.

1155   Blood type

Test to determine blood group, i.e. A, B, AB or O

Chlamydia Test

Test done to detect the bacterium, Chlamydia trachomatis.

Cystic Fibrosis Screening Test

1160   Test to detect gene mutations that cause cystic fibrosis.

Chorionic Villi Sampling (CVS)

A method of sampling the cells of the placental chorionic villi, done either transabdominally or transcervically.

D (Rh) Antibody screen

1165   A blood screening test for presence of IgG antibodies to the Rh D antigen on red blood cells.

D (Rh) type

A blood test to detect the presence of the Rh D red blood surface antigen.

Diabetes screen

1170   Laboratory test to screen for gestational diabetes.

Familial Dysautonomia

Autosomal disorder of the peripheral and autonomic nervous systems limited to individuals of Ashkenazic Jewish descent; clinical manifestations are present at birth and include diminished lacrimation, defective thermoregulation, orthostatic
1175   hypotension, fixed pupils, excessive sweating, loss of pain and temperature sensation, and absent reflexes; pathologic features include reduced numbers of small diameter peripheral nerve fibers and autonomic ganglion neurons.

Genetic Screening Test

Screening for genetic disorders, e.g. sickle cell, Thalassemia, Tay-Sachs, Canavan,
1180   cystic fibrosis, fragile X syndrome, or Duchenne's muscular dystrophy.

Gonorrhea Test

Test to detect Neisseria gonorrhea

Group B Streptococcus Rectovaginal Culture (Group B Strep)

A test to determine the presence of group B streptococcus (streptococcus
1185   agalactiae) in the lower genital tract in pregnant women.

GTT (if screen abnormal)

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Glucose Tolerance Test. Used to determine how quickly the body metabolizes blood sugar. Test to diagnose gestational diabetes mellitus.

HBsAg Test

1190 Test for the detection of the surface antigen of the Hepatitis-B virus.

HCT/HGB/MCV

- HCT- Hematocrit – A blood test measuring the percentage of red blood cells found in a given volume of whole blood.
- HGB- Hemoglobin – A blood test measuring the level of the protein carrying
1195 oxygen in red blood cells.
- MCV - Mean corpuscular volume - The average volume of red blood cells calculated from the hematocrit red blood cell count

Hemoglobin Electrophoresis

A blood test done to measure the different types of hemoglobin. The test can detect
1200 abnormal levels of hemoglobin such as that found in sickle cell anemia.

HIV Test

A test to detect for the presence of antibodies to the human immunodeficiency virus.

HIV Counseling

Discussion with pregnant patient regarding Human Immunodeficiency Virus/ HIV
1205 status, risks and prevention strategies.

Karotype

Test done on cells/tissue to identify and evaluate the number, shape, and size of chromosomes.

MSAFP - Maternal Serum Alpha-Fetoprotein

1210 A screening blood serum test on the mother for to determine the level of alpha-fetoprotein.

Multiple marker screening test

A maternal blood serum screening test for the detection of Down syndrome, Trisomy 18, and neural tube defects in the fetus. The following analytes are
1215 measured: alpha-fetoprotein, human chorionic gonadotriopin, estriol, and inhibin-A. When the first three analytes are used, this is also called a maternal serum triple screen or a maternal serum quad screen when all four analytes are used.

Pap test

Cervical cytology test to determine abnormal cells of the cervix.

1220 PPD Skin Test

Mantoux test with purified protein derivative to screen for exposure to tuberculosis.

Rubella Test

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A blood test to detect the presence of antibodies against the rubella virus (German measles).

1225   Tay-Sachs Screening Test

A blood test done to measure the amount of beta-hexosaminidase A or B activity in serum or white blood cells, or for the most common DNA mutations causing Tay Sachs disease.

Ultrasound

1230   A radiologic study using sound waves used in the assessment of gestational age, size, growth, anatomy, and blood flow of a fetus or in the assessment of maternal anatomy and blood flow.

Urine Culture

A Test that it used to detect the presence of bacteria or other organism in the urine.

1235   Urine Screen

A physical, chemical, and / or microscopic examination of the urine. It may be used to screen for / or to detect abnormal kidney function, kidney stones, urinary tract infections, or substance abuse.

Varicella

1240   A blood test to detect the presence of anti-varicella antibodies.

VDRL (Venereal Disease Research Laboratories)

A blood test to screen for the presence of antibodies against Treponema pallidum, the bacteria that causes syphilis.

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The following terms are found in the Antepartum Education document of the Antepartum Record:

First Trimester

Alcohol

1250   Discussion with patient about past and present use of alcohol and the perinatal implications of continued use during pregnancy; referral to treatment program if appropriate.

Anticipated Course of prenatal care

1255   Discussion with the patient on the scope of care that will be performed in the office, lab work that may be performed, signs and symptoms that should be reported, anticipated schedule of visits, physician coverage of labor and delivery.

Childbirth classes/hospital facilities

Discussion with the patient on educational programs available for childbirth and hospital choice.

1260   Domestic violence

Screening/Discussion with patient regarding physical threats/abuse/safety concerns; referral to appropriate counseling, legal and/or social advocacy program if appropriate.

Environmental/Work hazards

1265   Discussion with patient about potential exposures to environmental agents at work, home, or locations that may affect pregnancy.

Exercise

Discussion with patient on appropriate level of exercise activities during the pregnancy.

1270   Illicit/Recreational drugs

Discussion with patient about past and present use of illicit or recreational drugs and the perinatal implications of continued use during pregnancy; referral to treatment program if appropriate.

Indications for ultrasounds

1275   Discussion with patient regarding reasons ultrasound test will be performed during pregnancy.

Influenza vaccine

Discussion with patient of risks/benefits of influenza and influenza vaccine.

Nutrition and weight gain counseling, special diet

1280   Information about balanced nutrition, ideal caloric intake and weight gain.

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Risk factors identified by prenatal history

Seatbelt use

　　Discussion with patient on use of seatbelts.

1285　Sexual activity

　　Discussion with the patient of sexual activity: concerns, restrictions, warning signs and/or safe sex practices.

Smoking counseling

　　Discussion with patient regarding smoking cessation and smoke exposure.

1290　Tobacco (Ask,advise,assess,assist,and arrange)

　　status; Advise patient to stop smoking; Assess patient's willingness to attempt to quit smoking; Assist patients who are interested in quitting by providing pregnancy specific cessation materials; Arrange follow up visits to track progress.

Toxoplasmosis precautions

1295　Discussion with patient of risk factors for toxoplasmosis and precautions for avoiding/preventing infection.

Travel

　　Discussion with patient on travel precautions, if any.

Use of any medications (including supplements, vitamins, herbs or OTC drugs)

1300　Discussion with patient of risks/benefits/safety of any medications currently used by patient.

Second Trimester

Abnormal lab values

1305　Discussion with patient of lab results that fall outside normal range and that may require further testing.

Domestic violence

　　Screening/Discussion with patient regarding physical threats/abuse/safety concerns; referral to appropriate counseling, legal and/or social advocacy program if
1310　appropriate.

Influenza vaccine

　　Discussion with patient of risks/benefits of influenza and influenza vaccine.

Postpartum family planning/tubal sterilization

　　Discussion with patient of intended postpartum contraception options, including tubal
1315　sterilization.

Selecting a newborn care provider

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Discussion with patient to identify newborn care provider; referral to resources to help patient choose provider if none previously identified.

Signs and symptoms of preterm labor

1320   Discussion with patient on risks, signs and symptoms of preterm labor.

Smoking counseling

Discussion with patient regarding smoking cessation and smoke exposure.

Third Trimester

1325   Anesthesia/Analgesia plans

Discussion with patient to determine intended method of pain management/discomfort during labor and delivery.

Breast or bottle feeding

Discussion with patient of nutritional advantages/disadvantages of human breast milk,
1330   bottled formula; advise on available lactation consultation services.

Circumcision

Discussion with patient on circumcision of male newborn.

Domestic violence

Screening/Discussion with patient regarding physical threats/abuse/safety concerns;
1335   referral to appropriate counseling, legal and/or social advocacy program if appropriate.

Family medical leave or disability forms

Discussion with patient about any forms the patient will need completed for employment or insurance purposes.

1340   Fetal Movement monitoring

Discussion with patient regarding her perception and assessment of fetal movement.

Influenza vaccine

Discussion with patient of risks/benefits of influenza and influenza vaccine during pregnancy.

1345   Labor signs

Discussion with patient on signs of labor, i.e. contractions, membrane rupture, bleeding, etc.

Newborn education (Newborn screening, jaundice, SIDS, car seat)

Prenatal discussion with patient of preventive public health screening procedures
1350   available to newborns; testing that will occur on baby after birth to screen for up to 30 disorders. Additional items may include infants risk for developing jaundice.

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Discussion of positioning of infant to reduce SIDS risk. Education regarding car seat safety.

Postpartum depression

1355   Discussion with patient of signs of postpartum depression.

Postterm counseling

Discussion with patient of risks of pregnancy extending beyond 42 weeks.

Signs & Symptoms of Pregnancy-induced hypertension

Discussion with patient of signs and symptoms of hypertension.

1360   Smoking counseling

Discussion with patient regarding smoking cessation and smoke exposure.

VBAC (Vaginal Birth After Cesarean) counseling

Discussion with patient of risks/benefits of vaginal birth after previous cesarean surgery.

1365   History and physical have been sent to hospital

Notation of date and initials of person transmitting history and physical to hospital prior to delivery.

Tubal sterilization consent signed

Notation of date the consent form for tubal sterilization signed and the initials of
1370   person witnessing.

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Volume 2

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1 Preface to Volume 2

1.1 Intended Audience

The intended audience of this document is:

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- 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

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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).

1385
- 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

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(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

1395
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)

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

1.2.1 How this Document is Organized

Section 1 is the preface, describing the intended audience, related resources, and

1405
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.

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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
1410   transaction.

Section 4 defines a set of payload bindings with transactions.

Section 5 defines the content modules that may be used in transactions.

1.2.2 Conventions Used in this Volume

This document has adopted the following conventions for representing the framework
1415   concepts and specifying how the standards upon which the IHE Technical Framework is based should be applied.

1.2.2.1 The Generic IHE Transaction Model

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

1420   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.:
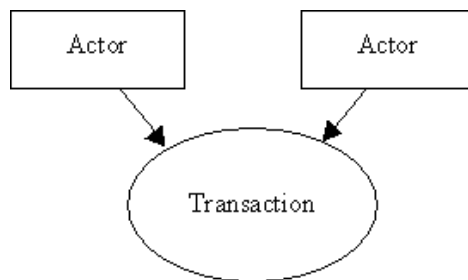
1425   **Figure 1.2-1 Use Case Role Diagram**

- *Referenced Standards*: the standards (stating the specific parts, chapters or sections thereof) to be used for the transaction.
- *Interaction Diagram*: a graphical depiction of the actors and transactions, with related processing within an actor shown as a rectangle and time progressing
1430   downward, similar to:

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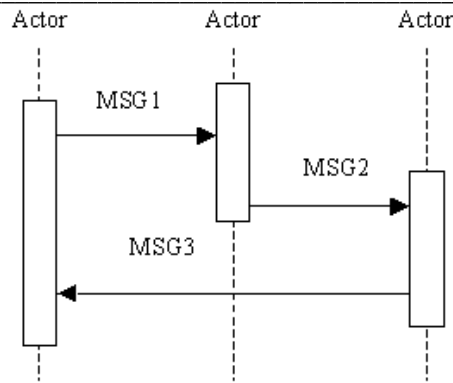
Figure 1.2-2 Interaction Diagram

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

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

1.3 Copyright Permissions

Health Level Seven, Inc., has granted permission to the IHE to reproduce tables from the
HL7 standard. The HL7 tables in this document are copyrighted by Health Level Seven,
Inc. All rights reserved.

Material drawn from these documents is credited where used.

1.4 How to Contact Us

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

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Senior Director of Integrating the Healthcare Enterprise (IHE)
230 East Ohio St., Suite 500
Chicago, IL 60611
Email: ihe@himss.org

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1460 ## 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
1465 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.

1470 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
1475 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
1480 - 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

1485 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
1490 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
1495 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

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1500 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
1505 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.
1510 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,
1515 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
1520 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
1525 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
1530 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
1535 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
1540 of these transactions require the understanding of the Integration profile they support.

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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
1545   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
1550   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.

1555   **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
1560   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
1565   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
1570   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 than 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.

1575   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
1580   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

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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
1585   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.

1590   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.

1595   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
1600   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
1605   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
1610   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
1615   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.

1620   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
1625   by the base standard. While any specific content module has a limited scope and set of

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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

1630 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
1635 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
1640 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.
1645
- 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.

1650 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
1655 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.

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Sample Document Specification SampleDocumentOID

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

2.3.1.1.1 Specification

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

Table 2.3.1-1

2.3.1.1.2 Conformance

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

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


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

2.3.1.1.3 Schematron

```
<pattern name='Template_SampleDocumentOID'>
 <rule context='*[cda:templateId/@root="SampleDocumentOID"]'>
  <!-- Verify that the template id is used on the appropriate type of object -->
```

_____

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

1660 **2.3.1.2 Section Content Module Constraints**

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

1665 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

1670 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.

1675
- 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
1680 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
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>
```

2.3.1.3 Entry and Header Content Modules Constraints

1685 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"
1690 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.

1695 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.
1700
- 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.
1705
- Other constraints as necessary.

_____

_____

An example is shown below:

Sample Entry

Some text describing the entry.

1710
```
<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

1715 **2.3.1.3.2 <templateId root='foo'/>**

Some details about the template id element

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_____

3 IHE Transactions

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

_____

4 IHE Patient Care Coordination Bindings

1720

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

1725 transactions and content to which it applies.

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

1730 XDM. The columns of the following tables are:

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

1735 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.

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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
1740   necessary.

4.1 Medical Document Binding to XDS, XDM and XDR

This binding defines a transformation that generates metadata for the XDSDocumentEntry element of appropriate transactions from the XDS, XDM and XDR profiles given a medical document and information from other sources. The medical
1745   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 XDSDocumentEntry Metadata

XDSDocumentEntry Attribute	Optional?	Source Type	Source/ Value
availabilityStatus	R	DS	
authorInstitution The authorInstitution can be formated using the following XPath expression, where **$inst** in the expression below represents the representedOrganization. concat($inst/id/@extension, "^", $inst/name, "^^^^^^&", $inst/id/@root, "&ISO")	R2	SAT	$inst <= /ClinicalDocument/author /assignedAuthor /representedOrganization
authorPerson The author can be formatted using the following XPath expression, where **$person** in the expression below represents the author. concat($person/id/@extension,"^", $person/assignedPerson/name/family,"^", $person/assignedPerson/name/given[1],"^", $person/assignedPerson/name/given[2],"^", $person/assignedPerson/name/suffix,"^", $person/assignedPerson/name/prefix,"^", $person/assignedPerson/name/degree,"^^&", $person/id/@root,"&ISO")	R2	SAT	$person <= /ClinicalDocument/author
authorRole This metadata element should be based on a mapping of the participation function defined in the CDA document to the set of author roles configured for the affinity domain.	R2	SAT	/ClinicalDocument/author/ participationFunction
authorSpecialty This metadata element should be based on a mapping of the code associated with the	R2	SAT	/ClinicalDocument/author/ assignedAuthor/code

_____

assignedAuthor to detailed defined classification system for healthcare providers such configured in the affinity domain. Possible classifications include those found in SNOMED-CT, or the HIPAA Healthcare Provider Taxonomy.			
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 /ClinicalDocument/code/@code
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 Consient with /ClinicalDocument/code/@code
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/ confidentialityCode/@code -AND/OR- /ClinicalDocument/authorization/ consent[templateId/@root= '1.3.6.1.4.1.19376.1.5.3.1.2.5'] /code/@code
comments	O	DS	
creationTime Times specified in clinical documents may be specified with a precision in fractional sections, and may contain a time zone offset. In the XDS Metadata, it can be precise to the second, and is always given in UTC, so the timezone offset if present must be added to the current time to obtain the UTC time.	R	SAT	/ClinicalDocument/effectiveTime
entryUUID	R	DS	
eventCodeList These values express a collection of keywords that may be relevant to the consumer of the documents in the registry. They may be mapped from the service event code found in the clinical document.	O	CADT	/ClinicalDocument/documentation Of/ serviceEvent/code
eventCodeDisplayNameList These are the display names for the collection of keywords described above.	R (if event Code is valued)	CADT	
formatCode	R	FM	

_____

The format code for each PCC Document content profile is provided within the document specifications.			
healthcareFacilityTypeCode A fixed value assigned to the Document Source and configured form a set of Affinity Domain defined values.	R	CAD	Must be concistent with /clinicalDocument/code
healthcareFacility TypeCodeDisplay Name	R	CAD	Must be concistent with /clinicalDocument/code
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[1],"^", $person/assignedPerson/name/given[2],"^", $person/assignedPerson/name/suffix,"^", $person/assignedPerson/name/prefix,"^", $person/assignedPerson/name/degree,"^^&", $person/id/@root,"&ISO")	O	SAT	$person <= /ClinicalDocument/ legalAuthenticator
mimeType	R	FM	text/xml
parentDocumentRelationship Local document versions need not always be published, and so no exact mapping can be determined from the content of the CDA document. The parentDocumentRelationship may be determined in some configurations from the relatedDocument element present in the CDA dsocument.	R (when applicable)	DS	/ClinicalDocument/relatedDocume nt/@typeCode
parentDocumentId Local document versions need not always be published, and so no exact mapping can be determined from the content of the CDA document. The parentDocumentId may be determined in some configurations from the relatedDocument element present in the CDA dsocument. The parentDocumentId can be formatted using the following XPath expression, where **$docID** in the expression below represents the identifier. concat($docID/@root,"^",	R (when parent Document Relationship is present)	DS	$docID <= /ClinicalDocument/ relatedDocument/parentDocument/ id

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

_____

_____

mapping step can be omitted.			
typeCodeDisplay Name	R	CADT	/ClinicalDocument/code/@display Name
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

4.1.2 XDSSubmissionSet Metadata

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

4.1.2.1 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.

4.1.2.2 Use of XDS Folders

No specific requirements identified.

4.1.2.3 Configuration

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

4.1.3 Extensions from other Domains

4.1.3.1 Scanned Documents (XDS-SD)

4.1.3.2 Basic Patient Privacy Consents (BPPC)

4.1.3.3 Laboratory Reports (XD-LAB)

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5   Namespaces and Vocabularies

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

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

1775

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

5.1.1   IHE Format Codes

The table below lists the format codes, template identifiers and media types used by the IHE Profiles specified in the PCC Technical Framework, and also lists, for reference purposes the same values for other selected IHE Profiles from other committees.

Profile	Format Code	Media	Template

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		Type	ID
Medical Summaries (XDS-MS)	urn:ihe:pcc:xds-ms:2007	text/xml	
Exchange of Personal Health Records (XPHR)	urn:ihe:pcc:xphr:2007	text/xml	
Emergency Department Referral (EDR)	urn:ihe:pcc:edr:2007	text/xml	
Antepartum Summary	urn:ihe:pcc:aps:2007	text/xml	
Exchange of Personal Health Records (XPHR)	urn:ihe:pcc:xphr:2007	text/xml	
Emergency Department Encounter Summary (EDES)	urn:ihe:pcc:edes:2007	text/xml	
2008 Profile Proposals			
Antepartum Record (APR)	urn:ihe:pcc:apr:handp:2008 urn:ihe:pcc:aps:2007 urn:ihe:pcc:apr:lab:2008 urn:ihe:pcc:apr:edu:2008	text/xml	
Immunization Registry Content (IRC)	urn:ihe:pcc:irc:2008	text/xml	
Cancer Registry Content (CRC)	urn:ihe:pcc:crc:2008	text/xml	
Care Management (CM)	urn:ihe:pcc:cm:2008	text/xml	
ITI Content Profiles			
Scanned Documents	urn:ihe:iti:sd:200?	text/xml	
Basic Patient Privacy Consents	urn:ihe:iti:bppc:2007	text/xml	
Basic Patient Privacy Consents with Scanned Document	urn:ihe:iti:bppc-sd:2007	text/xml	
Laboratory Content Profiles			
CDA Laboratory Report			
Scanned Documents		text/xml	

5.1.2 IHEActCode Vocabulary

CCD   ASTM/HL7 Continuity of Care Document

CCR   ASTM CCR Implementation Guide

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

Code	Description

_____

_____

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

1785

5.1.3 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.

_____

1790   ## 6   PCC Content Modules

6.1 Conventions

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

R

1795   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).

1800   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.
1805   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
1810   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
1815   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.

6.2 Folder Content Modules

This section contains modules that describe the content requirements of Folders used with
1820   XDS, XDM or XDR. When workflows are completed normally, the folders will contain documents with the optionality specified in the tables shown below. Under certain circumstances, the folders will not meet the optionality requirements described below, for example, when the patient leaves before treatment is completed.

_____

_____

6.2.1 APR Folder Specification

1825   This is a content profile for the APR folder. The APR folder is a container for all documents created as a result of an episode of antepartum care. These documents include, but are not limited to those described below.

Document Name	Opt	Template ID
Antepartum History and Physical	R	1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1
Antepartum Summary	R	1.3.6.1.4.1.19376.1.5.3.1.1.11.2
Antepartum Laboratory Report	R	1.3.6.1.4.1.19376.1.5.3.1.1.16.1.2
Antepartum Education	R	1.3.6.1.4.1.19376.1.5.3.1.1.16.1.3
Diagnostic Imaging Reports	O	
Other Lab Reports	O	
Consultations	O	

6.3 CDA Release 2.0 Content Modules

1830   This section contains content modules based upon the HL7 CDA Release 2.0 Standard, and related standards and/or implementation guides.

6.3.1 CDA Document Content Modules

6.3.1.1 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
1835   profiles described the PCC Technical Framework.

6.3.1.1.1 Standards

CDAR2   HL7 CDA Release 2.0

CDTHP   CDA for Common Document Types History and Physical Notes (DSTU)

XMLXSL   Associating Style Sheets with XML documents

6.3.1.1.2 Conformance

CDA Release 2.0 documents that conform to the requirements of this content module shall indicate their conformance by the inclusion of the appropriate <templateId>
1840   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'/>
1845   <id root=' ' extension=' '/>
       <code code=' ' displayName=' '
         codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
       <title>Medical Documents</title>
       <effectiveTime value='20080601012005'/>
       <confidentialityCode code='N' displayName='Normal'
1850     codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
       <languageCode code='en-US'/>
            :
       <component><structuredBody>

1855   </strucuredBody></component>
     </ClinicalDocument>
```

Figure 6.3-1 Sample Medical Documents Document

```
       <!-- Verify the document type code -->
1860   <assert test='cda:code[@code = "{{{LOINC}}}"]'>
         Error: The document type code of a Medical Documents must be {{{LOINC}}}
       </assert>
       <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
         Error: The document type code must come from the LOINC code
1865     system (2.16.840.1.113883.6.1).
       </assert>
```

6.3.1.1.3 Specification

The constraints for encoding of the CDA Header (Level 1) can be found in the CDA for Common Document Types History and Physical Implementation Guide, in the section 2.
1870   CDA Header -- General Constraints.

- IHE Medical Documents **SHALL** follow all constraints found in that section with the exception of the constraint on realmcode found in **CONF-HP-10:**
- IHE Medical Documents which are implemented for the US Realm **SHALL** follow ALL constraints found in that section, and **SHALL** use both the IHE Medical
1875   Document templateId (1.3.6.1.4.1.19376.1.5.3.1.1.1) and the HL7 General Header Constraints templateId (2.16.840.1.113883.10.20.3).}}

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

6.3.1.1.4 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
1880   (see http://www.w3.org/TR/xhtml-basic/) document that renders the clinical content of a Medical Summary Document as closely as possible as the sending provider viewed the completed document. When a style sheet is provided, at least one processing instruction **SHALL** be included in the document that including a link to the URL for the XML style

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1885 sheet. To ensure that the style sheet is available to all receivers, more than one stylesheet link **MAY** be included. When a stylesheet is used within an XDS Affinity domain, the link to it **SHALL** be provided using an HTTPS or HTTP URL.

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

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

1890
```
<?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).

