

Integrating the Healthcare Enterprise



5

**IHE Patient Care Coordination (PCC)
Technical Framework Supplement
2009-2010**

10

**Antepartum Record
(APR)**

15

**Draft for Public Comment
June 1, 2009**

This is a supplement to the IHE PCC Technical Framework V4.0.

It is submitted for Public Comment between **June 1, 2009 and July 1, 2009.**

Comments shall be submitted within that period to <http://forums.rsna.org>:

1. Select the “IHE” forum
2. Select PCC Technical Framework
3. Select 2009-2010 Supplements for Public Comment
4. Select “APR”

Please use the Public Comment Template provided when starting your New Thread.

Details about IHE may be found at: www.ihe.net

Details about the IHE PCC may be found at:

<http://www.ihe.net/pcc/committees/index.cfm>

Details about the structure of IHE Technical Frameworks and Supplements may be found at: <http://www.ihe.net/About/process.cfm> and <http://www.ihe.net/profiles/index.cfm>

The current version of the IHE PCC Technical Framework may be found at:

http://www.ihe.net/Technical_Framework/index.cfm

These “boxed” instructions are for the author to indicate to the volume editor how to integrate the relevant section(s) into the overall Technical Framework

<i>Replace Section X.X by the following:</i>
--

25

Table of Contents

	Introduction.....	5
	Profile Abstract	5
30	Open Issues and Questions	5
	Closed Issues.....	5
	1.7 History of Annual Changes.....	6
	2.1 Dependencies among Content Profiles	6
	W Antepartum Summary (APS) Content Profile.....	7
35	W.1 Scope and Purpose.....	7
	W.2 Use Cases	7
	W.3 Actors/ Transactions.....	7
	W.4 Antepartum Summary Content Profile Options	7
	W.5 Grouping.....	8
40	W.6 Requirements of APS Actors	9
	W.7 Content Modules	10
	W.8 Process Flow	10
	X Antepartum History and Physical (APHP) Content Profile.....	11
	X.1 Scope and Purpose	11
45	X.2 Use Cases	11
	X.3 Actors/ Transactions.....	11
	X.4 Antepartum History and Physical Content Profile Options	12
	X.5 Grouping	12
	X.6 Requirements of APHP Actors	13
50	X.7 Content Modules	14
	X.8 Process Flow	15
	Y Antepartum Education (APE) Content Profile.....	15
	Y.1 Scope and Purpose	15
	Y.2 Use Cases	15
55	Y.3 Actors/ Transactions.....	16
	Y.4 Antepartum Education Content Profile Options	16
	Y.5 Grouping	16
	Y.6 Requirements of APE Actors	18
	Y.7 Content Modules	19
60	Y.8 Process Flow	19
	Z Antepartum Laboratory (APL) Content Profile	20
	Z.1 Scope and Purpose.....	20
	Z.2 Use Cases.....	20
	Z.3 Actors/ Transactions	20
65	Z.4 Antepartum Laboratory Content Profile Options	20
	Z.5 Grouping	21
	Z.6 Requirements of APHP Actors.....	22
	Z.7 Content Modules.....	23
	Z.8 Process Flow	24

70	Volume 2.....	38
	1 Preface to Volume 2	39
	2 Introduction.....	40
	3 IHE Transactions	41
	4 IHE Patient Care Coordination Bindings	42
75	5 Namespaces and Vocabularies	43
	6 PCC Content Modules	44
	6.1 Conventions.....	44
	6.2 Folder Content Modules	44
	6.3 HL7 Version 3.0 Content Modules	44
80		

Introduction

No changes to Final Text

85

Profile Abstract

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:

90

1. Antepartum History & Physical - The initial assessment and physical
2. Antepartum Laboratory - Laboratory Evaluations
3. Antepartum Education - Education Record

Additional commonly used forms not included in this profile are:

95

1. A patient-generated obstetric medical history
2. A postpartum form

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.

100

Open Issues and Questions

1. This supplement defines four content profiles but does not define the overall APR profile. The APR profile is now dormant until re-written.
2. How does the XDS Folder structure need to be handled?
3. Several LOINC and SNOMED codes are in the process of being created. These codes are denoted by a preceding "xx-" or "XX-" with an abbreviated description of the code following.

105

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 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**

110

115

Volume 1

1.7 History of Annual Changes

120 <Brief overview of “what’s new” in the given year of the Technical Framework.>

Add the following bullet to the end of the bullet list in Section 1.7

- Removed the APR profile in anticipation of that profile being rewritten in a new documentation cycle.
- 125 • Added the four content profiles in support of creating the antepartum record; these profiles describes the content and format of summary documents used during Antepartum care. A future profile will document how these summary documents are pulled together with workflow steps.

Add the following to the end of Section 1.1.5 (Copyright Permissions)

130 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).

135 The Antepartum Record Profile (APR) describes the content structures and specifications the American College of Obstetricians and Gynecologists (ACOG) views are necessary 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
 140 other context related to the EMR product or service.

2.1 Dependencies among Content Profiles

Add the following to Table 2-5-1

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

145

Add Section W

W Antepartum Summary (APS) Content Profile

W.1 Scope and Purpose

W.2 Use Cases

150 There are two actors in this profile, the Content Creator and the Content Consumer.

W.3 Actors/ Transactions

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

155
160



Figure W.1-1 Antepartum Summary Actor Diagram

165 W.4 Antepartum Summary Content Profile Options

Options that may be selected for this Content Profile are listed in the table X.2-1 along with the Actors to which they apply. Dependencies between options when applicable are specified in notes.

Actor	Option	Section
Content Consumer	View Option (See Note 1)	PCC TF-1: 2.13.1
	Document Import Option (See Note 1)	PCC TF-1: 2.13.2
	Section Import Option (See Note 1)	PCC TF-1: 2.13.3
	Discrete Data Import Option (See Note 1)	PCC TF-1: 2.13.4
Content Creator	No options defined	

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

W.5 Grouping

W.5.1 Content Bindings for XDS, XDM, and XDR

175 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:

- 180 • 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.
- 185 • 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
190 grouped with actors from other IHE Profiles.

W.5.2 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
195 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.

W.5.3 Notification of Document Availability (NAV)

200 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
205 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
210 processed.

W.5.4 Document Digital Signature (DSG)

215 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 signature document and may perform the verification against the signed document content.

W.6 Requirements of APS Actors

220 This section describes the specific requirements for each Actor defined within this profile. Specific details can be found in Volume 1 and Volume 2 of the Technical Framework.

W.6.1 Content Creator

1. A Content Creator shall be able to create an APS Document according to the specifications for that content profile found in PCC TF-2.
- 225 2. A Content Creator shall be grouped with the Time Client Actor, and shall synchronize its clock with a Time Server.
3. A Content Creator shall be grouped with the Secure Node or Secure Application Actor of the ATNA profile.
- 230 4. All activity initiated by the application implementing the Content Creator shall generate the appropriate audit trail messages as specified by the ATNA Profile. The bare minimum requirements of a Content Creator are that it be able to log creation and export of clinical content.
5. A Content Creator shall use secure communications for any document exchanges, according to the specifications of the ATNA profile.

W.6.1 Content Consumer