1895 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

1900 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'
1905 alternate='yes'?>
```

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

1910 **6.3.1.1.5 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
1915   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
1920   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,

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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.

6.3.1.2 Medical Summary Specification 1.3.6.1.4.1.19376.1.5.3.1.1.2

A medical summary contains a snapshot of the patient's medical information, including at the very least, a list of the patients problems, medications and allergies.

6.3.1.2.1 Standards

| CDAR2 | HL7 CDA Release 2.0 |
| CRS | HL7 Care Record Summary |

6.3.1.2.2 Specification

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

6.3.1.2.3 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='20080601012005'/>
  <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 6.3-2 Sample Medical Summary Document

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6.3.1.2.4 Schematron

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

6.3.1.2.5 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) .

6.3.1.3 History and Physical Specification 1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4

The intention of this work is to provide a parent template for the Antepartum History and Physical specifications. Future work in IHE may create an integration profile for a history and physical.

6.3.1.3.1 Format Code

The XDSDocumentEntry format code for this content is **urn:ihe:pcc:handp:2008**

6.3.1.3.2 LOINC Code

The LOINC code for this document is **34117-2** HISTORY AND PHYSICAL

6.3.1.3.3 Standards

CDAR2   HL7 CDA Release 2.0

CDTHP   CDA for Common Document Types History and Physical Notes (DSTU)

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6.3.1.3.4 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
History of Present Illness	R	1.3.6.1.4.1.19376.1.5.3.1.3.4
History of Past Illness	R	1.3.6.1.4.1.19376.1.5.3.1.3.8
Medications	R	1.3.6.1.4.1.19376.1.5.3.1.3.19
Allergies and Other Adverse Reactions Section	R	1.3.6.1.4.1.19376.1.5.3.1.3.13
Social History	R	1.3.6.1.4.1.19376.1.5.3.1.3.16
Family History	R	1.3.6.1.4.1.19376.1.5.3.1.3.14
Review of Systems	R	1.3.6.1.4.1.19376.1.5.3.1.3.18
Physical Examination	R	1.3.6.1.4.1.19376.1.5.3.1.1.9.15
Vital Signs	R	1.3.6.1.4.1.19376.1.5.3.1.3.25
Results Diagnostic Findings; use this OR Coded Results	R	1.3.6.1.4.1.19376.1.5.3.1.3.27
Coded Results Diagnostic Findings; use this OR Results	R	1.3.6.1.4.1.19376.1.5.3.1.3.28
Assessment and Plan	R	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.5

2010 **Table 6.3.1-1**

6.3.1.3.5 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 Summaries 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.

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```
     <ClinicalDocument xmlns='urn:hl7-org:v3'>
2020   <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='1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4'/>
       <id root=' ' extension=' '/>
       <code code='34117-2' displayName='HISTORY AND PHYSICAL'
2025     codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
       <title>History and Physical</title>
       <effectiveTime value='20080601012005'/>
       <confidentialityCode code='N' displayName='Normal'
         codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
2030   <languageCode code='en-US'/>
          :
       <component><structuredBody>
         <component>
           <section>
2035         <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>
2040       <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>
2045     <component>
           <section>
             <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.8'/>
             <!-- Required History of Past Illness Section content -->
           </section>
2050     </component>
         <component>
           <section>
             <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.19'/>
             <!-- Required Medications Section content -->
2055         </section>
         </component>
         <component>
           <section>
             <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.13'/>
2060         <!-- Required Allergies and Other Adverse Reactions Section Section content -->
           </section>
         </component>
         <component>
           <section>
2065         <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.16'/>
             <!-- Required Social History Section content -->
           </section>
         </component>
         <component>
2070       <section>
             <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.14'/>
             <!-- Required Family History Section content -->
           </section>
         </component>
2075     <component>
           <section>
             <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.18'/>
             <!-- Required Review of Systems Section content -->
           </section>
2080     </component>
         <component>
           <section>
             <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.15'/>
             <!-- Required Physical Examination Section content -->
2085         </section>
         </component>
         <component>
           <section>
```

```
              <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.25'/>
2090          <!-- Required Vital Signs Section content -->
            </section>
          </component>
          <component>
            <section>
2095          <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.27'/>
              <!-- Required Results Section content -->
            </section>
          </component>
          <component>
2100        <section>
              <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.28'/>
              <!-- Required Coded Results Section content -->
            </section>
          </component>
2105      <component>
            <section>
              <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.13.2.5'/>
              <!-- Required Assessment and Plan Section content -->
            </section>
2110      </component>
        </strucuredBody></component>
      </ClinicalDocument>
```

Figure 6.3-3 Sample History and Physical Document

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6.3.1.3.6 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
    Error: The History and Physical can only be used on Clinical Documents.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.2"]'>
    Error: The parent template identifier for History and Physical is not present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='cda:code[@code = "34117-2"]'>
    Error: The document type code of a History and Physical must be 34117-2
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
    Error: The document type code must come from the LOINC code
    system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: A(n) History and Physical must contain Chief Complaint.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4
   </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(n) History and Physical must contain History of Present Illness.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4
   </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(n) History and Physical must contain History of Past Illness.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4
   </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(n) History and Physical must contain Medications.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4
   </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(n) History and Physical must contain Allergies and Other Adverse Reactions
Section.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4
   </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(n) History and Physical must contain Social History.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4
   </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(n) History and Physical must contain Family History.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4
   </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(n) History and Physical must contain Review of Systems.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4
   </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(n) History and Physical must contain Physical Examination.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4
   </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(n) History and Physical must contain Vital Signs.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4
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```
          </assert>
          <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.27"]'>
2185        <!-- Verify that all required data elements are present -->
            Error: A(n) History and Physical must contain Results.
            See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4
          </assert>
          <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.28"]'>
2190        <!-- Verify that all required data elements are present -->
            Error: A(n) History and Physical must contain Coded Results.
            See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4
          </assert>
          <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.13.2.5"]'>
2195        <!-- Verify that all required data elements are present -->
            Error: A(n) History and Physical must contain Assessment and Plan.
            See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4
          </assert>
        </rule>
2200  </pattern>
```

6.3.1.4 Antepartum Summary Specification 1.3.6.1.4.1.19376.1.5.3.1.1.11.2

The Antepartum Summary represents a summary of the most critical information to an antepartum care provider regarding the status of a patients pregnancy. The APS document is a medical summary and inherits all header constraints from Medical Summaries. The use case for this document is described fully in the APS Profile in PCC TF-1.

6.3.1.4.1 Format Code

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

6.3.1.4.2 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

6.3.1.4.3 Data Element Index

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This section maps the ACOG Antepartum Record to corresponding CDA sections as constrained by IHE.

ACOG Antepartum Record Datum	CDA Section	Trial
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	Visit Summary Flowsheet	
Visit Flowsheet	Visit Summary Flowsheet	

6.3.1.4.4 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 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'	R	1.3.6.1.4.1.19376.1.5.3.1.3.34
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	R	1.3.6.1.4.1.19376.1.5.3.1.3.31

Comment [LAS1]: Keith: These links in these tables go to elsewhere in this document – is this correct?

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of the following values: (General | Epidural | Spinal) or a Null flavor to represent unknown or not listed.		
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
Antepartum Visit Summary Flowsheet	R	1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2

Table 6.3.1-2

2215 Note: The Antepartum summary 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

2220 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>
```

2230

6.3.1.4.5 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

2235 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'>
2240   <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=' '
2245     codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
       <title>Antepartum Summary</title>
       <effectiveTime value='20080601012005'/>
       <confidentialityCode code='N' displayName='Normal'
         codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
2250   <languageCode code='en-US'/>
          :
       <component><structuredBody>
        <component>
         <section>
2255       <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.13'/>
           <!-- Required Allergies Section content -->
         </section>
        </component>
        <component>
2260       <section>
           <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.34'/>
           <!-- Required Advance Directives Section content -->
         </section>
        </component>
2265     <component>
         <section>
           <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.31'/>
           <!-- Required Plan of Care Section content -->
         </section>
2270     </component>
        <component>
         <section>
           <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.19'/>
           <!-- Required Medications Section content -->
2275       </section>
        </component>
        <component>
         <section>
           <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.6'/>
2280       <!-- Required Problems Section content -->
         </section>
        </component>
        <component>
         <section>
2285       <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>
2290     <section>
           <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2'/>
           <!-- Required Antepartum Visit Summary Flowsheet Section content -->
         </section>
        </component>
2295    </strucuredBody></component>
     </ClinicalDocument>
```

Figure 6.3-4 Sample Antepartum Summary Document

_____

6.3.1.4.6 Schematron

```
2300    <pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.11.2'>
         <rule context='*[cda: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 can only be used on Clinical Documents.
           </assert>
2305       <!-- Verify that the parent templateId is also present. -->
           <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.2"]'>
             Error: The parent template identifier for Antepartum Summary is not present.
           </assert>
           <!-- Verify the document type code -->
2310       <assert test='cda:code[@code = "{{{LOINC}}}"]'>
             Error: The document type code of a Antepartum Summary must be {{{LOINC}}}
           </assert>
           <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
             Error: The document type code must come from the LOINC code
2315         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(n) Antepartum Summary must contain Allergies.
2320         See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.11.2
           </assert>
           <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.34"]'>
             <!-- Verify that all required data elements are present -->
             Error: A(n) Antepartum Summary must contain Advance Directives.
2325         See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.11.2
           </assert>
           <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.31"]'>
             <!-- Verify that all required data elements are present -->
             Error: A(n) Antepartum Summary must contain Plan of Care.
2330         See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.11.2
           </assert>
           <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.19"]'>
             <!-- Verify that all required data elements are present -->
             Error: A(n) Antepartum Summary must contain Medications.
2335         See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.11.2
           </assert>
           <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.6"]'>
             <!-- Verify that all required data elements are present -->
             Error: A(n) Antepartum Summary must contain Problems.
2340         See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.11.2
           </assert>
           <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.1"]'>
             <!-- Verify that all required data elements are present -->
             Error: A(n) Antepartum Summary must contain Estimated Delivery Dates.
2345         See http://wiki.ihe.net/index.php?title=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(n) Antepartum Summary must contain Antepartum Visit Summary Flowsheet.
2350         See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.11.2
           </assert>
           <assert test="cda:entry/cda:observation/cda:value[@code='300916003']">
             Antepartum Summary Requires an observation of Latex Allergy to be
             asserted.  This may be negated via the negationInd attribute.
2355       </assert>
           <assert test="cda:entry/cda:observation/cda: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>
2360       <assert test="cda:entry/cda:observation/cda: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>
2365    </pattern>
```

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_____

6.3.1.5 Antepartum History and Physical Specification
1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1

The Antepartum History and Physical contains a record of the History and Physical usually performed during the initial visit.

2370 **6.3.1.5.1 Format Code**

The XDSDocumentEntry format code for this content is **urn:ihe:pcc:apr:handp:2008**

6.3.1.5.2 LOINC Code

The LOINC code for this document is **34117-2** HISTORY AND PHYSICAL

6.3.1.5.3 Standards

CDAR2	HL7 CDA Release 2.0
CCD	ASTM/HL7 Continuity of Care Document
CDTHP	CDA for Common Document Types History and Physical Notes (DSTU)

2375 **6.3.1.5.4 Data Element Index**

Data Element	CDA Section	Comments
Header	Header	
Chief Complaint	Chief Complaint	
Pregnancy History	Pregnancy History	Summary (Gravida Para Abortus) and detailed history of pregnancies
Medical History	History of Past Illness	Exclude social and family history (included in other sections)
Medical History - Tobacco, Alcohol, Drugs	Social History	
Medical History - Relevant Family History	Family History	
Medications	Medications	
Allergies	Allergies and Other Adverse Reactions Section	
Menstrual History/Symptoms Since LMP	Review of Systems	
Genetic Screening/Teratology Counseling	Family History	

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Infection History	History of Infection	
Initial Physical Examination	Physical Examination	
Vital Signs	Vital Signs	subsection of Physical Examination
Diagnostic Findings	This section is required by CDA4CDT H&P - The requirement of the APR specification is to have the antepartum specific laboratory results in the APR Laboratory document. However, this type of data may also be included here.	

6.3.1.5.5 Specification

Data Element Name	Opt	Template ID
Spouse	R	1.3.6.1.4.1.19376.1.5.3.1.2.4.1
Natural Father of Fetus	R	1.3.6.1.4.1.19376.1.5.3.1.2.4.2
Enthnicity The enthnicity of the patient should be recorded	R2	
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
History of Past Illness This section is the same as it is for History and Physical, however it SHALL contain entries and SHOULD use codes as specified in the Antepartum History and Physical History of Past Illness Value Set. A negative diagnosis SHALL be recorded with the use of the negation indicator attribute. If the data is not present or not available within the system no entry is required.	R	1.3.6.1.4.1.19376.1.5.3.1.3.8
Pregnancy History This section SHALL use the existing Pregnancy History Section and follow all constraints as specified therein.	R	1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4
Social History This section is the same as it is for History & Physical, however it SHALL contain coded entries and SHOULD use the codes specified in the Antepartum Social History Value Set. If the data is not present or not available within the system no entries are required.	R	1.3.6.1.4.1.19376.1.5.3.1.3.16
Coded Family Medical History This section is the same as it is for History & Physical, however it SHALL contain Genetic Screening and Teratology Counseling information as specified in the Antepartum Family History and Genetic Screening Value Set. If the data is not present or not available within the system no entries are required.	R	1.3.6.1.4.1.19376.1.5.3.1.3.15
Review of Systems This section is the same as it is for History & Physical, however it SHALL include organizers for Menstrual History and MAY include entries for general review of systems data. The Menstrual History entries SHOULD use the codes specified in the Antepartum Menstrual History Value Set. The section code value for the Menstrual History organizer SHALL be '49033-4'. The codeSystem is '2.16.840.1.113883.6.1'. The codeSystemName is 'LOINC'.	R	1.3.6.1.4.1.19376.1.5.3.1.3.18

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Physical Examination This section is the same as it is for History & Physical, and if Vital Signs data are present it SHALL include a Vital Signs subsection.	R	1.3.6.1.4.1.19376.1.5.3.1.1.9.15
Vital Signs If Vital Signs data are present they SHALL be included as a subsection of Physical Examination.	C	1.3.6.1.4.1.19376.1.5.3.1.3.25

Table 6.3.1-3

6.3.1.5.6 Conformance

2380

2385

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 History and Physical 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='1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1'/>
  <id root=' ' extension=' '/>
  <code code='34117-2' displayName='HISTORY AND PHYSICAL'
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Antepartum History and Physical</title>
  <effectiveTime value='20080601012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
  <languageCode code='en-US'/>
     :
  <component><structuredBody>
    <component>
      <section>
        <templateId root='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='1.3.6.1.4.1.19376.1.5.3.1.3.8'/>
        <!-- Required History of Past Illness Section content -->
      </section>
    </component>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.16.2.1.1'/>
        <!-- Required History of Infection Section content -->
      </section>
    </component>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4'/>
        <!-- Required Pregnancy 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='1.3.6.1.4.1.19376.1.5.3.1.3.15'/>
        <!-- Required Coded Family Medical History Section content -->
      </section>
    </component>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.18'/>
        <!-- Required 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 Examination Section content -->
      </section>
    </component>
    <component>
      <section>
```

```
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.25'/>
        <!-- Conditional Vital Signs Section content -->
      </section>
    </component>
  </strucuredBody></component>
</ClinicalDocument>
```

2460

Figure 6.3-5 Sample Antepartum History and Physical Document

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6.3.1.5.7 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The Antepartum History and Physical can only be used on Clinical Documents.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.16.1.4"]'>
     Error: The parent template identifier for Antepartum History and Physical is not
present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='cda:code[@code = "34117-2"]'>
     Error: The document type code of a Antepartum History and Physical must be 34117-2
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The document type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.2.4.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: A(n) Antepartum History and Physical must contain Spouse.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.2.4.2"]'>
     <!-- Verify that all required data elements are present -->
     Error: A(n) Antepartum History and Physical must contain Natural Father of Fetus.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1
   </assert>
   <assert test='.//cda:templateId[@root = ""]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A(n) Antepartum History and Physical should contain Enthnicity.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1
   </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(n) Antepartum History and Physical must contain Chief Complaint.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1
   </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(n) Antepartum History and Physical must contain History of Present Illness.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1
   </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(n) Antepartum History and Physical must contain History of Past Illness.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.16.2.1.1"]'>
     <!-- Verify that all required data elements are present -->
     Error: A(n) Antepartum History and Physical must contain History of Infection.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4"]'>
     <!-- Verify that all required data elements are present -->
     Error: A(n) Antepartum History and Physical must contain Pregnancy History.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1
   </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(n) Antepartum History and Physical must contain Social History.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.15"]'>
     <!-- Verify that all required data elements are present -->
     Error: A(n) Antepartum History and Physical must contain Coded Family Medical
History.
```

_____

```
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1
     </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(n) Antepartum History and Physical must contain Review of Systems.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1
     </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(n) Antepartum History and Physical must contain Physical Examination.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1
     </assert>
     <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.25"]'>
       <!-- Manually verify condtional elements -->
       Manual: This Antepartum History and Physical does not contain Vital Signs.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.1
     </assert>
   </rule>
</pattern>
```

6.3.1.6 Antepartum Laboratory Specification 1.3.6.1.4.1.19376.1.5.3.1.1.16.1.2

6.3.1.6.1 The Antepartum Laboratory document SHALL follow all constraints as defined in the XD-LAB profile, as described in LAB TF-3:4. There is a suggested code list provided in the APR Laboratory Value Set. Due to the variation possible in these laboratory results and the potential for new codes representing new types of laboratory data a tightly constrained code list is not provided.Format Code

The XDSDocumentEntry format code for this content is **urn:ihe:pcc:apr:lab:2008**

6.3.1.6.2 LOINC Code

The LOINC code for this document is **26436-6** Laboratory Studies

6.3.1.6.3 Standards

CDAR2   HL7 CDA Release 2.0

6.3.1.6.4 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 XD Lab Report 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='1.3.6.1.4.1.19376.1.3.3'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.16.1.2'/>
  <id root=' ' extension=' '/>
  <code code='26436-6' displayName='Laboratory Studies'
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Antepartum Laboratory</title>
  <effectiveTime value='20080601012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
  <languageCode code='en-US'/>
     :
  <component><structuredBody>

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

Figure 6.3-6 Sample Antepartum Laboratory Document

6.3.1.6.5 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.16.1.2'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.16.1.2"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The Antepartum Laboratory can only be used on Clinical Documents.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.3.3"]'>
     Error: The parent template identifier for Antepartum Laboratory is not present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='cda:code[@code = "26436-6"]'>
     Error: The document type code of a Antepartum Laboratory must be 26436-6
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The document type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.3.1.7 Antepartum Education Specification
1.3.6.1.4.1.19376.1.5.3.1.1.16.1.3

The Antepartum Education document contains a list of patient education activities that
have occured, or have been planned to review with the patient.

6.3.1.7.1 Format Code

The XDSDocumentEntry format code for this content is **urn:ihe:pcc:apr:edu:2008**

6.3.1.7.2 LOINC Code

The LOINC code for this document is **34895-3** EDUCATION NOTE

6.3.1.7.3 Standards

CDAR2   HL7 CDA Release 2.0

_____

6.3.1.7.4 Specification

Data Element Name	Opt	Template ID
Coded Patient Education and Consents This section SHALL follow all constraints as listed in the Coded Patient Education and Consents section, and SHOULD use the codes available in the Antepartum Education Code table.	R	1.3.6.1.4.1.19376.1.5.3.1.1.9.39

Table 6.3.1-4

6.3.1.7.5 Conformance

CDA Release 2.0 documents that conform to the requirements of this content module
shall indicate their conformance by the inclusion of the appropriate <templateId>
elements in the header of the document. This is shown in the sample document below. A
CDA Document may conform to more than one template. This content module inherits
from the Medical Documents 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='1.3.6.1.4.1.19376.1.5.3.1.1.16.1.3'/>
  <id root=' ' extension=' '/>
  <code code='34895-3' displayName='EDUCATION NOTE'
    codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
  <title>Antepartum Education</title>
  <effectiveTime value='20080601012005'/>
  <confidentialityCode code='N' displayName='Normal'
    codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
  <languageCode code='en-US'/>
     :
  <component><structuredBody>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.39'/>
        <!-- Required Coded Patient Education and Consents Section content -->
      </section>
    </component>


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

Figure 6.3-7 Sample Antepartum Education Document

2625

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2645

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_____

6.3.1.7.6 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.16.1.3'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.16.1.3"]'>
   <!-- Verify that the template id is used on the appropriate type of object -->
   <assert test='../cda:ClinicalDocument'>
     Error: The Antepartum Education can only be used on Clinical Documents.
   </assert>
   <!-- Verify that the parent templateId is also present. -->
   <assert test='cda:templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.1"]'>
     Error: The parent template identifier for Antepartum Education is not present.
   </assert>
   <!-- Verify the document type code -->
   <assert test='cda:code[@code = "34895-3"]'>
     Error: The document type code of a Antepartum Education must be 34895-3
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The document type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.39"]'>
     <!-- Verify that all required data elements are present -->
     Error: A(n) Antepartum Education must contain Coded Patient Education and Consents.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.16.1.3
   </assert>
 </rule>
</pattern>
```

6.3.2 CDA Header Content Modules

6.3.2.1 Patient Contacts 1.3.6.1.4.1.19376.1.5.3.1.2.4

Patient contacts are recorded as described in HL7 CCD: 3.3

6.3.2.1.1 Specification

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

Figure 6.3-8 Guardians Example

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

Figure 6.3-9 Other Patient Contacts Example

_____

_____

2710 **6.3.2.1.2 <guardian classCode='GUARD'>**

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

6.3.2.1.3 <participant typeCode='IND'>

Other contacts are recorded as <participant> elements appearing in the document header.
2715 The classCode attribute shall be set to 'IND'.

6.3.2.1.4 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.4'/>

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

6.3.2.1.5 <time value=' '>

2720 The <time> element may be present and indicates the time of the participation.

**6.3.2.1.6 <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,
2725 or PRS to identify contacts that are agents of the patient, care givers, emergency contacts,
next of kin, or other relations respectively.

**6.3.2.1.7 <code code=' ' displayName=' '
codeSystem='2.16.840.1.113883.5.111'
codeSystemName='RoleCode'/>**

2730 The relationship between the patient and the guardian or other contact should be recorded
in the <code> element. The code attribute is required and comes from the HL7
PersonalRelationshipRoleType vocabulary. The codeSystem attribute is required and
shall be represented exactly as shown above.

6.3.2.1.8 <addr>

2735 The address of the guardian or other contact should be present, and shall be represented
as any other address would be in CDA.

6.3.2.1.9 <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.

2740 **6.3.2.1.10<guardianPerson><name/> or <assignedPerson><name/>**

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

_____

_____

6.3.2.2 Spouse 1.3.6.1.4.1.19376.1.5.3.1.2.4.1

2745
The spouse header element records the spouse of a patient, and inherits other constraints from the Patient Contacts entry. Items in bold in the example below show the additional constraints on this element.

This element SHALL be included as a participant in the header of the CDA document in the event of the pregnancy. If this does not apply to the patient this element SHALL use a null flavor.

2750
6.3.2.2.1 Parent Template

The parent of this template is Patient Contacts.

6.3.2.2.2 Specification

2755

2760
```
<participant typeCode='IND'>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.4'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.4.1'/>
 <time value='20070213'/>
 <associatedEntity classCode='PRS'>
   <code code='xx-spouse|184142008' displayName=' ' codeSystem='2.16.840.1.113883.6.96'
codeSystemName='SNOMED CT'/>
   <addr></addr>
   <telecom value=' ' use=' '/>
   <assignedPerson><name></name></assignedPerson>
 </associatedEntity>
</participant>
```

2765
6.3.2.2.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.4'/><templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.4.1'/>

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

2770
```
<rule context='hl7:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.2.4.1"]'>
  <assert test='hl7:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.2.4"'>
    A participant using template 1.3.6.1.4.1.19376.1.5.3.1.2.4.1 must also use template
1.3.6.1.4.1.19376.1.5.3.1.2.4.
  </assert>
</rule>
```

2775
6.3.2.2.4 <associatedEntity classCode='PRS'>

The classCode attribute of the <associatedEntity> element shall be PRS.

2780
```
<rule context='hl7:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.2.4.1"]'>
  <assert test='../hl7:associatedEntity/@classCode = "PRS"'>
    The classCode attribute of the associated entity shall be PRS.
  </assert>
</rule>
```

6.3.2.2.5 <code code='xx-spouse|184142008' displayName=' ' codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'/>

2785
This element SHALL use xx-spouse (requested) to represent the patient's spouse or 184142008 to represent the patient's next of kin. The code system name is SNOMED CT.

_____

_____

6.3.2.2.6 Completed Example

```
<!-- Husband/Domestic Partner -->
<participant typeCode="IND">
  <associatedEntity classCode="NOK">
    <code code="184142008" displayName="patient's next of kin"
      codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"/>
    <addr>
      <streetAddressLine>45 Chunn Dr.</streetAddressLine>
      <city>Spring Hill</city>
      <state>TN</state>
      <postalCode>37174</postalCode>
      <country>USA</country>
    </addr>
    <telecom value="tel:(999)555-1212" use="WP"/>
    <associatedPerson>
      <name>
        <prefix>Mr.</prefix>
        <given>John</given>
        <family>Youngston</family>
      </name>
    </associatedPerson>
  </associatedEntity>
</participant>
```

6.3.2.3 Natural Father of Fetus 1.3.6.1.4.1.19376.1.5.3.1.2.4.2

This header element records the natural father of the fetus, and inherits other constraints from the Patient Contacts entry. Items in bold in the example below show the additional constraints on this element.

This element SHALL be included as a participant in the header of the CDA document in the event of the pregnancy. If the father of the baby is unknown this element SHALL use a null flavor.

6.3.2.3.1 Parent Template

The parent of this template is Patient Contacts.

6.3.2.3.2 Specification

```
<participant typeCode='IND'>
<templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.4'/>
<templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.4.1'/>
<time value='20070213'/>
<associatedEntity classCode='PRS'>
  <code code='xx-fatherofbaby' displayName=' ' codeSystem='2.16.840.1.113883.6.96'
codeSystemName='SNOMED CT'/>
  <addr></addr>
  <telecom value=' ' use=' '/>
  <assignedPerson><name></name></assignedPerson>
</associatedEntity>
</participant>
```

6.3.2.3.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.4'/><templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.4.2'/>

The <templateId> element identifies this person as the natural father and must be recorded exactly as shown above.

_____

```
<rule context='hl7:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.2.4.2"]'>
  <assert test='hl7:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.2.4"'>
    A participant using template 1.3.6.1.4.1.19376.1.5.3.1.2.4.2 must also use template
1.3.6.1.4.1.19376.1.5.3.1.2.4.
  </assert>
</rule>
```

2840

6.3.2.3.4 <associatedEntity classCode='PRS'>

The classCode attribute of the <associatedEntity> element shall be PRS.

```
<rule context='hl7:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.2.4.2"]'>
  <assert test='../hl7:associatedEntity/@classCode = "PRS"'>
    The classCode attribute of the associated entity shall be PRS.
  </assert>
</rule>
```

2845

6.3.2.3.5 <code code='xx-fatherofbaby' displayName=' ' codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'/>

2850

For father of baby the code SHALL be xx-fatherofbaby (requested). The code system name is SNOMED CT

6.3.2.3.6 Completed Example

2855

```
<!-- Father of baby -->
<participant typeCode="IND">
  <associatedEntity classCode="NOK">
    <code code="xx-fatherofbaby" displayName="Father of Baby"
      codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"/>
    <addr>
      <streetAddressLine>18 Oak Valley Dr.</streetAddressLine>
      <city>Monteagle</city>
      <state>TN</state>
      <postalCode>37205</postalCode>
      <country>USA</country>
    </addr>
    <telecom value="tel:(999)555-1212" use="WP"/>
    <associatedPerson>
      <name>
        <prefix>Mr.</prefix>
        <given>Thomas</given>
        <family>Caster</family>
      </name>
    </associatedPerson>
  </associatedEntity>
</participant>
```

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6.3.3 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

2880 in the Patient Care Coordination Technical Framework. All sections shall have a narrative component that may be freely formatted into normal text, lists, tables, or other appropriate human-readable presentations. Additional subsections or entry content modules may be required.

_____

6.3.3.1 Reasons for Care

2885 The sections described below describe various reasons why healthcare is being provided to the patient.

6.3.3.1.1 Chief Complaint Section

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

2890
2895
```
<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>
```

2900 **Figure 6.3-10 Sample Chief Complaint Section**

6.3.3.1.1.1 Schematron

2905
2910
2915
```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.13.2.1"]'>
    <!-- Verify that the template id is used on the appropriate type of object -->
    <assert test='../cda:section'>
      Error: The Chief Complaint can only be used on sections.
    </assert>
    <!-- Verify the section type code -->
    <assert test='cda:code[@code = "10154-3"]'>
      Error: The section type code of a Chief Complaint must be 10154-3
    </assert>
    <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
      Error: The section type code must come from the LOINC code
      system (2.16.840.1.113883.6.1).
    </assert>
 </rule>
</pattern>
```

6.3.3.2 Other Condition Histories

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

2920 ### 6.3.3.2.1 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 6.3-11 Sample History of Present Illness Section

6.3.3.2.1.1 Schematron

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

_____

6.3.3.2.2 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

6.3.3.2.2.1 Parent Template

The parent of this template is CCD 3.5.

```
2955   <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=' '/>
2960       <code code='11450-4' displayName='PROBLEM LIST'
             codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
           <text>
             Text as described above
           </text>
2965       <entry>
                :
             <!-- Required Problem Concern Entry element -->
               <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.2'/>
                :
2970       </entry>

         </section>
       </component>
```

Figure 6.3-12 Sample Active Problems Section

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2975 **6.3.3.2.2.2 Schematron**

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

6.3.3.2.3 History of Past Illness Section

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

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

Figure 6.3-13 Sample History of Past Illness Section

_____

_____

6.3.3.2.3.1 Schematron

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

6.3.3.2.4 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

6.3.3.2.4.1 Parent Template

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

_____

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

       </section>
     </component>
```

Figure 6.3-14 Sample Allergies and Other Adverse Reactions Section

6.3.3.2.4.2 Schematron

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

6.3.3.2.5 Family Medical History Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.14	
Parent Template	CCD 3.6 (2.16.840.1.113883.10.20.1.4)	
General Description	The family history section shall contain a narrative description of the genetic family members, to the extent that they are known, the diseases they suffered from, their ages at death, and other relevant genetic information.	
LOINC Code	**Opt**	**Description**
10157-6	R	HISTORY OF FAMILY MEMBER DISEASES

_____

6.3.3.2.5.1 Parent Template

The parent of this template is 2.16.840.1.113883.10.20.1.4.

3100
3105
3110

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

  </section>
</component>
```

Figure 6.3-15 Sample Family Medical History Section

6.3.3.2.5.2 Schematron

3115
3120
3125
3130

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

_____

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_____

3135

6.3.3.2.6 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

6.3.3.2.6.1 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>
```

3140

3145

3150

3155

Figure 6.3-16 Sample Coded Family Medical History Section

_____

_____

6.3.3.2.6.2 Schematron

```
3160   <pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.15'>
        <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.15"]'>
          <!-- Verify that the template id is used on the appropriate type of object -->
          <assert test='../cda:section'>
3165       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
3170   present.
          </assert>
          <!-- Verify the section type code -->
          <assert test='cda:code[@code = "10157-6"]'>
            Error: The section type code of a Coded Family Medical History must be 10157-6
          </assert>
3175     <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
            Error: The section type code must come from the LOINC code
            system (2.16.840.1.113883.6.1).
          </assert>
          <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.15"]'>
3180       <!-- Verify that all required data elements are present -->
            Error: A(n) Coded Family Medical History must contain Family History Organizer.
            See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.15
          </assert>
        </rule>
3185   </pattern>
```

6.3.3.2.7 Social History Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.3.16	
Parent Template	CCD 3.7 (2.16.840.1.113883.10.20.1.15)	
General Description	The social history section shall contain a narrative description of the person's beliefs, home life, community life, work life, hobbies, and risky habits.	
LOINC Code	Opt	Description
29762-2	R	SOCIAL HISTORY

_____

_____

6.3.3.2.7.1 Parent Template

The parent of this template is CCD 3.7.

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

  </section>
</component>
```

Figure 6.3-17 Sample Social History Section

6.3.3.2.7.2 Schematron

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

_____

3225 ### 6.3.3.2.8 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

3230

3235

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

  </section>
</component>
```

Figure 6.3-18 Sample Review of Systems Section

3240 ### 6.3.3.2.8.1 Schematron

3245

3250

3255

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

6.3.3.2.9 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

3260
3265
3270
3275

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

  </section>
</component>
```

Figure 6.3-19 Sample Pregnancy History Section

6.3.3.2.9.1 Schematron

3280
3285
3290
3295
3300

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

6.3.3.2.10 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.

```
3305    <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-'
3310          codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
            <text>
              Text as described above
            </text>
            <entry>
3315             :
              <!-- 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>
3320
          </section>
        </component>
```

Figure 6.3-20 Sample Estimated Due Dates Section Section

6.3.3.2.10.1 Schematron

```
3325    <pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.1'>
         <rule context='*[cda: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.
3330       </assert>
           <!-- Verify the section type code -->
           <assert test='cda:code[@code = "(xx-edd-section)"]'>
            Error: The section type code of a Estimated Due Dates Section must be (xx-edd-
        section)
3335       </assert>
           <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
             Error: The section type code must come from the LOINC code
             system (2.16.840.1.113883.6.1).
           </assert>
3340       <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(n) Estimated Due Dates Section must contain Estimated Due Date Observation.
             See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.1
           </assert>
3345     </rule>
        </pattern>
```

6.3.3.3 Medications

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

_____

3350

6.3.3.3.1 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

_____

6.3.3.3.1.1 Parent Template

3355 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>
```

3375 **Figure 6.3-21 Sample Medications Section**

6.3.3.3.1.2 Schematron

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

_____

_____

6.3.3.3.2 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

6.3.3.3.2.1 Parent Template

3405 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>
```

3425 **Figure 6.3-22 Sample Immunizations Section**

_____

_____

6.3.3.3.2.2 Schematron

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

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6.3.3.4 Physical Exams

6.3.3.4.1 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
29545-1	R	PHYSICAL EXAMINATION

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

  </section>
</component>
```

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Figure 6.3-23 Sample Physical Exam Section

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6.3.3.4.1.1 Schematron

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

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6.3.3.4.2 Physical Exam Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.15		
Parent Template	Physical Exam (1.3.6.1.4.1.19376.1.5.3.1.3.24)		
General Description	The physical exam section shall contain only the required and optional subsections performed.		
LOINC Code	**Opt**	**Description**	
29545-1	R	PHYSICAL EXAMINATION	
Subsections	**Opt**	**Description**	
1.3.6.1.4.1.19376.1.5.3.1.3.25	O	Vital Signs Vital signs may be a subsection of the physical exam or they may stand alone	
1.3.6.1.4.1.19376.1.5.3.1.1.9.16	O	General_Appearance	
1.3.6.1.4.1.19376.1.5.3.1.1.9.17	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	Breast	
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	

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1.3.6.1.4.1.19376.1.5.3.1.1.9.34	O	Musculoskeletal System
1.3.6.1.4.1.19376.1.5.3.1.1.9.35	O	Neurologic System
1.3.6.1.4.1.19376.1.5.3.1.1.9.36	O	Genitalia
1.3.6.1.4.1.19376.1.5.3.1.1.9.37	O	Rectum
1.3.6.1.4.1.19376.1.5.3.1.1.16.2.1	O	Extremities

6.3.3.4.2.1 Parent Template

The parent of this template is 1.3.6.1.4.1.19376.1.5.3.1.3.24.

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.24'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.15'/>
    <id root=' ' extension=' '/>
    <code code='29545-1' displayName='PHYSICAL EXAMINATION'
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <text>
      Text as described above
    </text>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.25'/>
        <!-- Optional Vital Signs Section content -->
      </section>
    </component>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.16'/>
        <!-- Optional General Appearance Section content -->
      </section>
    </component>
    <component>
      <section>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.17'/>
        <!-- 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>
3630      </component>
          <component>
            <section>
              <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.16.2.1'/>
              <!-- Optional Extremeties Section content -->
3635      </section>
          </component>
        </section>
      </component>
```

Figure 6.3-24 Sample Physical Exam Section

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3640 **6.3.3.4.2.2 Schematron**

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.15'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.15"]'>
    <!-- Verify that the template id is used on the appropriate type of object -->
    <assert test='../cda:section'>
       Error: The Physical Exam can only be used on sections.
    </assert>
    <!-- Verify that the parent templateId is also present. -->
    <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.3.24"]'>
       Error: The parent template identifier for Physical Exam is not present.
    </assert>
    <!-- Verify the section type code -->
    <assert test='cda:code[@code = "29545-1"]'>
       Error: The section type code of a Physical Exam must be 29545-1
    </assert>
    <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
       Error: The section type code must come from the LOINC code
       system (2.16.840.1.113883.6.1).
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.3.25"]'>
       <!-- Note any missing optional elements -->
       Note: This Physical Exam does not contain Vital Signs.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.16"]'>
       <!-- Note any missing optional elements -->
       Note: This Physical Exam does not contain General Appearance.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.17"]'>
       <!-- Note any missing optional elements -->
       Note: This Physical Exam does not contain Integumentary System.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.18"]'>
       <!-- Note any missing optional elements -->
       Note: This Physical Exam does not contain Head.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.19"]'>
       <!-- Note any missing optional elements -->
       Note: This Physical Exam does not contain Eyes.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.20"]'>
       <!-- Note any missing optional elements -->
       Note: This Physical Exam does not contain Ears, Nose, Mouth and Throat.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.21"]'>
       <!-- Note any missing optional elements -->
       Note: This Physical Exam does not contain Ears.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.22"]'>
       <!-- Note any missing optional elements -->
       Note: This Physical Exam does not contain Nose.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.23"]'>
       <!-- Note any missing optional elements -->
       Note: This Physical Exam does not contain Mouth, Throat, and Teeth.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.9.24"]'>
       <!-- Note any missing optional elements -->
       Note: This Physical Exam does not contain Neck.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
    </assert>
```

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```
3710      <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://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
          </assert>
3715      <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://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
          </assert>
3720      <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://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
          </assert>
3725      <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://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
          </assert>
3730      <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://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
          </assert>
3735      <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://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
          </assert>
3740      <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://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
          </assert>
3745      <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://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
          </assert>
3750      <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://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
          </assert>
3755      <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://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
          </assert>
3760      <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://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
          </assert>
3765      <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://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
          </assert>
3770      <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://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
          </assert>
          <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.1.16.2.1"]'>
3775        <!-- Note any missing optional elements -->
            Note: This Physical Exam does not contain Extremeties.
            See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.15
          </assert>
```

```
        </rule>
3780  </pattern>
```

6.3.3.4.3 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

_____

6.3.3.4.3.1 Parent Template

The parent of this template is CCD 3.12.

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

  </section>
</component>
```

Figure 6.3-25 Sample Vital Signs Section

6.3.3.4.3.2 Schematron

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

6.3.3.4.4 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

6.3.3.4.4.1 Parent Template

The parent of this template is Vital Signs.

_____

```
3825   <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=' '/>
3830       <code code='8716-3' displayName='VITAL SIGNS'
             codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
           <text>
             Text as described above
           </text>
3835       <entry>
               :
             <!-- Required Vital Signs Organizer element -->
               <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.1'/>
               :
3840       </entry>

         </section>
       </component>
```

Figure 6.3-26 Sample Coded Vital Signs Section

3845 **6.3.3.4.4.2 Schematron**

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2"]'>
     <!-- Verify that the template id is used on the appropriate type of object -->
     <assert test='../cda:section'>
3850    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.
3855    </assert>
     <!-- Verify the section type code -->
     <assert test='cda:code[@code = "8716-3"]'>
      Error: The section type code of a Coded Vital Signs must be 8716-3
     </assert>
3860    <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
      Error: The section type code must come from the LOINC code
      system (2.16.840.1.113883.6.1).
     </assert>
     <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.13.1"]'>
3865     <!-- Verify that all required data elements are present -->
      Error: A(n) Coded Vital Signs must contain Vital Signs Organizer.
      See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2
     </assert>
  </rule>
3870 </pattern>
```

6.3.3.4.5 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

```
3875   <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'/>
3880       <text>
             Text as described above
           </text>
         </section>
       </component>
```

3885   **Figure 6.3-27 Sample General Appearance Section**

6.3.3.4.5.1 Schematron

```
       <pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.16'>
        <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.16"]'>
           <!-- Verify that the template id is used on the appropriate type of object -->
3890       <assert test='../cda:section'>
             Error: The General Appearance can only be used on sections.
           </assert>
           <!-- Verify the section type code -->
           <assert test='cda:code[@code = "10210-3"]'>
3895         Error: The section type code of a General Appearance must be 10210-3
           </assert>
           <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
             Error: The section type code must come from the LOINC code
3900         system (2.16.840.1.113883.6.1).
           </assert>
        </rule>
       </pattern>
```

6.3.3.4.6 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

3905

```
       <component>
         <section>
           <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.17'/>
3910       <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
3915       </text>

         </section>
       </component>
```

                 Figure 6.3-28 Sample Integumentary System Section

_____

3920 **6.3.3.4.6.1 Schematron**

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

6.3.3.4.7 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

3940

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

  </section>
</component>
```

Figure 6.3-29 Sample Head Section

6.3.3.4.7.1 Schematron

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

_____

_____

6.3.3.4.8 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

3975
3980
3985

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

  </section>
</component>
```

Figure 6.3-30 Sample Eyes Section

6.3.3.4.8.1 Schematron

3990
3995
4000

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

4005

6.3.3.4.9 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 6.3-31 Sample Ears, Nose, Mouth and Throat Section

6.3.3.4.9.1 Schematron

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

6.3.3.4.10 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 6.3-32 Sample Ears Section

_____

6.3.3.4.10.1 Schematron

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

6.3.3.4.11 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 6.3-33 Sample Nose Section

6.3.3.4.11.1 Schematron

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

_____

_____

6.3.3.4.12 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

4110

```
<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>
```

4115

4120

Figure 6.3-34 Sample Mouth, Throat and Teeth Section

6.3.3.4.12.1 Schematron

4125

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

4130

4135

4140

6.3.3.4.13 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

_____

```
4145   <component>
         <section>
           <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.24'/>
           <id root=' ' extension=' '/>
4150       <code code='11411-6' displayName='NECK'
             codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
           <text>
             Text as described above
           </text>

4155     </section>
       </component>
```

Figure 6.3-35 Sample Neck Section

6.3.3.4.13.1 Schematron

```
       <pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.24'>
4160    <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.24"]'>
           <!-- Verify that the template id is used on the appropriate type of object -->
           <assert test='../cda:section'>
             Error: The Neck can only be used on sections.
4165       </assert>
           <!-- Verify the section type code -->
           <assert test='cda:code[@code = "11411-6"]'>
             Error: The section type code of a Neck must be 11411-6
           </assert>
           <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
4170         Error: The section type code must come from the LOINC code
             system (2.16.840.1.113883.6.1).
           </assert>
        </rule>
       </pattern>
```

4175

6.3.3.4.14 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>
4180     <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'/>
4185       <text>
             Text as described above
           </text>

         </section>
4190   </component>
```

Figure 6.3-36 Sample Endocrine System Section

_____

6.3.3.4.14.1 Schematron

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

6.3.3.4.15 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 6.3-37 Sample Thorax and Lungs Section

6.3.3.4.15.1 Schematron

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

_____

_____

6.3.3.4.16 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

4245

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

  </section>
</component>
```

Figure 6.3-38 Sample Chest Wall Section

4260   ### 6.3.3.4.16.1 Schematron

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

6.3.3.4.17 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

4280

_____

```
      <component>
        <section>
          <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.28'/>
          <id root=' ' extension=' '/>
4285      <code code='10193-1' displayName='BREASTS'
            codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
          <text>
            Text as described above
          </text>
4290
        </section>
      </component>
```

Figure 6.3-39 Sample Breast Section

6.3.3.4.17.1 Schematron

```
4295  <pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.28'>
       <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.28"]'>
          <!-- Verify that the template id is used on the appropriate type of object -->
          <assert test='../cda:section'>
            Error: The Breast can only be used on sections.
4300      </assert>
          <!-- Verify the section type code -->
          <assert test='cda:code[@code = "10193-1"]'>
            Error: The section type code of a Breast must be 10193-1
          </assert>
4305      <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
            Error: The section type code must come from the LOINC code
            system (2.16.840.1.113883.6.1).
          </assert>
       </rule>
4310  </pattern>
```

6.3.3.4.18 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

```
4315  <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'
4320        codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
          <text>
            Text as described above
          </text>

        </section>
4325  </component>
```

Figure 6.3-40 Sample Heart Section

_____

6.3.3.4.18.1 Schematron

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

6.3.3.4.19 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 6.3-41 Sample Respiratory System Section

6.3.3.4.19.1 Schematron

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

_____

_____

6.3.3.4.20 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

4380

```
<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>
```

4385

4390

Figure 6.3-42 Sample Abdomen Section

6.3.3.4.20.1 Schematron

4395

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

4400

4405

4410

6.3.3.4.21 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 6.3-43 Sample Lymphatic System Section

6.3.3.4.21.1 Schematron

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

6.3.3.4.22 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 6.3-44 Sample Vessels Section

_____

6.3.3.4.22.1 Schematron

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

6.3.3.4.23 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 6.3-45 Sample Musculoskeletal System Section

6.3.3.4.23.1 Schematron

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

6.3.3.4.24 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

4505

```
<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>
```

4510

4515

Figure 6.3-46 Sample Neurologic System Section

6.3.3.4.24.1 Schematron

4520

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

4525

4530

4535 ### 6.3.3.4.25 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>
```

4540

4545

Figure 6.3-47 Sample Genitalia Section

_____

6.3.3.4.25.1 Schematron

```
4550    <pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.36'>
         <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.36"]'>
            <!-- Verify that the template id is used on the appropriate type of object -->
            <assert test='../cda:section'>
             Error: The Genitalia can only be used on sections.
4555        </assert>
            <!-- Verify the section type code -->
            <assert test='cda:code[@code = "11400-9"]'>
             Error: The section type code of a Genitalia must be 11400-9
            </assert>
4560        <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
             Error: The section type code must come from the LOINC code
             system (2.16.840.1.113883.6.1).
            </assert>
         </rule>
4565    </pattern>
```

6.3.3.4.26 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

```
4570    <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'
4575          codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
            <text>
             Text as described above
            </text>
          </section>
        </component>
```

4580   **Figure 6.3-48 Sample Rectum Section**

6.3.3.4.26.1 Schematron

```
        <pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.37'>
         <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.37"]'>
4585        <!-- Verify that the template id is used on the appropriate type of object -->
            <assert test='../cda:section'>
             Error: The Rectum can only be used on sections.
            </assert>
            <!-- Verify the section type code -->
            <assert test='cda:code[@code = "10205-3"]'>
4590         Error: The section type code of a Rectum must be 10205-3
            </assert>
            <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
             Error: The section type code must come from the LOINC code
             system (2.16.840.1.113883.6.1).
4595        </assert>
         </rule>
        </pattern>
```

6.3.3.4.27 Extremities Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.16.2.1

_____

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

4600

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

4605

4610

Figure 6.3-49 Sample Extremities Section

6.3.3.4.27.1 Schematron

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

4615

4620

4625

6.3.3.5 Relevant Studies

4630

6.3.3.5.1 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 6.3-50 Sample Results Section

6.3.3.5.1.1 Schematron

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

6.3.3.5.2 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	External References	
1.3.6.1.4.1.19376.1.5.3.1.4.13	O	Simple Observation	

```
      <component>
        <section>
          <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.28'/>
          <id root=' ' extension=' '/>
4670      <code code='30954-2' displayName='STUDIES SUMMARY'
            codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
          <text>
            Text as described above
          </text>
4675      <entry>
               :
            <!-- Required Procedure Entry element -->
              <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.16'/>
               :
4680      </entry>
          <entry>
               :
            <!-- Required if known References Entry element -->
              <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4'/>
4685         :
          </entry>
          <entry>
               :
            <!-- Optional Simple Observation element -->
4690          <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
               :
          </entry>
        </section>
      </component>
```

4695   **Figure 6.3-51 Sample Coded Results Section**

_____

6.3.3.5.2.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.28'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.28"]'>
    <!-- Verify that the template id is used on the appropriate type of object -->
    <assert test='../cda:section'>
     Error: The Coded Results can only be used on sections.
    </assert>
    <!-- Verify the section type code -->
    <assert test='cda:code[@code = "30954-2"]'>
     Error: The section type code of a Coded Results must be 30954-2
    </assert>
    <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.16"]'>
     <!-- Verify that all required data elements are present -->
     Error: A(n) Coded Results must contain Procedure Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.28
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.4"]'>
     <!-- Alert on any missing required if known elements -->
     Warning: A(n) Coded Results should contain References Entry.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.28
    </assert>
    <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.13"]'>
     <!-- Note any missing optional elements -->
     Note: This Coded Results does not contain Simple Observation.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.28
    </assert>
 </rule>
</pattern>
```

6.3.3.6 Plans of Care

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

6.3.3.6.1 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 6.3-52 Sample Care Plan Section

_____

_____

6.3.3.6.1.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.31'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.31"]'>
    <!-- Verify that the template id is used on the appropriate type of object -->
    <assert test='../cda:section'>
      Error: The Care Plan can only be used on sections.
    </assert>
    <!-- Verify the section type code -->
    <assert test='cda:code[@code = "18776-5"]'>
      Error: The section type code of a Care Plan must be 18776-5
    </assert>
    <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
      Error: The section type code must come from the LOINC code
      system (2.16.840.1.113883.6.1).
    </assert>
 </rule>
</pattern>
```

6.3.3.6.2 Care Plan Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.13.2.5
General Description	The assessment and plan section shall contain a narrative description of the assessment of the patient condition and expectations for care including proposals, goals, and order requests for monitoring, tracking, or improving the condition of the patient.

LOINC Code	Opt	Description
X-AANDP	R	ASSESSMENT AND PLAN

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

Figure 6.3-53 Sample Care Plan Section

_____

_____

6.3.3.6.2.1 Schematron

```
4780    <pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.13.2.5'>
         <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.13.2.5"]'>
            <!-- Verify that the template id is used on the appropriate type of object -->
           <assert test='../cda:section'>
             Error: The Care Plan can only be used on sections.
           </assert>
4785       <!-- Verify the section type code -->
           <assert test='cda:code[@code = "X-AANDP"]'>
             Error: The section type code of a Care Plan must be X-AANDP
           </assert>
           <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
4790         Error: The section type code must come from the LOINC code
             system (2.16.840.1.113883.6.1).
           </assert>
         </rule>
        </pattern>
```

4795 6.3.3.6.3 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

_____

_____

6.3.3.6.3.1Parent 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

```
4800  <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=' '/>
4805      <code code='42348-3' displayName='ADVANCE DIRECTIVES'
            codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
          <text>
            Text as described above
          </text>
4810
        </section>
      </component>
```

Figure 6.3-54 Sample Advance Directives Section

6.3.3.6.3.2 Schematron

```
4815  <pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.34'>
       <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.34"]'>
          <!-- Verify that the template id is used on the appropriate type of object -->
          <assert test='../cda:section'>
            Error: The Advance Directives can only be used on sections.
4820      </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>
4825      <!-- Verify the section type code -->
          <assert test='cda:code[@code = "42348-3"]'>
            Error: The section type code of a Advance Directives must be 42348-3
          </assert>
          <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
4830        Error: The section type code must come from the LOINC code
            system (2.16.840.1.113883.6.1).
          </assert>
       </rule>
      </pattern>
```

_____

_____

4835 ### 6.3.3.6.4 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

6.3.3.6.4.1 Parent Template

The parent of this template is Advance Directives.

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

  </section>
</component>
```

Figure 6.3-55 Sample Coded Advance Directives Section

_____

_____

6.3.3.6.4.2Schematron

```
4860   <pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.3.35'>
        <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.3.35"]'>
          <!-- Verify that the template id is used on the appropriate type of object -->
          <assert test='../cda:section'>
            Error: The Coded Advance Directives can only be used on sections.
4865      </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>
4870      <!-- Verify the section type code -->
          <assert test='cda:code[@code = "42348-3"]'>
            Error: The section type code of a Coded Advance Directives must be 42348-3
          </assert>
          <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
4875        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 -->
4880        Warning: A(n) Coded Advance Directives should contain Advance Directive Observation.
            See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.3.35
          </assert>
        </rule>
      </pattern>
```

6.3.3.7 Procedures Performed

6.3.3.7.1 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

```
4890   <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'
4895         codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
           <text>
             Text as described above
           </text>

4900     </section>
       </component>
```

Figure 6.3-56 Sample Patient Education and Consents Section

_____

_____

6.3.3.7.1.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.38'>
 <rule context='*[cda: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='cda:code[@code = "34895-3"]'>
     Error: The section type code of a Patient Education and Consents must be 34895-3
   </assert>
   <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
 </rule>
</pattern>
```

6.3.3.7.2 Patient Education and Consents Section

Template ID	1.3.6.1.4.1.19376.1.5.3.1.1.9.39	
Parent Template	Patient Education and Consents Section (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 references to the consents the patient signed. It shall include entries for procedures and references to consent documents as described in the Entry Content Modules.	
LOINC Code	Opt	Description
34895-3	R	EDUCATION NOTE
Entries	Opt	Description
1.3.6.1.4.1.19376.1.5.3.1.4.19	R	Procedure Entry The procedures shall be in INT mood
1.3.6.1.4.1.19376.1.5.3.1.4.13	R2	Simple Observations
1.3.6.1.4.1.19376.1.5.3.1.4.4	R2	External References

6.3.3.7.2.1 Parent Template

The parent of this template is 1.3.6.1.4.1.19376.1.5.3.1.1.9.38.

_____

```
<component>
  <section>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.38'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.9.39'/>
    <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>
    <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 Simple Observations element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
        :
    </entry>
    <entry>
        :
      <!-- Required if known External References element -->
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4'/>
        :
    </entry>

  </section>
</component>
```

Figure 6.3-57 Sample Patient Education and Consents Section

_____

4955 **6.3.3.7.2.2 Schematron**

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.9.39'>
 <rule context='*[cda:templateId/@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.39"]'>
     <!-- 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 that the parent templateId is also present. -->
     <assert test='templateId[@root="1.3.6.1.4.1.19376.1.5.3.1.1.9.38"]'>
       Error: The parent template identifier for Patient Education and Consents is not
present.
     </assert>
     <!-- Verify the section type code -->
     <assert test='cda:code[@code = "34895-3"]'>
       Error: The section type code of a Patient Education and Consents must be 34895-3
     </assert>
     <assert test='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
       Error: The section type code must come from the LOINC code
       system (2.16.840.1.113883.6.1).
     </assert>
     <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.19"]'>
       <!-- Verify that all required data elements are present -->
       Error: A(n) Patient Education and Consents must contain Procedure Entry.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.39
     </assert>
     <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.13"]'>
       <!-- Alert on any missing required if known elements -->
       Warning: A(n) Patient Education and Consents should contain Simple Observations.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.39
     </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(n) Patient Education and Consents should contain External References.
       See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.9.39
     </assert>
 </rule>
</pattern>
```

6.3.3.8 Impressions

6.3.3.8.1 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	Antepartum Flowsheet Panel Other entries on the flowsheet are "batteries" which represent a single visit.

4995

_____

IHE PCC Technical Framework Supplement – Antepartum Record (APR)

```
<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 Antepartum 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 6.3-58 Sample Visit Summary Section

_____

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_____

6.3.3.8.1.1 Schematron

```
<pattern name='Template_1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2'>
 <rule context='*[cda: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='cda: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='cda:code[@codeSystem = "2.16.840.1.113883.6.1"]'>
     Error: The section type code must come from the LOINC code
     system (2.16.840.1.113883.6.1).
   </assert>
   <assert test='.//cda:templateId[@root = "1.3.6.1.4.1.19376.1.5.3.1.4.13"]'>
     <!-- Verify that all required data elements are present -->
     Error: A(n) Visit Summary must contain Simple Observation.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2
   </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(n) Visit Summary must contain Antepartum Flowsheet Panel.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2
   </assert>
   <assert test='.//cda:observation/cda:code[@code="8348-5"]'>
     Error: The Visit Summary must have at least one simple observation with the LOINC
     code 8348-5 to represent the prepregnancy weight.
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2
   </assert>
   <assert test='.//cda:observation[cda:code/@code='8348-5']/cda:value[@unit='kg' or
@unit='lb_av']'>
     Error: The prepregnancy weight shall record the units in kg or lbs
     See http://wiki.ihe.net/index.php?title=1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2
   </assert>
 </rule>
</pattern>
```

6.3.4 CDA and HL7 Version 3 Entry Content Modules

6.3.4.1 Authors and Informants

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

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

6.3.4.1.1 <author>

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

6.3.4.1.2 <time value=' '/>

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

_____

_____

6.3.4.1.3 <assignedAuthor> -OR- <assignedEntity1>
<id root=' ' extension=' '>
5075 ####   <addr></addr>
<telecom value=' ' use=' '>

In a CDA document details about the author are provided in the <assignedAuthor>
element. In Version 3 messages, they are provided in the <assignedEntity1> element. The
semantics are identical even though the element names differ. The identifier of the
5080 author, and their address and telephone number shall be present inside the <id>, <addr>
and <telecom> elements.

6.3.4.1.4 <assignedPerson><name></name></assignedPerson>
<representedOrganization><name></name></representedOrganiza
tion>

5085 The author's and/or the organization's name shall be present when the <author> element
is present.

6.3.4.2 Linking Narrative and Coded Entries

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

5090 ### 6.3.4.2.1 Standards

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

6.3.4.2.2 Constraints for CDA

Elements within the narrative <text> will use the ID attribute to provide a destination for
links. Elements within an <entry> will be linked to the text via a URI reference using this
attribute as the fragment identifier. This links the coded entry to the specific narrative text
5095 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.

5100 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
5105 document. Within an XML document, an attribute of type xs:ID must start with a letter,
and may be followed one or more letters, digits, hyphens or underscores . Three different
examples showing the use of the ID attribute, and references to it appear below:

_____

_____

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

Table 6.3.4-1 Example Uses of ID

5110 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:

5115
```
string(//*[@ID=substring-after('#',$theURI)])
```

_____

_____

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

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

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

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

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

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

6.3.4.2.3 Constraints for HL7 Version 3 Messages

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

6.3.4.3 Severity 1.3.6.1.4.1.19376.1.5.3.1.4.1

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

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

6.3.4.3.1 Standards

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

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6.3.4.3.2 Specification

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


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


   </observation>
```

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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
5165 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
5170 ensures that all EMR systems have equal access to the information, regardless of the
vocabularies they support.

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

The related statement is made about the severity of the condition (or allergy). For CDA,
this observation is recorded inside an <entryRelationship> element occurring in the
5175 condition, allergy or medication entry. The containing <entry> is the subject
(typeCode='SUBJ') of this new observation, which is the inverse of the normal
containment structure, thus inversionInd='true'. For HL7 Version 3 Messages this
relationship is represented with a <sourceOf> element, however the semantics, typeCode,
and inversionInd is unchanged.

5180 6.3.4.3.2.2<observation moodCode='EVN' classCode='OBS'>

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

6.3.4.3.2.3 <templateId root='2.16.840.1.113883.10.20.1.55'/>
5185   <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

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locate and identify severity observations. The templateId elements shown above must be present.

5190 **6.3.4.3.2.4 <code code='SEV' codeSystem='2.16.840.1.113883.5.4' displayName='Severity' codeSystemName='ActCode' />**

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

5195 **6.3.4.3.2.5 <text><reference value='#severity-2'/></text>**

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

5200 **6.3.4.3.2.6 <statusCode code='completed'/>**

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

6.3.4.3.2.7 <value xsi:type='CD' code='H|M|L'
5205 **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
5210 (codeSystem='2.16.840.1.113883.5.1063') containing three values (H, M, and L), representing high, moderate and low severity depending upon whether the severity is life threatening, presents noticeable adverse consequences, or is unlikely substantially effect the situation of the subject.

6.3.4.4 Problem Status Observation 1.3.6.1.4.1.19376.1.5.3.1.4.1.1

5215 Any problem or allergy observation may reference a problem status observation. This structure is included in the target observation using the <entryRelationship> element defined in the CDA Schema. The clinical status observation records information about the current status of the problem or allergy, for example, whether it is active, in remission, resolved, et cetera. The example below shows the recording of clinical status
5220 of a condition or allergy, and is used as the context for the following sections.

6.3.4.4.1 Standards

CCD ASTM/HL7 Continuity of Care Document

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6.3.4.4.2 Specification

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

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

    </observation>
 </entry>
```

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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
5245 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
5250 between EMR systems using different vocabularies, this specification does require that problem status information also be provided in a separate observation. This ensures that all EMR systems have equal access to the information, regardless of the vocabularies they support.

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

5255 The related statement is made about the clinical status of the problem or allergy. For CDA, this observation is recorded inside an <entryRelationship> element occurring in the problem or allergy. For HL7 Version 3 Messages, the <entryRelationship> tag name is <sourceOf>, though the typeCode and inversionInd attributes and other semantics remain the same. The containing observation refers to (typeCode='REFR') this new observation.

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

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

6.3.4.4.5 <templateId root='2.16.840.1.113883.10.20.1.57'/>
5265   **<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.

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6.3.4.4.6 <code code='33999-4' codeSystem='2.16.840.1.113883.6.1'
5270   displayName='Status' codeSystemName='LOINC' />

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

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

5275 The <observation> element shall contain a <text> element that points to the narrative text describing the clinical status. For CDA, the <text> elements shall contain a <reference> element pointing to the narrative section (see Linking Narrative and Coded Entries), rather than duplicate text to avoid ambiguity. For HL7 Version 3 Messages, the <text> element SHALL contain the full narrative text.

6.3.4.4.8 <statusCode code='completed'/>

5280 The code attribute of <statusCode> for all clinical status observations shall be completed. While the <statusCode> element is required in all acts to record the status of the act, the only sensible value of this element in this context is completed.

6.3.4.4.9 <value xsi:type='CE' code=' ' displayName=' '
            codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED
5285   CT'>

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

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

6.3.4.5 Health Status 1.3.6.1.4.1.19376.1.5.3.1.4.1.2

5290 A problem observation may reference a health status observation. This structure is included in the target observation using the <entryRelationship> element defined in the CDA Schema. The health status observation records information about the current health status of the patient. The example below shows the recording the health status, and is used as the context for the following sections.

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5295 **6.3.4.5.1 Specification**

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

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

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

6.3.4.5.2 <entryRelationship typeCode='REFR'>

5320 The related statement is made about the health status of the patient. For CDA, this observation is recorded inside an <entryRelationship> element occurring in the observation. The contained observerversation is referenced (typeCode='REFR') by the observation entry. For HL7 Version 3 Messages, the entryRelationship tagName is sourceOf, though the typeCode and inversionInd attributes and other semantics remain the same.

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

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

6.3.4.5.4 <templateId root='2.16.840.1.113883.10.20.1.57'/>
<templateId root='2.16.840.1.113883.10.20.1.51'/>
5330 ### <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.1.2'/>

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

6.3.4.5.5 <code code='11323-3'
displayName='Health Status'
5335 ### 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.

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5340 **6.3.4.5.6 <text><reference value='#hstatus-2'/></text>**

The <observation> element shall contain a <text> element that contains the narrative text describing the clinical status. For CDA, the <text> elements shall contain a <reference> element pointing to the narrative section (see Linking Narrative and Coded Entries, rather than duplicate text to avoid ambiguity. For HL7 Version 3 Messages, the <text> element
5345 shall contain the full narrative text.

6.3.4.5.7 <statusCode code='completed'/>

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

5350 **6.3.4.5.8 <value xsi:type='CE' code=' ' displayName=' '
codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED
CT'>**

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

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

5355 **6.3.4.6 Comments 1.3.6.1.4.1.19376.1.5.3.1.4.2**

This entry allows for a comment to be supplied with each entry. For CDA this structure is 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. For HL7 Version 3 Messages, this relationship is
5360 represented with the element <sourceOf>, although the remainder of the typecodes and semantics are unchanged.

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

6.3.4.6.1 Standards

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

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6.3.4.6.2 Specification

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

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

  </observation>
</entry>
```

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

5395 Again, a related statement is made about the condition, allergy or medication. In CDA this observation is recorded inside an <entryRelationship> element occurring at the end of the condition or allergy entry. The containing <observation> is the subject (typeCode='SUBJ') of this new observation, which is the inverse of the normal containment structure, thus inversionInd='true'. For HL7 Version 3 Messages, the

5400 relationship element is <sourceOf>, however the typeCode and inversionInd remain the same.

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

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

5405 related entry.

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

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

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5410 **6.3.4.6.6 <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.

5415 **6.3.4.6.7 <text><reference value='#comment-2'/></text>**

The <text> element provides a way to represent the <reference> to the text of the
comment in the narrative portion of the document. For CDA, this SHALL be represented
as a <reference> element that points to the narrative text section of the CDA. The
comment itself is not the act being coded, so it appears in the <text> of the
5420 <observation>, not as part of the <code>. For HL7 Version 3 Messages, the <text>
element SHALL contain the full narrative text.

6.3.4.6.8 <statusCode code='completed' />

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

6.3.4.6.9 <author>

5425 The comment may have an author.

6.3.4.6.10 <time value=' '/>

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

6.3.4.6.11 <assignedAuthor>
5430 **<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.

5435 **6.3.4.6.12 <assignedPerson><name></name></assignedPerson>
<representedOrganization><name></name></representedOrganiza
tion>**

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

5440 **6.3.4.7 Patient Medication Instructions 1.3.6.1.4.1.19376.1.5.3.1.4.3**

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

This structure is included in the target substance administration or supply act using the
<entryRelationship> element defined in the CDA Schema. The example below shows the

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5445 recording of patient medication instruction for an <entry>, and is used as context for the following section.

6.3.4.7.1 Standards

| Pharmacy | HL7 Pharmacy Domain (Normative) |

6.3.4.7.2 Specification

```
<entry>
 <substanceAdministration classCode='SBADM' moodCode='EVN'>

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

 </substanceAdministration>
</entry>
```

5465

6.3.4.7.3 <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
5470 (typeCode='SUBJ') of this new observation, which is the inverse of the normal containment structure, thus inversionInd='true'.

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

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

5475 ### 6.3.4.7.5 <templateId root='2.16.840.1.113883.10.20.1.49'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.3'/>

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

5480 ### 6.3.4.7.6 <code code='PINSTRUCT' codeSystem='1.3.6.1.4.1.19376.1.5.3.2' codeSystemName='IHEActCode' />

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

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

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

5485 The <text> element indicates the text of the comment. For CDA, this SHALL be represented as a <reference> element that points at the narrative portion of the document. The comment itself is not the act being coded, so it appears in the <text> of the <observation>, not as part of the <code>. For HL7 Version 3 Messages, the full text SHALL be represented here.

5490 ### 6.3.4.7.8 <statusCode code='completed' />

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

6.3.4.8 Medication Fulfillment Instructions 1.3.6.1.4.1.19376.1.5.3.1.4.3.1

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

5495 This structure is included in the target substance administration or supply act using the <entryRelationship> element defined in the CDA Schema. The figure below is an example of recording an instruction for an <entry>, and is used as context for the following sections.

6.3.4.8.1 Standards

| **Pharmacy** | HL7 Pharmacy Domain (Normative) |

5500 ### 6.3.4.8.2 Specification

```
<entry>
 <supply classCode='SPLY' moodCode='EVN'>

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

 </supply>
</entry>
```

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

5520 Again, a related statement is made about the medication or immunization. In CDA, this observation is recorded inside an <entryRelationship> element occurring at the end of the substance administration or supply entry. The containing <act> is the subject (typeCode='SUBJ') of this new observation, which is the inverse of the normal containment structure, thus inversionInd='true'. For HL7 Version 3 Messages, this

5525 relationship is represented with the <sourceOf> element however the semantics, typeCode, and inversionInd remain the same.

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

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

5530 ### 6.3.4.8.5 <templateId root='2.16.840.1.113883.10.20.1.43'/>
<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.3.1'/>

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

6.3.4.8.6 <code code='FINSTRUCT' codeSystem='1.3.6.1.4.1.19376.1.5.3.2'
5535 ### codeSystemName='IHEActCode' />

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

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

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

The <text> element contains a free text representation of the instruction. For CDA this
5540 SHALL contain a provides a <reference>element to thelink text of the comment in the narrative portion of the document. The comment itself is not the act being coded, so it appears in the <text> of the <observation>, not as part of the <code>. For HL7 Version 3 Messages, the full text SHALL be represented here.

6.3.4.8.8 <statusCode code='completed' />

5545 The code attribute of <statusCode> for all comments must be completed.

6.3.4.9 External References 1.3.6.1.4.1.19376.1.5.3.1.4.4

CDA Documents may reference information contained in other documents. While CDA Release 2.0 supports references in content via the <linkHtml> element, this is insufficient for many EMR systems as the link is assumed to be accessible via a URL, which is often
5550 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.

5555 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
5560 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.

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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

5565   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.

5570   Fortunately, CDA Release 2.0 also provides a mechanism to refer to external documents in an entry, as shown below.

6.3.4.9.1 Specification

5575
```
<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' />
5580    <text><reference value='#study-1'/></text>
    <!-- For CDA -->
    <reference typeCode='REFR|SPRT'>
      <externalDocument classCode='DOC' moodCode='EVN'>
        <id extension='' root=''/>
5585        <text><reference value='http://foo..'/></text>
      </externalDocument>
    </reference>
    <!-- For HL7 Version 3 Messages
    <sourceOf typeCode='REFR|SPRT'>
5590      <act classCode='DOC' moodCode='EVN'>
        <id extension='' root=''/>
        <text><reference value='http://foo…'</text>
      </act>
    </sourceOf>
5595    -->
  </act>
</entry>
```

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

5600   The external reference is an act that refers to documentation of an <act> (classCode='ACT'), that previously occurred (moodCode='EVN').

6.3.4.9.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4'/>

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

5605   reference acts. The templateId must have root='1.3.6.1.4.1.19376.1.5.3.1.4.1.4.4'.

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

The reference is an act of itself, and must be uniquely identified. If there is no explicit identifier for this act in the source EMR system, a GUID may be used for the root attribute, and the extension may be omitted. Although HL7 allows for multiple

5610   identifiers, this profile requires that one and only one be used.

_____

_____

6.3.4.9.5 <code nullFlavor='NA'/>

The reference act has no code associated with it.

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

In order to connect this external reference to the narrative text which it refers, the value
5615 of the <reference> element in the <text> element is a URI to an element in the CDA
narrative of this document.

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

External references are listed as either supporting documentation (typeCode='SPRT') or
5620 simply reference material (typeCode='REFR') for the reader. If this distinction is not
supported by the source EMR system, the value of typeCode should be REFR. For CDA,
the reference is indicated by a <reference> element containing an <externalDocument>
element which documents (classCode='DOC') the event (moodCode='EVN'). For HL7
Version 3 Messages, the reference is represented with the element <sourceOf> and the
5625 external document is represented with a <act> element, however semantics, and
attributes remain otherwise without change.

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

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

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

5630 A link to the original document may be provided here. This shall be a URL where the
referenced document can be located. For CDA, the link should also be present in the
narrative inside the CDA Narrative in a <linkHTML> element.

6.3.4.10 Internal References 1.3.6.1.4.1.19376.1.5.3.1.4.4.1

CDA and HL7 Version 3 Entries may reference (point to) information contained in other
5635 entries within the same document or message as shown below.

6.3.4.10.1 Specification

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

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

For CDA the act being referenced appears inside a related entryRelationship. The type
(typeCode) and direction (inversionInd) attributes will be specified in the entry content
module that contains the reference. For HL7 Version 3 Messages, the relationship is

_____

_____

5650   indicated with a <sourceOf> element, however typeCodes and semantics remain unchanged.

6.3.4.10.3 <act classCode=' ' moodCode=' '>

The act being referred to can be any CDA Clinical Statement element type (act, procedure, observation, substanceAdministration, supply, et cetera). For compatibility
5655   with the Clinical Statement model the internal reference shall always use the <act> class, regardless of the XML element type of the act it refers to.

6.3.4.10.4 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4.1'/>

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

5660   ### 6.3.4.10.5 <id root=' ' extension=' '/>

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

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

5665   This element shall be present. It shall be valued when the internal reference is to element that has a <code> element, and shall have the same attributes as the <code> element in the act it references. If the element it references does not have a <code> element, then the nullFlavor attribute should be set to "NA".

6.3.4.11 Concern Entry 1.3.6.1.4.1.19376.1.5.3.1.4.5.1

5670   This event (moodCode='EVN') represents an act (<act classCode='ACT'>) of being concerned about a problem, allergy or other issue. The <effectiveTime> element describes the period of concern. The subject of concern is one or more observations about related problems (see 1.3.6.1.4.1.19376.1.5.3.1.4.5.2) or allergies and intolerances (see 1.3.6.1.4.1.19376.1.5.3.1.4.5.3). Additional references can be provided having additional
5675   information related to the concern. The concern entry allows related acts to be grouped. This allows representing the history of a problem as a series of observation over time, for example.

6.3.4.11.1 Standards

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

_____

_____

6.3.4.11.2Specification

```
5680   <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'/>
5685     <statusCode code='active|suspended|aborted|completed'/>
         <effectiveTime>
           <low value=''/>
           <high value=''/>
         </effectiveTime>
5690     <!-- one or more entry relationships identifying problems of concern -->
         <entryRelationship typeCode='SUBJ' inversionInd='false'>
            :
         </entryRelationship>
         <!-- For HL7 Version 3 Messages
5695     <sourceOf typeCode='SUBJ' inversionInd='false'>
            :
         </sourceOf>
         -->
         <!-- optional entry relationship providing more information about the concern -->
5700     <entryRelationship typeCode='REFR'>
            :
         </entryRelationship>
         <!-- For HL7 Version 3 Messages
         <sourceOf typeCode='REFR' inversionInd='false'>
5705        :
         </sourceOf>
         -->

       </act>
```

5710 **6.3.4.11.3 <act classCode='ACT' moodCode='EVN'>**

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

6.3.4.11.4 <templateId root='2.16.840.1.113883.10.20.1.27'/>
5715 **<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.1'/>**

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

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

5720 This required element identifies the concern.

6.3.4.11.6 <code nullFlavor='NA'/>

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

_____

_____

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

5725   The statusCode associated with any concern must be one of the following values:

Value	Description
Active	A concern that is still being tracked.
Suspended	A concern that is active, but which may be set aside. For example, this value might be used to suspend concern about a patient problem after some period of remission, but before assumption that the concern has been resolved.
Aborted	A concern that is no longer actively being tracked, but for reasons other than because the problem was resolved. This value might be used to mark a concern as being aborted after a patient leaves care against medical advice.
Completed	The problem, allergy or medical state has been resolved and the concern no longer needs to be tracked except for historical purposes.
Note:	A concern in the "active" state represents one for which some ongoing clinical activity is expected, and that no activity is expected in other states. Specific uses of the suspended and aborted states are left to the implementation.

Table 6.3.4-2

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

The <effectiveTime> element records the starting and ending times during which the concern was active. The <low> element shall be present. The <high> element shall be
5730   present for concerns in the completed or aborted state, and shall not be present otherwise.

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

Each concern is about one or more related problems or allergies. This entry shall contain one or more problem or allergy entries that conform to the specification in section
5735   Problem Entry or Allergies and Intolerances. This is how a series of related observations can be grouped as a single concern.

For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <sourceOf> element. The typeCode SHALL be 'SUBJ' for both HL7 Version 3 and CDA. HL7 Version 3 additionally
5740   requires that inversionInd SHALL be 'false'.

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

6.3.4.11.10   <!-- 0..n optional entry relationship providing more information about the concern --> <entryRelationship type='REFR' inversionInd='false'>

5745   Each concern may have 0 or more related references. These may be used to represent related statements such related visits. This may be any valid CDA clinical statement, and

_____

_____

SHOULD be an IHE entry template. For CDA this SHALL be represented with the
<entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented
as a <subjectOf> element. The typeCode SHALL be 'SUBJ' and inversionInd SHALL be
'false'

6.3.4.12 Problem Concern Entry 1.3.6.1.4.1.19376.1.5.3.1.4.5.2

This entry is a specialization of the Concern Entry, wherein the subject of the concern is
focused on a problem. Elements shown in the example below in gray are explained in the
Concern Entry.

6.3.4.12.1 Standards

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

6.3.4.12.2 Parent Template

The parent of this template is Concern Entry. This template is compatible with the
ASTM/HL7 Continuity of Care Document template: 2.16.840.1.113883.10.20.1.27

6.3.4.12.3 Specification

```
<act classCode='ACT' moodCode='EVN'>
 <templateId root='2.16.840.1.113883.10.20.1.27'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.1'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.2'/>
 <id root=' ' extension=' '/>
 <code nullFlavor='NA'/>
 <statusCode code='active|suspended|aborted|completed'/>
 <effectiveTime>
   <low value=' '/>
   <high value=' '/>
 </effectiveTime>
 <!-- 1..* entry relationships identifying problems of concern -->
 <entryRelationship type='SUBJ'>
   <observation classCode='OBS' moodCode='EVN'/>
      <templateID root='1.3.6.1.4.1.19376.1.5.3.1.4.5'>
         :
   </observation>
 </entryRelationship>
 <!-- optional entry relationship providing more information about the concern -->
 <entryRelationship type='REFR'>
 </entryRelationship>
</act>
```

6.3.4.12.4 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.1'/>
<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.2'/>

This entry has a template identifier of 1.3.6.1.4.1.19376.1.5.3.1.4.5.2, and is a subtype of
the Concern Entry, and so must also conform to that specification, with the template

_____

_____

identifier of 1.3.6.1.4.1.19376.1.5.3.1.4.5.1. These elements are required and shall be recorded exactly as shown above.

5790 **6.3.4.12.5 <!-- 1..* entry relationships identifying problems of concern -->**
<observation classCode='OBS' moodCode='EVN'>
<templateID root=' 1.3.6.1.4.1.19376.1.5.3.1.4.5'/>

…
</observation>
5795 **<entryRelationship type='SUBJ'>**

This entry shall contain one or more problem entries that conform to the Problem Entry template 1.3.6.1.4.1.19376.1.5.3.1.4.5. For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <subjectOf> element. The typeCode SHALL be 'SUBJ' and inversionInd SHALL be
5800 'false'

6.3.4.13 Allergy and Intolerance Concern 1.3.6.1.4.1.19376.1.5.3.1.4.5.3

This entry is a specialization of the Concern Entry, wherein the subject of the concern is focused on an allergy or intolerance. Elements shown in the example below in gray are explained in that entry.

5805 **6.3.4.13.1 Standards**

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

6.3.4.13.2 Parent Template

The parent of this template is Concern Entry. This template is compatible with the ASTM/HL7 Continuity of Care Document template: 2.16.840.1.113883.10.20.1.27

_____

_____

6.3.4.13.3 Specification

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```
<act classCode='ACT' moodCode='EVN'>
 <templateId root='2.16.840.1.113883.10.20.1.27'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.1'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.3'/>
 <id root=' ' extension=' '/>
 <code nullFlavor='NA'/>
 <statusCode code='active|suspended|aborted|completed'/>
 <effectiveTime>
   <low value=' '/>
   <high value=' '/>
 </effectiveTime>
 <!-- 1..* entry relationships identifying allergies of concern -->
 <entryRelationship type='SUBJ'>
   <observation classCode='OBS' moodCode='EVN'/>
     <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.6'/>
       :
   </observation>
 </entryRelationship>
 <!-- optional entry relationship providing more information about the concern -->
 <entryRelationship type='REFR'>
 </entryRelationship>
</act>
```

5815

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5830

6.3.4.13.4 <templateId root='2.16.840.1.113883.10.20.1.27'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.1'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5.3'/>

5835 This entry has a template identifier of 1.3.6.1.4.1.19376.1.5.3.1.4.5.3, and is a subtype of the Concern entry, and so must also conform to the rules of the Concern Entry. These elements are required and shall be recorded exactly as shown above.

6.3.4.13.5 <!-- 1..* entry relationships identifying allergies of concern --> <observation classCode='OBS' moodCode='EVN'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.6'/> : </observation> <entryRelationship type='SUBJ'>

5840

This entry shall contain one or more allergy or intolerance entries that conform to the
5845 Allergy and Intolerance Entry. For CDA this SHALL be represented with the
<entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented
as a <sourceOf> element. The typeCode SHALL be 'SUBJ' and inversionInd SHALL be
'false'

6.3.4.14 Problem Entry 1.3.6.1.4.1.19376.1.5.3.1.4.5

5850 This section makes use of the linking, severity, clinical status and comment content
specifications defined elsewhere in the technical framework. In HL7 RIM parlance,
observations about a problem, complaint, symptom, finding, diagnosis, or functional
limitation of a patient is the event (moodCode='EVN') of observing (<observation
classCode='OBS'>) that problem. The <value> of the observation comes from a
5855 controlled vocabulary representing such things. The <code> contained within the
<observation> describes the method of determination from yet another controlled
vocabulary. An example appears below in the figure below.

_____

_____

6.3.4.14.1 Standards

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

6.3.4.14.2 Parent Template

5860   This template is compatible with the ASTM/HL7 Continuity of Care Document template: 2.16.840.1.113883.10.20.1.28

6.3.4.14.3 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>
 <
 <!-- zero or one <entryRelationship typeCode='REFR' inversionInd='false'> elements
      identifying the health status of concern -->
 <!-- zero or one <entryRelationship typeCode='REFR' inversionInd='false'> elements
      containing clinical status -->
 <!-- zero to many <entryRelationship typeCode='REFR' inversionInd='true'> elements
      containing comments -->
</observation>
```

6.3.4.14.4 <observation classCode='OBS' moodCode='EVN' negationInd='false|true'>

The basic pattern for reporting a problem uses the CDA <observation> element, setting the classCode='OBS' to represent that this is an observation of a problem, and the moodCode='EVN', to represent that this is an observation that has in fact taken place. The negationInd attribute, if true, specifies that the problem indicated was observed to not have occurred (which is subtly but importantly different from having not been observed). The value of negationInd should not normally be set to true. Instead, to record that there is "no prior history of chicken pox", one would use a coded value indicated exactly that. However, it is not always possible to record problems in this manner, especially if using a controlled vocabulary that does not supply pre-coordinated negations , or which do not allow the negation to be recorded with post-coordinated coded terminology.

6.3.4.14.5 <templateId root='2.16.840.1.113883.10.20.1.28'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5'/>

These <templateId> elements identify this <observation> as a problem, under both IHE and CCD specifications. This SHALL be included as shown above.

_____

_____

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

The specific observation being recorded must have an identifier (<id>) that shall be
provided for tracking purposes. If the source EMR does not or cannot supply an intrinsic
identifier, then a GUID shall be provided as the root, with no extension (e.g., <id
root='CE1215CD-69EC-4C7B-805F-569233C5E159'/>). While CDA allows for more
than one identifier element to be provided, this profile requires that only one be used.

6.3.4.14.7 <code code=' ' displayName=' ' codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'>

The <code> describes the process of establishing a problem. The code element should be
used, as the process of determining the value is important to clinicians (e.g., a diagnosis
is a more advanced statement than a symptom). The recommended vocabulary for
describing problems is shown in the table below. Subclasses of this content module may
specify other vocabularies. When the list below is used, the codeSystem is
'2.16.840.1.113883.6.96' and codeSystemName is SNOMED CT.

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

6.3.4.14.8 <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'.

6.3.4.14.9 <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

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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

5935   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

5940   patient that is unlikely to change (e.g., the diagnosis of an incurable disease).

6.3.4.14.10   <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

5945   not be sent. If there are confidentiality issues that need to be addressed other mechanisms should be negotiated within the affinity domain.

6.3.4.14.11   <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

5950   consensus on the best use of this element; therefore, it is recommended that this element not be sent.

6.3.4.14.12   <value xsi:type='CD' code=' ' codeSystem=' ' codeSystemName=' ' displayName=' '>

The <value> is the condition that was found. This element is required. While the value

5955   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

5960   attribute, along with the codeSystemName.

_____

_____

CodeSystem	codeSystemName	Description
2.16.840.1.113883.6.96	SNOMED-CT	SNOMED Controlled Terminology
2.16.840.1.113883.6.103	ICD-9CM (diagnoses)	International Classification of Diseases, Clinical Modifiers, Version 9
2.16.840.1.113883.6.26	MEDCIN	A classification system from MEDICOMP Systems.

It is recommended that the codeSystemName associated with the codeSystem, and the displayName for the code also be provided for diagnostic and human readability purposes, but this is not required by this profile. If uncoded, all attributes other than xsi:type='CD' must be absent.

6.3.4.14.13   <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.

6.3.4.14.14   <!-- zero or one <entryRelationship typeCode='SUBJ' inversionInd='true'> elements containing severity -->

An optional <entryRelationship> element may be present indicating the severity of the problem. When present, this <entryRelationship> element shall contain a severity observation conforming to the Severity entry template (1.3.6.1.4.1.19376.1.5.3.1.4.1).

For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <subjectOf> element. The typeCode SHALL be 'SUBJ' and inversionInd SHALL be 'true'.

6.3.4.14.15   <!-- zero or one <entryRelationship typeCode='REFR' inversionInd='false'> elements containing clinical status -->

An optional <entryRelationship> may be present indicating the clinical status of the problem, e.g., resolved, in remission, active. When present, this <entryRelationship> element shall contain a clinical status observation conforming to the Problem Status Observation template (1.3.6.1.4.1.19376.1.5.3.1.4.1.1).

For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <sourceOf> element. The typeCode SHALL be 'REFR' and inversionInd SHALL be 'false'.

6.3.4.14.16   <!-- zero or one <entryRelationship typeCode='REFR' inversionInd='false'> elements identifying the health status of concern -->

An optional <entryRelationship> may be present referencing the health status of the patient, e.g., resolved, in remission, active. When present, this <entryRelationship> element shall contain a clinical status observation conforming to the Health Status

_____

_____

Observation template (1.3.6.1.4.1.19376.1.5.3.1.4.1.1). The typeCode SHALL be 'REFR' and inversionInd SHALL be 'false'.

5995 For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <sourceOf> element.

6.3.4.14.17 <!-- zero to many <entryRelationship typeCode='SUBJ' inversionInd='true'> element containing comments -->

One or more optional <entryRelationship> elements may be present providing an
6000 additional comments (annotations) for the condition. When present, this <entryRelationship> element shall contain a comment observation conforming to the Comment entry template (1.3.6.1.4.1.19376.1.5.3.1.4.2). The typeCode SHALL be 'SUBJ' and inversionInd SHALL be 'true'.

For CDA this SHALL be represented with the <entryRelationship> element. For HL7
6005 Version 3 Messages, this SHALL be represented as a <sourceOf> element.

6.3.4.15 Allergies and Intolerances 1.3.6.1.4.1.19376.1.5.3.1.4.6

Allergies and intolerances are special kinds of problems, and so are also recorded in the CDA <observation> element, with classCode='OBS'. They follow the same pattern as the problem entry, with exceptions noted below.

6010 ### 6.3.4.15.1 Standards

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

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_____

6.3.4.15.2 Specification

```
<observation classCode='OBS' moodCode='EVN' negationInd='false'>
 <templateId root='2.16.840.1.113883.10.20.1.18'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.6'/>
 <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>
 <!-- zero to many <entryRelationship> elements containing reactions -->
 <!-- zero or one <entryRelationship> elements containing severity -->
 <!-- zero or one <entryRelationship> elements containing clinical status -->
 <!-- zero to many <entryRelationship> elements containing comments -->
</observation>
```

6.3.4.15.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.6'/>

This entry has a template identifier of 1.3.6.1.4.1.19376.1.5.3.1.4.5.6, and is a subtype of the Problem Entry, and so must also conform to the rules of the problem entry, which has the template identifier of 1.3.6.1.4.1.19376.1.5.3.1.4.5.5. These elements are required and shall be recorded exactly as shown above.

6.3.4.15.4 <code code='ALG|OINT|DINT|EINT|FINT|DALG|EALG|FALG|DNAINT|ENAINT|FNAINT' displayName=' ' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ObservationIntoleranceType'/>

The <code> element represents the kind of allergy observation made, to a drug, food or environmental agent, and whether it is an allergy, non-allergy intolerance, or unknown class of intolerance (not known to be allergy or intolerance). The <code> element of an allergy entry shall be provided, and a code and codeSystem attribute shall be present. The example above uses the HL7 ObservationIntoleranceType vocabulary domain, which does provide suitable observation codes. Other vocabularies may be used, such as SNOMED-CT or MEDCIN. The displayName and codeSystemName attributes should be present.

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_____

6.3.4.15.5 <value xsi:type='CD' code=' ' codeSystem=' '
6060   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
6065 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.

       <participant typeCode='CSM'>
6070   <participantRole classCode='MANU'>
        <playingEntity classCode='MMAT'>

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

6.3.4.15.6 <code code=' ' codeSystem=' '>
6075   <originalText><reference value=' '/></originalText>
                </code>

The <code> element shall be present. It may contain a code and codeSystem attribute to
indicate the code for the substance causing the allergy or intolerance. It shall contain a
<reference> to the <originalText> in the narrative where the substance is named.

6.3.4.15.7 <!-- zero to many <entryRelationship> elements containing
6080   reactions -->

An allergy entry can record the reactions that are manifestations of the allergy or
intolerance as shown below.

```
<entryRelationship typeCode='MFST'>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.6.1'/>
  <!-- a problem entry  -->
  <observation classCode='OBS' moodCode='EVN'>
    <templateId root='2.16.840.1.113883.10.20.1.54'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5'/>

  </observation>
</entryRelationship>
```

6.3.4.15.8 <entryRelationship typeCode='MFST'>

6095 This is a related entry (<entryRelationship>) that indicates the manifestations
(typeCode='MFST') the reported allergy or intolerance. These are events that may occur,
or have occurred in the past as a reaction to the allergy or intolerance.

6.3.4.15.9<observation classCode='OBS' moodCode='EVN'>
                <templateId root='2.16.840.1.113883.10.20.1.54'/>
6100   <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.5'/>

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</observation>

The entry contained with this entry relationship is some sort of problem that is a manifestation of the allergy. It is recorded using the Problem Entry structure, with the additional template identifier (2.16.840.1.113883.10.20.1.54) indicating that this problem is a reaction.

6.3.4.15.10   <!-- zero or one <entryRelationship typeCode='SUBJ' inversionInd='true'> elements containing severity -->

An optional <entryRelationship> element may be present indicating the severity of the problem. When present, this <entryRelationship> element shall contain a severity observation conforming to the Severity entry template (1.3.6.1.4.1.19376.1.5.3.1.4.1). For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <sourceOf> element. The typeCode SHALL be 'SUBJ' and inversionInd SHALL be 'true'.

6.3.4.15.11   <!-- zero or one <entryRelationship typeCode='REFR' inversionInd='false'> elements containing clinical status -->

An optional <entryRelationship> may be present indicating the clinical status of the allergy, e.g., resolved, in remission, active. When present, this <entryRelationship> element shall contain a clinical status observation conforming to the Problem Status Observation template (1.3.6.1.4.1.19376.1.5.3.1.4.1.1). The typeCode SHALL be 'REFR' and inversionInd SHALL be 'false'. For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <sourceOf> element.

6.3.4.15.12   <!-- zero to many <entryRelationship typeCode='SUBJ' inversionInd='true'> element containing comments -->

One or more optional <entryRelationship> elements may be present providing an additional comments (annotations) for the allergy. When present, this <entryRelationship> element shall contain an entry conforming to the Comment entry template (1.3.6.1.4.1.19376.1.5.3.1.4.2). The typeCode SHALL be 'SUBJ' and inversionInd SHALL be 'true'.

For CDA this SHALL be represented with the <entryRelationship> element. For HL7 Version 3 Messages, this SHALL be represented as a <sourceOf> element.

6.3.4.16 Medications 1.3.6.1.4.1.19376.1.5.3.1.4.7

This content module describes the general structure for a medication. All medication administration acts will be derived from this content module.

6.3.4.16.1 Standards

Pharmacy	HL7 Pharmacy Domain (Normative)
CCD	ASTM/HL7 Continuity of Care Document

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6.3.4.16.2 Specification

```
<substanceAdministration classCode='SBADM' moodCode='INT|EVN'>
  <templateId root='2.16.840.1.113883.10.20.1.24'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7'/>
  <templateId root=''/>
  <id root='' extension=''/>
  <code code='' codeSystem='' displayName='' codeSystemName=''/>
  <text><reference value='#med-1'/></text>
  <statusCode code='completed'/>
  <effectiveTime xsi:type='IVL_TS'>
      <low value=''/>
      <high value=''/>
  </effectiveTime>
  <effectiveTime operator='A' xsi:type='TS|PIVL_TS|EIVL_TS|PIVL_PPD_TS|SXPR_TS'>
    :
  </effectiveTime>
  <routeCode code='' codeSystem='' displayName='' codeSystemName=''>
  <doseQuantity value='' unit=''/>
  <approachSiteCode code='' codeSystem='' displayName='' codeSystemName=''>
  <rateQuantity value='' unit=''/>
  <consumable>
    :
    .
  </consumable>
  <!-- 0..* entries describing the components -->
  <entryRelationship typeCode='COMP' >
      <sequenceNumber value=''/>
  </entryRelationship>
  <!-- An optional entry relationship that indicates the the reason for use -->
  <entryRelationship typeCode='RSON'>
    <act classCode='ACT' moodCode='EVN'>
      <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4.1'/>
      <id root='' extension=''/>
    </act>
  </entryRelationship>
  <!-- An optional entry relationship that provides prescription activity -->
  <entryRelationship typeCode='REFR'>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.3'/>
      :
      .
  </entryRelationship>
  <precondition>
    <criterion>
      <text><reference value=''></text>
    </criterion>
  </precondition>
</substanceAdministration>
```

This section makes use of the linking, severity and instruction entries.

Medications are perhaps the most difficult data elements to model due to variations in the ways that medications are prescribed.

This profile identifies the following relevant fields of a medication as being important to be able to generate in a medical summary. The table below identifies and describes these fields, and indicates the constraints on whether or not they are required to be sent. The fields are listed in the order that they appear in the CDA XML content.

6.3.4.16.2.1 Medication Fields

Field	Opt.	CDA Tag	Description

_____

Start and Stop Date	R2	\<effectiveTime\>	The date (and time if available) when the medication regimen began and is expected to finish. The first component of the \<effectiveTime\> encodes the lower and upper bounds over which the \<substanceAdministration\> occurs, and the start time is determined from the lower bound. If the medication has been known to be stopped, the high value must be present, but expressed as a flavor of null (e.g., Unknown).
Frequency	R2	\<effectiveTime\>	The frequency indicates how often the medication is to be administered. It is often expressed as the number of times per day, but which may also include information such as 1 hour before/after meals, or in the morning, or evening.The second \<effectiveTime\> element encodes the frequency. In cases where split or tapered doses are used, these may be found in subordinate \<substanceAdministration\> elements.
Route	R2	\<routeCode\>	The route is a coded value, and indicates how the medication is received by the patient (by mouth, intravenously, topically, et cetera).
Dose	R2	\<doseQuantity\>	The amount of the medication given. This should be in some known and measurable unit, such as grams, milligrams, et cetera. It may be measured in "administration" units (such as tablets or each), for medications where the strength is relevant. In this case, only the unit count is specified , no units are specified. It may be a range.
Site	O	\<approachSiteCode\>	The site where the medication is administered, usually used with IV or topical drugs.
Rate	R2	\<rateQuantity\>	The rate is a measurement of how fast the dose is given to the patient over time (e.g., .5 liter / 1 hr), and is often used with IV drugs.
Product	R	\<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.

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Indication	O	<entryRelationship>	A link to supporting clinical information about the reason for providing the medication (e.g., a link to the relevant diagnosis).

6.3.4.16.3 <substanceAdministration classCode='SBADM' moodCode='INT|EVN'>

The general model is to record each prescribed medication in a <substanceAdministration> intent (moodCode='INT'). Medications that have been reported by the patient or administered (instead of prescribed), are recorded in the same element, except that this is now an event (moodCode='EVN'). The <substanceAdministration> element may contain subordinate <substanceAdministration> elements in a related component entry to deal with special cases (see the section below on Special Cases). These cases include split, tapered, or conditional dosing, or combination medications. The use of subordinate <substanceAdministration> elements to deal with these cases is optional. The comment field should always be used in these cases to provide the same information as free text in the top level <substanceAdministration> element. There are a variety of special cases for dosing that need to be accounted for. These are described below. Most of these special cases involve changing the dosage or frequency over time, or based on some measurement. When the dosage changes, then additional entries are required for each differing dosage. The last case deals with combination medications.

6.3.4.16.3.1 Normal Dosing 1.3.6.1.4.1.19376.1.5.3.1.4.7.1

This template identifier is used to identify medication administration events that do not require any special processing. The parent template is 1.3.6.1.4.1.19376.1.5.3.1.4.7. Medications that use this template identifier shall not use subordinate <substanceAdministation> acts.

6.3.4.16.3.2 Tapered Doses 1.3.6.1.4.1.19376.1.5.3.1.4.8

This template identifier is used to identify medication administration events that require special processing to handle tapered dosing. The parent template is 1.3.6.1.4.1.19376.1.5.3.1.4.7. A tapered dose is often used for certain medications where abrupt termination of the medication can have negative consequences. Tapered dosages may be done by adjusting the dose frequency, the dose amount, or both.

When merely the dose frequency is adjusted, (e.g., Prednisone 5mg b.i.d. for three days, then 5mg. daily for three days, and then 5mg every other day), then only one medication entry is needed, multiple frequency specifications recorded in <effectiveTime> elements. When the dose varies (eg. Prednisone 15mg daily for three days, then 10 mg daily for three days, the 5 mg daily for three days), subordinate medication entries should be created for each distinct dosage.

6.3.4.16.3.3 Split Dosing 1.3.6.1.4.1.19376.1.5.3.1.4.9

This template identifier is used to identify medication administration events that require special processing to handle split dosing. The parent template is 1.3.6.1.4.1.19376.1.5.3.1.4.7. A split dose is often used when different dosages are given

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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
6235   days is used because Coumadin does not come in a 2.25mg dose form). In this case a subordinate <substanceAdministration> entry is required for each separate dosage.

6.3.4.16.3.4 Conditional Dosing 1.3.6.1.4.1.19376.1.5.3.1.4.10

This template identifier is used to identify medication administration events that require special processing to handle conditional dosing. The parent template is
6240   1.3.6.1.4.1.19376.1.5.3.1.4.7. A conditional dose is often used when the dose amount differs based on some measurement (e.g., an insulin sliding scale dose based on blood sugar level). In this case a subordinate <substanceAdministration> entry is required for each different dose, and the condition should be recorded.

6.3.4.16.3.5 Combination Medications 1.3.6.1.4.1.19376.1.5.3.1.4.11

6245   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
6250   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.

6255   In the latter case of a prepared mixture, the description of the mixture should be provided as the product name (e.g., "GI Cocktail") , in the <substanceAdministration> entry. That entry may, but is not required, to have subordinate <substanceAdministration> entries included beneath it to record the components of the mixture.

6.3.4.16.4 <templateId root='2.16.840.1.113883.10.20.1.24'/>
6260   <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7' />

All medications entries use the <templateId> elements specified above to indicate that they are medication acts. This element is required. In addition, a medication entry shall further identify itself using one of the template identifiers detailed in the next section.

6.3.4.16.5 <templateId root=' ' />

6265   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

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	<substanceAdministration> acts.
1.3.6.1.4.1.19376.1.5.3.1.4.8	A <substanceAdministration> act that records tapered dose information in subordinate <substanceAdministration> act.
1.3.6.1.4.1.19376.1.5.3.1.4.9	A <substanceAdministration> act that records split dose information in subordinate <substanceAdministration> acts.
1.3.6.1.4.1.19376.1.5.3.1.4.10	A <substanceAdministration> act that records conditional dose information in subordinate <substanceAdministration> acts.
1.3.6.1.4.1.19376.1.5.3.1.4.11	A <substanceAdministration> act that records combination medication component information in subordinate <substanceAdministration> acts.

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

6270   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.

6275 ### 6.3.4.16.7 <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 6280   for billing), or may describe the method of medication administration, such as by intravenous injection. This element is optional.

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

The URI given in the value attribute of the <reference> element points to an element in the narrative content that contains the complete text describing the medication. In a CDA 6285   document, the URI given in the value attribute of the <reference> element points to an element in the narrative content that contains the complete text describing the medication. In an HL7 message, the content of the text element shall contain the complete text describing the medication.

6.3.4.16.9 <statusCode code='completed'/>

6290   The status of all <substanceAdministration> elements must be "completed". The act has either occurred, or the request or order has been placed.

6.3.4.16.10   <effectiveTime xsi:type='IVL_TS'>

The first <effectiveTime> element encodes the start and stop time of the medication regimen. This an interval of time (xsi:type='IVL_TS'), and must be specified as shown. 6295   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.

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6.3.4.16.11   <low value=' '/><high value=' '/>

The <low> and <high> values of the first <effectiveTime> element represent the start and
stop times for the medication. The <low> value represents the start time, and the <high>
6300   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.
6305   The rationale is that a provider, seeing an un-refilled prescription would normally assume
that the medication is no longer being taken, even if the intent of the treatment plan is to
continue the medication indefinitely.

6.3.4.16.12   <effectiveTime operator='A' xsi:type='TS|PIVL_TS|EIVL_TS|PIVL_PPD_TS|SXPR_TS' />

6310   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.

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6.3.4.16.12.1 Specifying Medication Frequency

Freq	Description	XML Representation
b.i.d.	Twice a day	<effectiveTime xsi:type='PIVL_TS' institutionSpecified='true' operator='A'> <period value='12' unit='h' /></effectiveTime>
q12h	Every 12 hours	<effectiveTime xsi:type='PIVL_TS' institutionSpecified='false' operator='A'> <period value='12' unit='h' /></effectiveTime>
Once	Once, on 2005-09-01 at 1:18am.	<effectiveTime xsi:type='TS' value='200509010118'/>
t.i.d.	Three times a day, at times determined by the person administering the medication .	<effectiveTime xsi:type='PIVL_TS' institutionSpecified='true' operator='A'> <period value='8' unit='h' /></effectiveTime>
q8h	Every 8 hours	<effectiveTime xsi:type='PIVL_TS' institutionSpecified='false' operator='A'> <period value='8' unit='h' /></effectiveTime>
qam	In the morning	<effectiveTime xsi:type='EIVL' operator='A'> <event code='ACM'/></effectiveTime>
	Every day at 8 in the morning for 10 minutes	<effectiveTime xsi:type='PIVL_TS' operator='A'> <phase> <low value="198701010800" inclusive="true"/> <width value="10" unit="min"/> </phase> <period value='1' unit='d'/></effectiveTime>
q4-6h	Every 4 to 6 hours.	<effectiveTime xsi:type='PIVL_PPD_TS' institutionSpecified='false' operator='A'> <period value='5' unit='h' /> <standardDeviation value='1' unit='h'></effectiveTime>

The last frequency specification is about as bad as it gets, but can still be represented accurately within the HL7 V3 datatypes. The mean (average) of the low and high values is specified for the period. The mean of 4 and 6 is 5. The standard deviation is recorded
6320 as one half the difference between the high and low values, with an unspecified distribution. The type attribute of the <effectiveTime> element describes the kind of frequency specification it contains. More detail is given for each type in the table below.

6.3.4.16.12.2 Data types used in Frequency Specifications

xsi:type	Description
TS	An xsi:type of TS represents a single point in time, and is the simplest of all to represent. The value attribute of the <effectiveTime> element specifies the point in time in HL7 date-time format (CCYYMMDDHHMMSS)
PIVL_TS	An xsi:type of PIVL_TS is the most commonly used, representing a periodic interval of time. The <low> element of <phase> may be present. If so it specifies the starting point, and only the lower order components of this value are relevant with respect to the <period>. The <width> element represents the duration of the dose administration (e.g., for IV administration). The <period> indicates how often the dose is given. Legal values for the unit attribute of <period> are s, min, h, d, wk and mo representing seconds, minutes, hours, days, weeks, and months respectively.
EIVL_TS	An xsi:type of EIVL_TS represents an event based time interval, where the event is not a precise time, but is often used for timing purposes (e.g. with meals, between meals, before breakfast, before sleep). Refer to the HL7 TimingEvent vocabulary for the codes to use for the <event> element. This interval may specify an <offset> which provides information about the time offset from the specified event (e.g., <offset><low value='-1' unit='h'/><width value='10'

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	unit='min'/></offset> means 1 hour before the event. In that same example, the <width> element indicates the duration for the dose to be given.
PIVL_PPD_TS	An xsi:type of PIVL_PPD_TS represents an probabilistic time interval and is used to represent dosing frequencies like q4-6h. This profile requires that the distributionType of this interval be left unspecified. The <period> element specifies the average of the time interval, and the value of the <standardDeviation> shall be computed as half the width of the interval. The unit attributes of the <period> and <standardDeviation> elements shall be the same.
SXPR_TS	An xsi:type of SXPR_TS represents a parenthetical set of time expressions. This type is used when the frequency varies over time (e.g., for some cases of tapered dosing, or to handle split dosing). The <comp> elements of this <effectiveTime> element are themselves time expressions (using any of the types listed above). Each <comp> element may specify an operator (e.g. to intersect or form the union of two sets).

6.3.4.16.13   <routeCode code=' ' displayName=' ' codeSystem='2.16.840.1.113883.5.112' codeSystemName='RouteOfAdministration'>

The <routeCode> element specifies the route of administration using the HL7 RouteOfAdministration vocabulary. A code must be specified if the route is known, and the displayName attribute should be specified. If the route is unknown, this element shall not be sent.

6.3.4.16.14   <approachSiteCode code=' ' codeSystem=' '> originalText><reference value=' '/></originalText> </approachSiteCode>

The <approachSiteCode> element describes the site of medication administrion. It may be coded to a controlled vocabulary that lists such sites (e.g., SNOMED-CT). In CDA documents, this element contains a URI in the value attribute of the <reference> that points to the text in the narrative identifying the site. In a message, the <originalText> element shall contain the text identifying the site.

6.3.4.16.15   <doseQuantity> <low value=' ' unit=' '/><high value=' ' unit=' '/> </doseQuantity>

The dose is specified if the <doseQuantity> element. If a dose range is given (e.g., 1-2 tablets, or 325-750mg), then the <low> and <high> bounds are specified in their respective elements, otherwise both <low> and <high> have the same value. If the dose is in countable units (tablets, caplets, "eaches"), then the unit attribute is not sent. Otherwise the units are sent. The unit attribute should be derived from the HL7 UnitsOfMeasureCaseSensitive vocabulary .

6.3.4.16.16   <low|high value=' '> <translation> <originalText><reference value=' '/></originalText> </translation></low|high >

Any <low> and <high> elements used for <doseQuantity> or <rateQuantity> should contain a <translation> element that provides a <reference> to the <originalText> found in the narrative body of the document. In a CDA document, any <low> and <high> elements used for <doseQuantity> or <rateQuantity> should contain a <translation> element that provides a <reference> to the <originalText> found in the narrative body of

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the document. In a message, the <originalText> may contain the original text used to
6355   describe dose quantity.

6.3.4.16.17   <rateQuantity><low value=' ' unit=' '/><high value=' ' unit=' '/></rateQuantity>

The rate is specified in the <rateQuantity> element. The rate is given in units that have
measure over time. In this case, the units should be specified as a string made up of a unit
6360   of measure (see doseQuantity above), followed by a slash (/), followed by a time unit (s,
min, h or d).

Again, if a range is given, then the <low> and <high> elements contain the lower and
upper bound of the range, otherwise, they contain the same value.

6.3.4.16.18   <consumable>

6365   The <consumable> element shall be present, and shall contain a <manufacturedProduct>
entry conforming to the **Product Entry** template

6.3.4.16.19   <entryRelationship typeCode='REFR'> &nsbp;<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.3'/>

The top level <substanceAdministration> element may contain a reference
6370   (typeCode='REFR') to related prescription activity as described in section 5.4.4.16.

6.3.4.16.20   <entryRelationship typeCode='COMP'> <sequenceNumber value=' '>

A top level <substanceAdministration> element may contain one or more related
components, either to handle split, tapered or conditional dosing, or to support
6375   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>
6380   shall be an ordinal number, starting at 1 for the first component, and increasing by 1 for
each subsequent component. Components shall be sent in <sequenceNumber> order.

6.3.4.16.21   <entryRelationship typeCode='SUBJ' inversionInd='true'/>

At most one instruction may be provided for each <substanceAdministration> entry. If
provided, it shall conform to the requirements listed above under section 5.4.4.6 on
6385   medication instructions. The instructions shall contain any special case dosing
instructions (e.g., split, tapered, or conditional dosing), and may contain other
information (take with food, et cetera).

6.3.4.16.22   <entryRelationship typeCode='RSON'> <act classCode='ACT' moodCode='EVN'>
6390   <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.4.1'/> <id root=' ' extension=' '/>

_____

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```
         </act>
      </entryRelationship>
```

6395 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.

6400 **6.3.4.16.23   \<precondition>\<criterion>**
\<text>\<reference value=' '>\</text>
\</criterion>\</precondition>

In a CDA document, the preconditions for use of the medication are recorded in the \<precondition> element. The value attribute of the \<reference> element is a URL that
6405 points to the CDA narrative describing those preconditions.

6.3.4.16.24   \<condition typeCode='PRCN'>
\<criterion>
\<text>\</text>
\<value nullFlavor='UNK'/>
6410 **\<interpretationCode nullFlavor='UNK'/>**
\</criterion>
\</condition>

In a message, the preconditions for use of the medication are recorded in the \<condition> element. The typeCode shall be PRCN. The \<text> element of the criterion shall contain
6415 a text description of the precondition. The \<value> element is required, and may be recorded in a structured data type if known, and if not, may be recorded using a nullFlavor as shown above. The same is true for \<interpretationCode>.

6.3.4.17 Immunizations 1.3.6.1.4.1.19376.1.5.3.1.4.12

An immunizations entry is used to record the patient's immunization history.

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6420 **6.3.4.17.1 Specification**

```
<substanceAdministration typeCode='SBADM' moodCode='EVN' negationInd='true{{!}}false'>
  <templateId root='2.16.840.1.113883.10.20.1.24'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.12'/>

  <id root='' extension=''/>
  <code code='IMMUNIZ' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActCode'/>
  <text><reference value='#xxx'/><text>
  <statusCode code='completed'/>
  <effectiveTime value=''/>
  <!-- The reasonCode would normally provide a reason why the immunization was
    not performed.  It isn't supported by CDA R2, and so comments will have to suffice.
    <reasonCode code='' codeSystem='' codeSystemName='ActNoImmunizationReasonIndicator'/>
  -->
  <routeCode code='' codeSystem='' codeSystemName='RouteOfAdministration'/>
  <approachSiteCode code='' codeSystem=''
codeSystemName='HumanSubstanceAdministrationSite'/>
  <doseQuantity value='' units=''/>
  <consumable typeCode='CSM'>
    <manufacturedProduct classCode='MANU'>
      <manufacturedLabeledDrug classCode='MMAT' determinerCode='KIND'>
        <code code='' codeSystem='' codeSystemName=''>
          <originalText><reference value='#yyy'/></originalText>
        </code>
      </manufacturedLabeledDrug>
    </manufacturedProduct>
  </consumable>
  <!-- An optional entry relationship that provides prescription activity -->
  <entryRelationship typeCode='REFR'>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.3'/>
    :
    .
  </entryRelationship>
  <!-- An optional entry relationship that identifies the immunization series number -->
  <entryRelationship typeCode='SUBJ'>
    <observation 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>
```

6.3.4.17.2 <substanceAdministration typeCode='SBADM' moodCode='EVN' negationInd='true|false'>

An immunization is a substance administration event. An immunization entry may be a
6475 record of why a specific immunization was not performed. In this case, negationInd shall
be set to "true", otherwise, it shall be false.

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6.3.4.17.3 <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'.

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

This shall be the identifier for the immunization event.

6.3.4.17.5 <code code='IMMUNIZ' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActCode'/>

This required element records that the act was an immunization. The substance administration act must have a <code> element with code and codeSystem attributes present. If no coding system is used by the source, then simply record the code exactly as shown above. Another coding system that may be used for codes for immunizations are the CPT-4 codes for immunization procedures. This <code> element shall not be used to record the type of vaccine used from a vocabulary of drug names.

codeSystem	codeSystemName	Description
2.16.840.1.113883.5.4	IMMUNIZ	The IMMUNIZ term from the HL7 ActCode vocabulary.
2.16.840.1.113883.6.12	C4	Current Procedure Terminology 4 (CPT-4) codes.

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

In a CDA document, the URI given in the value attribute of the <reference> element points to an element in the narrative content that contains the complete text describing the immunization activity. In an HL7 message, the content of the text element shall contain the complete text describing the immunization activity.

6.3.4.17.7 <statusCode code='completed'/>

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

6.3.4.17.8 <effectiveTime value=' '/>

The effectiveTime element shall be present and should contain a time value that indicates the date of the substance administration. If the date is unkown, this shall be recorded using the nullFlavor attribute, with the reason that the information is unknown being specified. Otherwise, the date shall be recorded, and should have precision of at least the day.

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

See routeCode under Medications.

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

6510   See approachSiteCode under Medications.

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

See doseQuantity under Medications.

6.3.4.17.12 <consumable typeCode='CSM'>

See consumable under Medications.

6515 ### 6.3.4.17.13 <entryRelationship typeCode='REFR'> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.3'/>

The top level <substanceAdministration> element may contain a reference
(typeCode='REFR') to related Supply entry

6.3.4.17.14 <entryRelationship typeCode='SUBJ'>
6520 ### <observation classCode='OBS' moodCode='EVN'> <templateId root='2.16.840.1.113883.10.20.1.46'/>

This optional entry relationship may be present to indicate that position of this
immunization in a series of immunizations.

6.3.4.17.15 <code code='30973-2' displayName='Dose Number'
6525 ### codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>

The <code> element shall be present and must be recorded with the code and codeSystem
attributes shown above. This element indicates that the observation describes the dose
number for the immunization.

6.3.4.17.16 <statusCode code='completed'/>

6530   The <statusCode> element shall be present, and must be recorded exactly as shown
above. This element indicates that the observation has been completed.

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

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

6535 ### 6.3.4.17.18 <entryRelationship inversionInd='true' typeCode='CAUS'>

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

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

This element is required, and provides a pointer to the the adverse reaction caused by the
6540   immunization.

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6.3.4.17.20   <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.

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6.3.4.17.21   <!-- 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
6550   present.

6.3.4.18 Supply Entry 1.3.6.1.4.1.19376.1.5.3.1.4.7.3

The supply entry describes a prescription activity.

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6.3.4.18.1 Specification

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```
<substanceAdministration classCode='SBADM' moodCode='INT|EVN'>
    :
    .
  <entryRelationship type='REFR' inversionInd='false'>
    <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>
```

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

A <substanceAdministration> act may reference (typeCode='REFR') a prescription
6595 activity in an <entryRelationship> element in a CDA document. In a message, the
relationship is recorded using a <sourceOf> element instead of the <entryRelationship>
element. The typeCode and inversionInd attributes, and the semantics remain identical.

6.3.4.18.3 <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
6600 exactly as shown above. This element identifies this entry as a prescription activity.

6.3.4.18.4 <sequenceNumber value=' '/>

The prescription activity may have a <sequenceNumber> element to indicate the fill
number. A value of 1, 2 or N indicates that it is the first, second, or Nth fill respectively
of a specific prescription. This element should be present when the embedded <supply>
6605 element has a moodCode attribute of EVN.

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6.3.4.18.5 <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.

6610 ### 6.3.4.18.6 <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.

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

6615 Each supply act shall have an identifier to uniquely identify the supply entry.

6.3.4.18.8 <repeatNumber value=' '/>

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

6.3.4.18.9 <quantity value=' ' unit=' '/>

6620 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.

6625 ### 6.3.4.18.10   <author>

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

6.3.4.18.11   <time value=' '/>

The <time> element must be present to indicate when the author created the prescription.
6630 If this information is unknown, it shall be recorded by setting the nullFlavor attribute to UNK.

6.3.4.18.12   <assignedAuthor>

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

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

6635 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.

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6.3.4.18.14   <assignedPerson><name/></assignedPerson> <representedOrganization><name/></ representedOrganization>

6640   An <assignedPerson> and/or <representedOriganization> element shall be present. This element shall contain a <name> element to identify the prescriber or their organization.

6.3.4.18.15   <performer typeCode='PRF'>

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

6645   ### 6.3.4.18.16   <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
6650   filled (moodCode='INT').

6.3.4.18.17   <assignedEntity>

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

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

6655   One or more <id> elements should be present. These identify the performer.

6.3.4.18.19   <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.

6660   ### 6.3.4.18.20   <!-- 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 <u>Medication Fulfillment Instructions</u> entry.

6665   ### 6.3.4.19 Product Entry 1.3.6.1.4.1.19376.1.5.3.1.4.7.2

The product entry describes a medication or immunization used in a <substanceAdministration> or <supply> act. It adopts the constraints of the ASTM/HL7 Continuity of Care Document.

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6.3.4.19.1 Specification

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```
<!-- Within a CDA Document -->
<manufacturedProduct>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.2'/>
  <templateId root='2.16.840.1.113883.10.20.1.53'/>
  <manufacturedMaterial>
    <code code='' displayName='' codeSystem='' codeSystemName=''>
      <originalText><reference value=''/></originalText>
    </code>
    <name></name>
  </manufacturedMaterial>
</manufacturedProduct>
<!-- Within a message -->
<administerableMaterial>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.2'/>
  <templateId root='2.16.840.1.113883.10.20.1.53'/>
    <administerableMaterial>
        <code></code>
      <desc></desc>
    </administerableMaterial>
</administerableMaterial>
```

6.3.4.19.2 \<manufacturedProduct> -OR- \<administerableMaterial>
\<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.7.2'/>
\<templateId root='2.16.840.1.113883.10.20.1.53'/>
\<manufacturedMaterial> -OR- \<administerableMaterial>

In a CDA document, the name and strength of the medication are specified in the elements under the <manufacturedMaterial> element. In a message, the are contained within the <administeredMaterial> element, inside another <administerableMaterial> element[1]. The templateId elements are required and identify this as a product entry.

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[1] This duplication of element names is an artifact of the standard.

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

6705 The <code> element of the <manufacturedMaterial> describes the medication. This may be coded using a controlled vocabulary, such as RxNorm, First Databank, or other vocabulary system for medications, and should be the code that represents the generic medication name and strength (e.g., acetaminophen and oxycodone -5/325), or just the generic medication name alone if strength is not relevant (Acetaminophen).

6710 In a CDA document, the <originalText> shall contain a <reference> whose URI value points to the generic name and strength of the medication, or just the generic name alone if strength is not relevant. Inside a message, the <originalText> may contain the actual text that describes the medication in similar fashion.

Note: When the text is supplied from the narrative, the implication is that if you supply the components of a combination medication in an entry, you must also display these in the narrative text, otherwise you would

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> 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.

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The <code> element is also used to support coding of the medication. If coded, it must provide a code and codeSystem attribute using a controlled vocabulary for medications. The displayName for the code and codeSystemName should be provided as well for diagnostic and human readability purposes, but are not required. The table below
6720 provides the codeSystem and codeSystemName for several controlled terminologies that may be used to encode medications and/or immunizations.

codeSystem	codeSystemName	Description
2.16.840.1.113883.6.88	RxNorm	RxNorm
2.16.840.1.113883.6.69	NDC	National Drug Codes
2.16.840.1.113883.6.63	FDDC	First DataBank Drug Codes
2.16.840.1.113883.6.96	SNOMED-CT	SNOMED Controlled Terminology
2.16.840.1.113883.6.59	CVX	CDC Vaccine Codes

The code used for an immunization may use code systems other than what might be used for other medications, such as the CDC maintained CVX codes. Code systems that
6725 describe vaccination *procedures* (such as CPT-4) shall not be used to describe the vaccine entry.

6.3.4.19.4 <name> -OR- <desc>

In a CDA document, the <name> element should contain the brand name of the medication (or active ingredient in the case of subordinate <substanceAdministration> elements used to record components of a medication). Within a message, this information
6730 shall be provided in the <desc> element.

6.3.4.20 Simple Observations 1.3.6.1.4.1.19376.1.5.3.1.4.13

The simple observation entry is meant to be an abstract representation of many of the observations used in this specification. It can be made concrete by the specification of a
6735 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).

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6.3.4.20.1 Specification

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```
<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=''/>
  <!-- for CDA -->
  <text><reference value='#xxx'/></text>
  <!-- For HL7 Version 3 Messages
  <text>text</text>
  -->
  <statusCode code='completed'/>
  <effectiveTime value=''/>
  <repeatNumber value=''/>
  <value xsi:type='' …/>
  <interpretationCode code='' codeSystem='' codeSystemName=''/>
  <methodCode code='' codeSystem='' codeSystemName=''/>
  <targetSiteCode code='' codeSystem='' codeSystemName=''/>
  <author typeCode='AUT'>
    <assignedAuthor typeCode='ASSIGNED'><id></assignedAuthor> <!-- for CDA -->
    <!-- For HL7 Version 3 Messages
    <assignedEntity typeCode='ASSIGNED'>
      <Person classCode='PSN'>
        <determinerCode root=''>
        <name>…</name>
      </Person>
    <assignedEntity>
    -->
  </author>
</observation>
```

6770   **6.3.4.20.2 <observation typeCode='OBS' moodCode='EVN'>**

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

6.3.4.20.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>

The <templateId> element identifies this <observation> as a simple observation, allowing
6775   for validation of the content. The templateId must appear as shown above.

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

Each observation shall have an identifier.

**6.3.4.20.5 <code code=' ' displayName=' ' codeSystem=' '
    codeSystemName=' '/>**

6780   Observations shall have a code describing what was measured. The code system used is
determined by the vocabulary constraints on the types of measurements that might be
recorded in a section. Content modules that are derived from the Simple Observation
content module may restrict the code system and code values used for the observation.

6.3.4.20.6 <text><reference value='#xxx'/></text> -OR- <text>text</text>

6785   Each observation measurement entry may contain a <text> element providing the free
text that provides the same information as the observation within the narrative portion of
the document with a <text> element. For CDA based uses of Simple Observations, this

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element SHALL be present, and SHALL contain a <reference> element that points to the
related string in the narrative portion of the document. For HL7 Version 3 based uses, the
<text> element MAY be included.

6.3.4.20.7 <statusCode code='completed'/>

The status code of all observations shall be completed.

6.3.4.20.8 <effectiveTime value=' '/>

The <effectiveTime> element shall be present in standalone observations , and shall
record the date and time when the measurement was taken. This element should be
precise to the day. If the date and time is unknown, this element should record that using
the nullFlavor attribute.

6.3.4.20.9 <value xsi:type=' ' …/>

The value of the observation shall be recording using a data type appropriate to the
observation. Content modules derived from the Simple Observation content module may
restrict the allowable data types used for the observation.

6.3.4.20.10   <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>

If there is an interpretation that can be performed using an observation result (e.g., high,
borderline, normal, low), these may be recorded within the interpretationCode element.

6.3.4.20.11   <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>

The methodCode element may be used to record the specific method used to make an
observation when this information is not already pre-coordinated with the observation
code .

6.3.4.20.12   <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>

The targetSiteCode may be used to record the target site where an observation is made
when this information is not already pre-coordinated with the observation code.

6.3.4.20.13   <author><assignedAuthor classCode='ASSIGNED'>...<assignedAuthor></author>

In CDA uses, SimpleObservaions are assumed to be authored by the same author as the
document through context conduction. However specific authorship of observation may
be represented by listing the author in the header and referencing the author in a <author>
relationship. If authors are explicitly listed in documents, an <id> element SHOULD
reference the ID of the author in the header through an assignedAuthor Role. If the author
of the observation is not an author of the document the <person> object including a name
and ID SHALL be included.

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For HL7 Version 3 purposes, the <author> element SHOULD be present unless it can be determined by conduction from organizers or higher level structures. When used for HL7
6825 Version 3 the role element name is <assignedEntity> and the author is represented a <assignedPerson> element.

6.3.4.21 Vital Signs Organizer 1.3.6.1.4.1.19376.1.5.3.1.4.13.1

A vital signs organizer collects vital signs observations.

6.3.4.21.1 Specification

6830
```
<organizer classCode='CLUSTER' moodCode='EVN'>
  <templateId root='2.16.840.1.113883.10.20.1.32'/>
  <templateId root='2.16.840.1.113883.10.20.1.35'/>
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.1'/>
  <id root='' extension=''/>
  <code code='46680005' displayName='Vital signs'
    codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'/>
  <statusCode code='completed'/>
  <effectiveTime value=''/>
  <!-- For HL7 Version 3 Messages
  <author classCode='AUT'>
     <assignedEntity1 typeCode='ASSIGNED'>
        :
     <assignedEntity1>
  </author>
  -->
  <!-- one or more vital signs observations -->
  <component typeCode='COMP'>
    <observation classCode='OBS' moodCode='EVN'>
      <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.2'/>
        :
    </observation>
  </component>
</organizer>
```

6855 ### 6.3.4.21.2 <organizer classCode='CLUSTER' moodCode='EVN'>

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

6.3.4.21.3 <templateId root='2.16.840.1.113883.10.20.1.32'/>
<templateId root='2.16.840.1.113883.10.20.1.35'/>
<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.1'/>

6860 The vital signs organizer shall have the <templateId> elements shown above to indicate that it inherits constraints from the ASTM/HL7 CCD Specification for Vital signs, and the constraints of this specification.

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

The organizer shall have an <id> element.

6865 ### 6.3.4.21.5 <code code='46680005' displayName='Vital signs'
codeSystem='2.16.840.1.113883.6.96'
codeSystemName='SNOMED CT'/>

The <code> element shall be recorded as shown above to indicate that this organizer captures information about patient vital signs.

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6870 **6.3.4.21.6 <statusCode code='completed'/>**

The observations have all been completed.

6.3.4.21.7 <effectiveTime value=' '/>

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

6.3.4.21.8 <author typeCode='AUT'><assignedEntity1
6875 typeCode='ASSIGNED'>...</assignedEntity1></author>

For use with HL7 Version 3, Vital Sign organizers SHALL contain an <author> element to represent the person or device.

6.3.4.21.9 <!-- one or more vital signs observations --> <component typeCode='COMP'>

6880 The organizer shall have one or more <component> elements that are <observation> elements using the Vital Signs Observation template.

6.3.4.22 Vital Signs Observation 1.3.6.1.4.1.19376.1.5.3.1.4.13.2

A vital signs observation is a simple observation that uses a specific vocabulary, and inherits constraints from CCD.

6885 **6.3.4.22.1 Specification**

```
<observation classCode='OBS' moodCode='EVN'>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
 <templateId root='2.16.840.1.113883.10.20.1.31'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.2'/>
 <id root=' ' extension=' '/>
 <code code=' ' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
 <text><reference value='#xxx'/></text>
 <statusCode code='completed'/>
 <effectiveTime value=' '/>
 <repeatNumber value=' '/>
 <value xsi:type='PQ' value=' ' unit=' '/>
 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>
</observation>
```

6.3.4.22.2 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/> <templateId root='2.16.840.1.113883.10.20.1.31'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.2'/>

6905 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.

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

6910 A vital signs observation entry shall use one of the following LOINC codes, with the specified data types and units.

LOINC	Description	Units	Type
9279-1	RESPIRATION RATE	/min	
8867 4	HEART BEAT		
2710-2	OXYGEN SATURATION	%	
8480-6	INTRAVASCULAR SYSTOLIC	mm[Hg]	
8462-4	INTRAVASCULAR DIASTOLIC		
8310-5	BODY TEMPERATURE	Cel or [degF]	PQ
8302-2	BODY HEIGHT (MEASURED)	m, cm,[in_us] or [in_uk]	
8306-3	BODY HEIGHT^LYING		
8287-5	CIRCUMFRENCE.OCCIPITAL-FRONTAL (TAPE MEASURE)		
3141-9	BODY WEIGHT (MEASURED)	kg, g, [lb_av] or [oz_av]	

6.3.4.22.4 <value xsi:type='PQ' value=' ' unit=' '/>

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

6915
6.3.4.22.5 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>

The interpretation code may be present to provide an interpretation of the vital signs measure (e.g., High, Normal, Low, et cetera).

6.3.4.22.6 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>

6920 The <methodCode> element may be present to indicate the method used to obtain the measure. Note that method used is distinct from, but possibly related to the target site.

6.3.4.22.7 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>

The target site of the measure may be identified in the <targetSiteCode> element (e.g., Left arm [blood pressure], oral [temperature], et cetera).

6925
6.3.4.23 Family History Organizer 1.3.6.1.4.1.19376.1.5.3.1.4.15

The family history organizer collects the problems of a patient's family member.

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6.3.4.23.1 Specification

```
<entry>
  <organizer classCode='CLUSTER' moodCode='EVN'>
    <templateId root='2.16.840.1.113883.10.20.1.23'/>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.15'/>
    <subject typeCode='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 6.3-59 Family History Organizer Example

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

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

6.3.4.23.3 <templateId root='2.16.840.1.113883.10.20.1.23'/> <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.15'/>

The organizer is identified by the <templateId> elements, which shall be present as shown above.

6.3.4.23.4 <subject typeCode='SUBJ'> <relatedSubject classCode='PRS'>

The <subject> element shall be present and relates the subject of the observations to the patient. It shall contain a <relatedSubject> element that is a personal relation of the patient (classCode='PRS').

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

The <code> element shall be present, and give the relationship of the subject to the patient. The code attribute shall be present, and shall contain a value from the HL7 FamilyMember vocabulary. The codeSystem attribute shall be present and shall use the value shown above.

6.3.4.23.6<subject>

The <subject> element contains information about the relation.

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

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

6.3.4.23.8<administrativeGenderCode code=' ' />

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

6.3.4.23.9<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').

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

The <code> element shall be present, and gives the relationship of the participant to the subject. The code attribute shall be present, and shall contain a value from the HL7 FamilyMember vocabulary. The codeSystem attribute shall be present and shall use the value shown above.

6.3.4.23.11   <playingEntity classCode='PSN'>

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

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

The <sdtc:id> element shall be present. It must have the same root and extension attributes of the <subject> of a separate family history organizer.

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6.3.4.23.13 <entryRelationship typeCode='COMP'>
<observation classCode='OBS' moodCode='EVN'>
<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.3'/>

7010 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.

6.3.4.24 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
7015 inherits constraints from CCD. Family history observations are found inside Family
History Organizers.

6.3.4.24.1 Standards

CCD ASTM/HL7 Continuity of Care Document

6.3.4.24.2 Parent Template

The parent of this template is Simple Observation. This template is compatible with the
7020 ASTM/HL7 Continuity of Care Document template: 2.16.840.1.113883.10.20.1.22

6.3.4.24.3 Specification

```
<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=' ' extension=' '/>
 <code code=' ' displayName=' ' codeSystem=' ' codeSystemName=' '/>
 <text><reference value='#xxx'/></text>
 <statusCode code='completed'/>
 <effectiveTime value=' '/>
 <repeatNumber value=' '/>
 <value xsi:type='CD' .../>
 <interpretationCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>
</observation>
```

Figure 6.3-60 Family History Observation Example

6.3.4.24.4 <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'/>

7040 The <templateId> elements identify this observation as a family history observation, and
shall be present as shown above.

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

The <code> indicates the type of observation made (e.g., Diagnosis, et cetera). See the
7045 code element in the Problem Entry entry for suggested values.

_____

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6.3.4.24.6<value xsi:type='CD' code=' ' displayName=' ' codeSystem=' '
      codeSystemName=' '/>

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

7050   **6.3.4.25 Social History Observation 1.3.6.1.4.1.19376.1.5.3.1.4.13.4**

A social history observation is a simple observation that uses a specific vocabulary, and
inherits constraints from CCD.

6.3.4.25.1 Standards

CCD [ASTM/HL7 Continuity of Care Document](#)

6.3.4.25.2 Parent Template

7055   The parent of this template is [Simple Observation](#). This template is compatible with the
ASTM/HL7 Continuity of Care Document template: 2.16.840.1.113883.10.20.1.33

6.3.4.25.3 Specification

```
<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>
```

Figure 6.3-61 Social History Observation Example

6.3.4.25.4<templateId root='2.16.840.1.113883.10.20.1.33'/>
7075   **<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.4'/>**

These <templateId> elements identify this as a Social History observation.

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

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

7080   **Table 6.3.4-3 Social History Codes**

Code	Description	Data Type	Units
229819007	Smoking		{pack}/d or {pack}/wk or {pack}/a
256235009	Exercise	PQ	{times}/wk
160573003	ETOH (Alcohol) Use		{drink}/d or {drink}/wk

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364393001	Diet	CD	N/A
364703007	Employment		
425400000	Toxic Exposure		
363908000	Drug Use		
228272008	Other Social History	ANY	

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

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

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

The <value> element reports the value associated with the social history observation. The data type to use for each observation should be drawn from the table above.

Observations in the table above using the PQ data type have a unit in the form {xxx}/d, {xxx}/wk or {xxx}/a represent the number of items per day, week or year respectively. The value attribute indicates the number of times of the act performed, and the units represent the frequency. The example below shows how to represent 1 drink per day.

```
    :
  <code code='160573003' displayName='ETOH Use'
        codeSystem='2.16.840.1.113883.6.96'
        codeSystemName='SNOMED CT'/>
    :
  <value xsi:type='PQ' value='1' unit='{drink}/d'/>
    :
```

Observations in the table using the CD data type should include coded values from an appropriate vocabulary to represent the social history item. The example below shows the encoding to indicate drug use of cannabis.

```
    :
  <code code='363908000' displayName='Drug Use'
        codeSystem='2.16.840.1.113883.6.96'
        codeSystemName='SNOMED CT'/>
    :
  <value xsi:type='CD' code='398705004' displayName='cannabis'
         codeSystem='2.16.840.1.113883.6.96'
         codeSystemName='SNOMED CT'/>
    :
```

Other social history observations may use any appropriate data type.

6.3.4.25.8 ~~<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.

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6.3.4.26 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.

6.3.4.26.1 Parent Template

7120   The parent of this template is Simple Observation.

6.3.4.26.2 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>
```

6.3.4.26.3 <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,
7140   allowing for validation of the content. The <templateId> elements shall be recorded as shown above.

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

7145   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.

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7150

LOINC CODE	Description	Type	Units or Vocabulary
Summary over All Pregnancies			
11636-8	BIRTHS LIVE (REPORTED)	QTY	N/A
11637-6	BIRTHS PRETERM (REPORTED)		
11638-4	BIRTHS STILL LIVING (REPORTED)		
11639-2	BIRTHS TERM (REPORTED)		
11640-0	BIRTHS TOTAL (REPORTED)		
11612-9	ABORTIONS (REPORTED)		
11613-7	ABORTIONS INDUCED (REPORTED)		
11614-5	ABORTIONS SPONTANEOUS (REPORTED)		
33065-4	ECTOPIC PREGNANCY (REPORTED)		
Detailed Pregnancy Data			
11449-6	PREGNANCY STATUS	CE	SNOMED CT, ICD-9-CM (V22)
8678-5	MENSTRUAL STATUS		SNOMED CT
8665-2	DATE LAST MENSTRUAL PERIOD	TS	
11778-8	DELIVERY DATE (CLINICAL ESTIMATE)	TS	N/A
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)		
45371-2	MULTIPLE PREGNANCY		

6.3.4.26.5 <repeatNumber value=' '/>

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

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6.3.4.26.6 <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.

6.3.4.26.7 ~~<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.

6.3.4.27 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.

_____

_____

7170   **6.3.4.27.1 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>
```

6.3.4.27.2 <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. The root attribute SHALL be valued with

7230   '1.3.6.1.4.1.19376.1.5.3.1.1.11.2.3.1'.

_____

_____

6.3.4.27.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>

EDD observation SHALL comply with the restrictions of the Simple Observation entry. The observation SHALL NOT include repeatNumber, interpretationCode, methodCode, or targetSiteCode as listed below.

7235 ### 6.3.4.27.4 <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 (for example, this code is used to represent the field on the last line of the EDD section of the ACOG form). This code SHALL be the LOINC code 11778-8. It is good style to include the displayName and codeSystemName to help debugging.

7240 ### 6.3.4.27.5 <value xsi:type='TS' value=' '>

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

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

There may be multiple clinicians following the patient and authoring the overall
7245 document, however the EDD observation has an individual author. For CDA based content, this author SHALL be listed in the CDA header and referenced from the entry by including the id element of the assignedAuthor. For HL7 Version 3 Messages based content, the author SHALL be included in full through this element.

6.3.4.27.7 <author typeCode='AUT'><time value=' '/></author>

7250 The author.time is used to record the time that the author recorded the observation. It SHALL be included.

6.3.4.27.8 <entryRelationship typeCode='SPRT'>

The <entryRelationship> element binds the clinicians estimated EDD to supporting observations by different methods. Supporting observations SHOULD be included. If
7255 included, the typeCode SHALL be 'SPRT'. For HL7 Version 3 Messages based content, the element name is <sourceOf> rather than <entryRelationship>, however the semantics, typeCode, and nested elements remain unchanged.

_____

_____

6.3.4.27.9 <observation>
7260   **<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>**
     :
    </observation> [1st nesting]

Observations that support the clinical observation SHALL be included if known. These observations are the supporting calculated dates from various methods such as ultrasound 7265 dates or dates calculated from LMP (i.e., the left column of fields on the ACOG form). 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. (Method is implied by the LOINC code). The templateId 7270 SHALL be valued as '1.3.6.1.4.1.19376.1.5.3.1.4.13'

6.3.4.27.10   <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-QN-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

7275 **6.3.4.27.11   <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.

For HL7 Version 3 Messages based content, the element name is <sourceOf> rather than <entryRelationship>, however the semantics, typeCode, and nested elements remain 7280 unchanged.

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6.3.4.27.11.1 <observation>
  <templateId root=' '/>
   :
  </observation> [2st nesting]

7285   Observations that support the calculation of supporting observation SHALL be included if known. These observations are the supporting dates or ages from various methods such as ultrasound gestational age or the date of last Menses (for example, the right column of fields on the ACOG form). Supporting observations SHALL also conform to the simple observation template. Supporting observations MAY include a different effectiveTime,

7290   author, or informant. Supporting observations SHALL NOT include repeatNumber, interpretationCode, methodCode, or targetSiteCode. (Method is implied by the LOINC code)

6.3.4.27.12 <code code=' ' codeSystem='2.16.840.1.113883.6.1'/> [2nd nesting]

7295   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

7300   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

6.3.4.27.13 <repeatNumber value=' '/>
  <interpretationCode code=' ' codeSystem=' '/>
  <targetSiteCode code=' ' codeSystem=' '/>

7305   The <repeatNumber> <interpretationCode>, and <targetSiteCode> elements should not be present in a EDD observation.

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6.3.4.28 Antepartum Visit Summary Battery
1.3.6.1.4.1.19376.1.5.3.1.1.11.2.3.2

7310   This entry describes a single row in the Visit Summary flowsheet. The single observation date and provider is applied to all other observations.

6.3.4.28.1 Specification

```
<entry>
  <organizer classCode='BATTERY' moodCode='EVN'>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.11.2.3.2'/>
    <id root=' ' extension=' '/>
    <code code='(xx-acog-battery)' displayName='ACOG Summary Visit Battery---PT--'
        codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <statusCode code='completed'/>
    <author>
      <time value=' '/>
      <assignedAuthor>
        <id root=' ' extension=' '/>
      </assignedAuthor>
    </author>
    <component>
      <observation classCode='OBS' moodCode='EVN'>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
        :
      </observation>
    </component>
    <component>
      <observation classCode='OBS' moodCode='EVN'>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
        :
      </observation>
    </component>
    :
  </organizer>
</entry>
```

6.3.4.28.2 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.11.2.3.2'/>

The <templateId> element specifies that this organizer entry conforms to the APS profile Visit Summary Flowsheet battery. The root attribute SHALL contain the value "1.3.6.1.4.1.19376.1.5.3.1.1.11.2.3.2"

7345   #### 6.3.4.28.3 <organizer classCode='BATTERY' moodCode='EVN'>

Each row in the visit Summary flowsheet of the Antepartum Summary SHALL be represented by an organizer with the classCode of 'BATTERY' and the moodCode of 'EVN'

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

7350   Each battery SHALL have a globally unique identifier.

6.3.4.28.5 <code code='(xx-acog-battery)'
codeSystem='2.16.840.1.113883.6.1'/>

The <code> element specifies the loinc code that represents the content of the battery. The codeSystem attribute SHALL contain the value '2.16.840.1.113883.6.1'. The code

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7355 attribute SHALL contain the value='(xx-acog-battery)'. It is good practice to include displayName and codeSystemName for clarity and debugging. The corresponding values are 'ACOG VISIT SUMMARY BATTERY--PT--' and 'LOINC' respectively.

6.3.4.28.6<author/><time/><assignedAuthor><id/></assignedAuthor></auth or>

7360 The <author> relation element points at the author that records the visit battery. This assignedAuthor may be different than the author of the document. The time element is used to record when the assigned author recorded the battery.

6.3.4.28.7 <statusCode code='completed'/>

The status code for all batteries SHALL be 'completed'

7365 **6.3.4.28.8 <component>**

The battery is made of several component simple observations. The following table lists the allowable LOINC codes, displayNames, and observation types, and unit of measures for these observations.

LOINC Code	displayName	xsi:type	units	value set
11884-4	GESTATIONAL AGE-TIME-PT-^FETUS-QN-CLINICAL.ESTIMATED	PQ	week	
11881-0	FUNDAL HEIGHT-LEN-PT-UTERUS-QN-TAPE MEASURE	PQ	cm	
11876-0 (by PE) or 11877-8 (by US)	FETAL PRESENTATION-TYPE-PT-PELVIS-NOM-PALPATION or FETAL PRESENTATION-TYPE-PT-PELVIS-NOM-US	CD		SNOMED CT Vertex (70028003) Breech (6096002) Transverse (73161006) Oblique (63750008) Compound (124736009) Brow (8014007) Face (21882006)
11948-7 or (xx-fetal-hr-ausc)	HEART RATE-NRAT-PT-^FETUS-QN-US.MEASURED or HEART RATE-NRAT-PT-^FETUS-QN-AUSCULTATION	PQ	/min	
(xx-fetal-movement)	MOVEMENT-FIND-PT-^FETUS-ORD-PATIENT REPORTED	CO		SNOMED CT fetal movement activity (finding) CID 364755008 baby kicks a lot (finding) CID 276368003 baby not moving (finding) CID 276370007 reduced fetal movement (finding) CID 276369006 fetal movements present (finding) CID 289431008

_____

				fetal movements felt (finding) CID 268470003 fetal movements seen (finding) CID 169731002
(xx-SS-Preterm-Labor)	PRETERM LABOR SYMPTOMS-FIND-PT-^PATIENT-QL-CLINICAL JUDGEMENT	BL		
(xx-cerv-dil-palp) or (xx-cerv-dil-us)	DILATION-LEN-PT-CERVIX-QN-PALPATION or DILATION-LEN-PT-CERVIX-QN-US	PQ	cm	
11867-9	EFFACEMENT-PRCTL-PT-CERVIX-ORD-PALPATION	PQ	percent	
11961-0	LONG AXIS-LEN-PT-CERVIX-QN-US.MEASURED	PQ	cm	
8480-6	INTRAVASCULAR SYSTOLIC-PRES-PT-ARTERIAL SYSTEM-QN-	PQ	mmHg	
8462-4	INTRAVASCULAR DIASTOLIC-PRES-PT-ARTERIAL SYSTEM-QN-	PQ	mmHg	
3141-9	BODY WEIGHT-MASS-PT-^PATIENT-QN-MEASURED	PQ	g, kg, lb_av, or oz_av	
1753-3	ALBUMIN-ACNC-PT-UR-ORD-	CO		SNOMED CT Negative (finding) CID 167273002 Trace (finding) CID 167274008 1+ (finding) CID 167275009 2+ (finding) CID 167276005 3+ (finding) CID 167277001 4+ (finding) CID 167278006
2349-9 or 25428-4(test strip)	GLUCOSE-ACNC-PT-UR-ORD- or GLUCOSE-ACNC-PT-UR-ORD-TEST STRIP	CO		SNOMED CT Negative (finding) CID 167261002 Trace (finding) CID 167262009 1+ (finding) CID 167264005 2+ (finding) CID 167265006 3+ (finding) CID 167266007 4+ (finding) CID 167267003

44966-0	EDEMA-FIND-PT-^PATIENT-ORD-	CO		SNOMED CT Trace xx-trace-edema 1+ pitting edema 420829009 2+ pitting edema 421605005 3+ pitting edema 421346005 4+ pitting edema 421129002
38208-5	PAIN SEVERITY-FIND-PT-^PATIENT-ORD-REPORTED	CO		0 (no pain) : 10 (worst possible pain) Note: This observation should correspond to the functional status pain score observation
(xx-time-to-next-appt) or ?39165	TIME TO NEXT VISIT- or ?Date next screen visit-TmStp-PT-^PATIENT-QN-CPHS	PQ	day,week,mo	
48767-8	ANNOTATION COMMENT-FIND-PT-^PATIENT-NAR-	ED		

6.3.4.28.9 Schematron

7370
```
-->>TODO:<<--
```

6.3.4.29 Advance Directive Observation 1.3.6.1.4.1.19376.1.5.3.1.4.13.7

An advance directive observation is a simple observation that uses a specific vocabulary, and inherits constraints from CCD.

6.3.4.29.1 Standards

CCD ASTM/HL7 Continuity of Care Document

_____

7375 **6.3.4.29.2 Specification**

```
<observation typeCode='OBS' moodCode='EVN'>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
 <templateId root='2.16.840.1.113883.10.20.1.17'/>
 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.7'/>
 <id root=' ' extension=' '/>
 <code code=' ' codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'/>
 <text><reference value='#xxx'/></text>
 <statusCode code='completed'/>
 <effectiveTime value=' '/>
  <value xsi:type='BL' value='true|false'/>
<
  <reference typeCode='REFR'>
   <templateId root='2.16.840.1.113883.10.20.1.36'/>
   <externalDocument classCode='DOC' moodCode='EVN'>
     <id root=' ' extension=' '/>
     <text><reference value=' '/></text>
   </externalDocument>
 </reference>
</observation>
```

7395 An advanced directive <observation> shall be represented as shown above. They shall not contain any <repeatNumber>, <interpretationCode>, <methodCode> or <targetSiteCode> elements.

6.3.4.29.3 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>
<templateId root='2.16.840.1.113883.10.20.1.17'/>
7400   <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13.7'/>

The <templateId> elements shown above shall be present, and indicated that this is an Advance Directive entry.

6.3.4.29.4 <code code=' ' codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'/>

7405 The <code> element records the type of advance directive. It should use one of the following SNOMED codes in the table below.

Code	Description	Data Type
304251008	Resuscitation	BL
52765003	Intubation	
225204009	IV Fluid and Support	
89666000	CPR	
281789004	Antibiotics	
78823007	Life Support	
61420007	Tube Feedings	
116859006	Transfusion of blood product	
71388002	Other Directive	<value> not permitted

_____

_____

6.3.4.29.5 <value xsi:type='BL' value='true|false'/>

The advance directive observation may include a <value> element using the Boolean
(xsi:type='BL') data type to indicate simply whether the procedure described is permitted.
7410   Absence of the the <value> element indicates that an advance directive of the specified
type has been recorded, and must be examined to determine what type of treatment
should be performed. The value element is not permitted when the <code> element
describes an *Other directive*.

6.3.4.29.6 <reference typeCode='REFR'>
7415   **<templateId root='2.16.840.1.113883.10.20.1.36'/>**
         <externalDocument classCode='DOC' moodCode='EVN'>
          <id root=' ' extension=' '/>
          <text><reference value=' '/></text>

The advanced directive observation may contain a single reference to an external
7420   document. That reference shall be recorded as shown above. The <id> element shall
contain the appropriate root and extension attributes to identify the document. The <text>
element may be present to provide a URL link to the document in the value attribute of
the <reference> element. If the <reference> element is present, the Advance Directive in
the narrative shall contain a <linkHTML> element to the same URL found in the value
7425   attribute.

6.3.4.30 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.

6.3.4.30.1 Parent Template

7430   The parent of this template is [Simple Observation].

6.3.4.30.2 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'>
   <translation code='406127006' displayName='Pain intensity'
     codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'/>
 </code>
 <text><reference value='#xxx'/></text>
 <statusCode code='completed'/>
 <effectiveTime value=' '/>
 <repeatNumber value=' '/>
 <value xsi:type='CO|REAL' />
 <interpretationCode code= codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED
CT'/>
 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>
 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>
</observation>
```

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6.3.4.30.3 <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.

7455 **6.3.4.30.4 <code code='38208-5' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'>
<translation code='406127006' displayName='Pain intensity' codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'/>**

7460 The <code> element indicates what kind of pain observation was made. It shall contain the code and codeSystem attribute values shown above. The <translation> element may be present, and provides a mapping to SNOMED CT of the observation. If present, is shall have the code and codeSystem attribute values shown above.

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. -->>The code system to use for this observation<<--

6.3.4.30.5 <value xsi:type='CO' value=' ' />

7465 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.

7470 **6.3.4.30.6 <interpretationCode code='301379001|40196000|76948002|67849003' codeSystem='2.16.840.1.113883.6.96' codeSystemName='SNOMED CT'/>**

The <interpretationCode> element should be present to provide an interpretation of the
7475 pain scale assessment using SNOMED CT. When the <interpretationCode> element is present, the <translation> element described above shall be present. These interpretations are provided to assist decision support systems that are making secondary use of the assessment information, and are not intended to replace the score values.

Pain Score Range	Code	Description
0	301379001	No Present Pain
1-3	40196000	Mild Pain
4-6	50415004	Moderate Pain
7-9	76948002	Severe Pain
10	67849003	Excruciating Pain

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~~**6.3.4.30.7 <methodCode code=' ' codeSystem=' ' codeSystemName=' '/>**~~

7480 The <methodCode> should not be present in a Pain Score Observation, as the method is implied by the <code> element.

6.3.4.30.8 <targetSiteCode code=' ' codeSystem=' ' codeSystemName=' '/>

The <targetSiteCode> element should be present, and shall indicate the location of the pain being assessed.

7485 ## 6.4 HL7 Version 2 Content Modules

This section contains content modules based upon the HL7 Version 2 Standard, and related standards and/or implementation guides.

6.5 PCC Value Sets

This section contains value sets used by Content Modules.

7490 ### 6.5.1 APR History and Physical History of Past Illness Value Set
1.3.6.1.4.1.19376.1.5.3.1.1.16.5.1

Name	Opt	Type	Units	SNOMED CT
Diabetes	R2	CD		73211009
Hypertension	R2	CD		38341003
Heart Disease	R2	CD		56265001
Autoimmune Disorder	R2	CD		85828009
Kidney Disease	R2	CD		90708001
UTI	R2	CD		68566005
Neurologic	R2	CD		118940003
Epilepsy	R2	CD		84757009
Psychiatric	R2	CD		74732009
Depression	R2	CD		41006004
Postpartum Depression	R2	CD		58703003
Hepatitis	R2	CD		128241005
Liver Disease	R2	CD		235856003
Varicosities	R2	CD		276504003
Phlebitis	R2	CD		61599003

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Thyroid Dysfunction	R2	CD		14304000
Trauma	R2	CD		417746004
Violence	R2	CD		225818009
History of Blood Transfusion	R2	CD		116859006
D(Rh) Sensitized	R2	CD		3885002
Pulmonary	R2	CD		19829001
Seasonal Allergies	R2	CD		367498001
Drug Allergy	R2	CD		416098002
Latex Allergy	R2	CD		300916003
Food Allergy	R2	CD		414285001
Breast	R2	CD		79604008
Gyn Surgery	R2	CD		12658000
Operations	R2	CD		387713003
Hospitalizations	R2	CD		32485007
Anesthetic Complications	R2	CD		33211000
History of Abnormal Pap	R2	CD		274688009
Uterine Anomaly/DES	R2	CD		37849005
DES Exposure	R2	CD		xx-desexposure
Infertility	R2	CD		8619003
Art Treatment	R2	CD		63487001

6.5.2 APR History and Physical Social History Value Set
1.3.6.1.4.1.19376.1.5.3.1.1.16.5.3

Name	Opt	Type	Units	SNOMED CT	LOINC
Tobacco Use	R2	ED		266918002	
Alcohol Use	R2	ED		160573003	
Illicit/Recreational Drugs	R2	ED		xx-illicitdrugs	

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6.5.3 APR History and Physical Family History and Genetic Screening
7495   Value Set 1.3.6.1.4.1.19376.1.5.3.1.1.16.5.4

Name	Opt	Type	Units	SNOMED CT	LOINC
Thalassemia	R2	CD		40108008	
Neural Tube Defect	R2	CD		253098009	
Congenital Heart Defect	R2	CD		13213009	
Down Syndrome	R2	CD		41040004	
Tay-Sachs	R2	CD		111385000	
Canavan Disease	R2	CD		80544005	
Familial Dysautonomia	R2	CD		29159009	
Sickle Cell Disease	R2	CD		417357006	
Sickle Cell Trait	R2	CD		16402000	
Hemophilia	R2	CD		90935002	
Blood Disorders	R2	CD		414022008	
Muscular Dystrophy	R2	CD		73297009	
Cystic Fibrosis	R2	CD		190905008	
Huntington's Chorea	R2	CD		58756001	
Mental Retardation	R2	CD		91138005	
Autism	R2	CD		408856003	
Chrosomosal Disorder Includes any inherited genetic or chromosomal disorders	R2	CD		409709004	
Maternal Metabolic Disorder	R2	CD		75934005	
Dysmorphism (Birth Defect) Patient or baby's father has a child with birth defects	R2	CD		276720006	
Recurrent pregnancy loss/stillbirth	R2	CD		102878001	

6.5.4 APR History and Physical Review of Systems Menstrual History
               Value Set 1.3.6.1.4.1.19376.1.5.3.1.1.16.5.5

Name	Opt	Type	Units	SNOMED	LOINC

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				CT	
Date of Last Menstrual Period	R	TS		21840007	
Menses Monthly	R	BL		364307006	
Prior Menses Date	R	TS		21840007	
Duration of Menstrual Flow Frequency	R	PQ	days	364306002	
on Birth Control Pills at conception	R	BL		xx-onbcp	
Menarche	R	PQ		398700009	
hCG+	R	TS		xx-dateofhcg	

6.5.5 APR History and Physical History of Infection Value Set
1.3.6.1.4.1.19376.1.5.3.1.1.16.5.6

Name	Opt	Type	Units	SNOMED CT	LOINC
Live with someone with TB or exposed to TB	R2	CD		170464005	
History of Genital Herpes	R2	CD		402888002	
Exposed to Genital Herpes	R2	CD		240480009	
Rash since LMP	R2	CD		49882001	
Viral illness since LMP	R2	CD		34014006	
Rash or viral illness since LMP	R2	CD		49882001	
Hepatitis B	R2	CD		235871004	
Hepatitis C	R2	CD		235872006	
History of STD	R2	CD		8098009	
History of Gonorrhea	R2	CD		15628003	
History of Chlamydia	R2	CD		312099009	
History of HPV	R2	CD		302812006	
History of HIV	R2	CD		165816005	
History of Syphilis	R2	CD		76272004	

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7500 **6.5.6 APR Laboratory Value Set 1.3.6.1.4.1.19376.1.5.3.1.1.16.5.7**

Lab	LOINC Code	Comments
Antibody Screen (AB)	890-4 Ab Screen	
Blood Type	XX-AR ABO RH (profile test)	XX-AR: A LOINC profile code will be requested
Hepatitis B virus (HBV) surface Antigen (Ag)	5196-1 HBV surface Ag (EIA) 5195-3 HBV surface Ag 5197-9 HBV surface Ag (RIA) 7905-3 HBV surface Ag (Neut)	
Hemoglobin (Hgb)/Hematocrit (Hct)	718-7 Hgb 4544-3 Hct (Automated count) 30350-3 Hgb	
Pap Test/Human papilloma virus (HPV)	21440-3 HPV I/H Risk DNA Cervix (Probe) 21441-1 HPV Low Risk DNA Cervix (Probe) 10524-7 Cytology Cervix 18500-9 Thin Prep Cervix 19765-7 Cytology Cervix/Vaginal (Nominal) 19766-5 Cytology Cervix/Vaginal (Narrative)	
Rubella Virus (RUBV) Antibody (Ab)	5334-8 RUBV Ab IgG (EIA) 25514-1 RUBV Ab IgG 40667-8 RUBV Ab IgG (EIA) 8014-3 RUBV Ab IgG	
Urine Culture Screen	630-4 Bacteria Urine Culture	
Hemoglobin (Hgb) Electrophoresis	XX-HTPR Hemoglobinopathy/Thalassemia Panel (Reflexive) (Profile)	XX-HTPR: A LOINC profile code will be requested
Purified protein derivative (PPD)	1647-7 Purified protein derivative skin test	
Chlamydia	6347-9 Chlamydia Ag XX-CTD Chlamydia Trachomatis (DFA) (Profile) XX-CTA Chlamydia Trachomatis (Aptima) (Profile) 6349-5 Neisseria Gonorrhoeae XX-CTNGA Chlamydia Trachomatis Neisseria Gonorrhoeae (Aptima) (Profile)	XX-CTD, XX-CTA and XX-CTNGA: A LOINC profile code will be requested
Gonorrhea	XX-CTNGA Chlamydia Trachomatis Neisseria Gonorrhoeae (Aptima) (Profile)	XX-CTNGA and XX-CNGA: A LOINC profile code will be

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	691-6	Neisseria Gonorrhoeaea	requested
	9568-7	Neisseria Gonorrhoeaea Ab	
	XX-CNGA	Chlamydia Neisseria Gonorrhoeae (Aptima) (Profile)	
Ultrasound	35096-7	OB Ultrasound Panel	
MSAFP Multiple Markers	XX-AFPM	Alpha-Feto Protein (Maternal) (Profile)	XX-AFPM and XX-AFP: A LOINC profile code will be requested
	1834-1	Alpha-1 Fetoprotein	
	8270-1	Prenatal Risk Quad Screen	
	XX-AFP	Alpha-Feto Protein (Profile)	
Amnio Chorionic Villus Sampling (CVS)	XX-CVS CVS		XX-CVS: A LOINC profile code will be requested
Karotype	33373-2	Karyotype (Amino Fluid)	
	33774-0	Karyotype (CVS)	
Amniotic Fluid (AFP)	XX-AFPAFR	Alpha-Feto Protein, Amniotic Fluid (Reflexive) (Profile)	XX-AFPAFR: A LOINC profile code will be requested
Diabetes Screen	12646-6	Glucose Challenge, Pregnant (1hr)	
Glucose Tolerance Test (GTT)	12646-6	Glucose Challenge, Pregnant (1hr)	XX-GTP2 and XX-GTP3: A LOINC profile code will be requested
	XX-GTP2	Glucose Tolerance, Pregnant (2hr)	
	XX-GTP3	Glucose Tolerance, Pregnant (3hr)	
Anti-D Immune Globulin (RhIG)	XX-RHIG Anti-D Immune Globulin (RhIG)		XX-RHIG: A LOINC profile code will be requested
Venereal Disease Research Laboratory (VDRL)	20507-0	Rapid Plasma Reagin (RPR)	XX-RWRTT and XX-RR: A LOINC profile code will be requested
	XX-RWRTT	RPR with Reflex to Titer (Reflexive) (Profile)	
	XX-RR	Rubella and RPR (Profile)	
Group B Strep	XX-BSGB	Beta Strep Group B (PCR)	XX-BSGB: A LOINC profile code will be requested
	11267-2	Strep Group B	
Beta Human Chorionic Gonadotropin (HCG)	21198-7	Beta HCG	
Urinalysis (Urine Screen)	XX-U	Urinalysis (Profile)	XX-U, XX-UM, XX-UMA, XX-UD, XX-UDO, XX-UMO and XX-UMON: A LOINC profile code will be requested
	XX-UM	Urinalysis with Microscopic (Profile)	
	XX-UMA	Urinalysis with Microscopic Analysis (Profile)	
	XX-UD	Urinalysis Dipstick (Profile)	
	XX-UDO	Urinalysis Dipstick Only (Profile)	

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	XX-UMO Urinalysis Microscopic Only (Profile) XX-UMON Urinalysis Microscopic Only (New)(Profile)	
Aneuploidy Screening (Ultrasound)	XX-ASU Aneuploidy Screening (Ultrasound)	XX-ASU: A LOINC profile code will be requested
First Trimester Screening with Nuchal Translucency and maternal serum	XX-NTMS Nuchal Translucency and Maternal Serum	XX-NTMS: A LOINC profile code will be requested
Maternal Serum Triple Screen	XX-MSTS Maternal Serum Triple Screen (Profile	XX-MSTS: A LOINC profile code will be requested
Thyroid Stimulating Hormone (TSH)	11580-8 Thyrotropin (3rd generation) 3016-3 TSH 5385-0 Thyrotropin Receptor Ab	
Triiodothyronine (T3)	3051-0 T3 Free 3052-8 T3 Reverse 3054-4 T3 True 3050-2 T3 Resin Uptake XX-T3FT T3 Free and Total (Profile)	XX-T3FT: A LOINC profile code will be requested
Varicella Zoster Virus (VZV) Ab	22600-1 Varicella Zoster Virus Ab XX-VZVP Varicella Zoster Virus (PCR) (Profile) 10860-5 Varicella Zoster Virus 6584-7 Virus Identified	XX-VZVP: A LOINC profile code will be requested

6.5.7 APR Education Value Set 1.3.6.1.4.1.19376.1.5.3.1.1.16.5.8

Name	Opt	Type	units	SNOMED CT	LOINC
First Trimester					
Risk factors identified by prenatal history	R2	CD		xx-edu-prenatalriskfactors	
Anticipated course of prenatal care	R2	CD		17629007	
Special Diet	R2	CD		171054004	
Nutrition and weight gain counseling	R2	CD		429095004	
Toxoplasmosis precautions (cats/raw meat)	R2	CD		xx-edu-toxoplasmosis	
Sexual activity	R2	CD		162169002	
Exercise	R2	CD		171056002	

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Influenza vaccine	R2	CD		xx-edu-influenza
Smoking/tobacco counseling	R2	CD		171055003
Environmental/work hazards	R2	CD		370995009
Travel	R2	CD		xx-edu-travel
Alcohol	R2	CD		171057006
Illicit/recreational drugs	R2	CD		171058001
Use of any medications	R2	CD		xx-edu-useofmeds
Indications for ultrasound	R2	CD		xx-edu-indicationsforultrasound
Domestic violence	R2	CD		413457006
Seatbelt use	R2	CD		xx-edu-seatbeltuse
Childbirth classes/hospital facilities	R2	CD		61324002
Second Trimester				
Childbirth classes/hospital facilities	R2	CD		61324002
Signs and symptoms of preterm labor	R2	CD		xx-edu-pretermlaborsignssymptoms
Abnormal Lab Values	R2	CD		410299006
Influenza vaccine	R2	CD		xx-edu-fluvaccine
Selecting a newborn care provider	R2	CD		xx-edu-newborncareprovider
Postpartum family planning	R2	CD		54070000
Tubal sterilization	R2	CD		243064009
Third Trimester				
Anesthesia/analgesia plans	R2	CD		243062008
Fetal movement monitoring	R2	CD		xx-edu-fetalmovement
Labor signs	R2	CD		xx-edu-sslabor
VBAC counseling	R2	CD		xx-edu-vbac
Signs & Symptoms of Pregnancy-induced hypertension	R2	CD		xx-edu-sspreclampsia

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Postterm counseling	R2	CD		xx-edu-postterm
Circumcision	R2	CD		184002001
Bottle feeding	R2	CD		169644004
Breast feeding	R2	CD		169643005
Postpartum depression	R2	CD		xx-edu-ssppd
Newborn education (Newborn screening, jaundice, SIDS, car seat)	R2	CD		75461000
Family medical leave or disability forms	R2	CD		40791000
Tubal sterilazation consent signed	R2	CD		408835000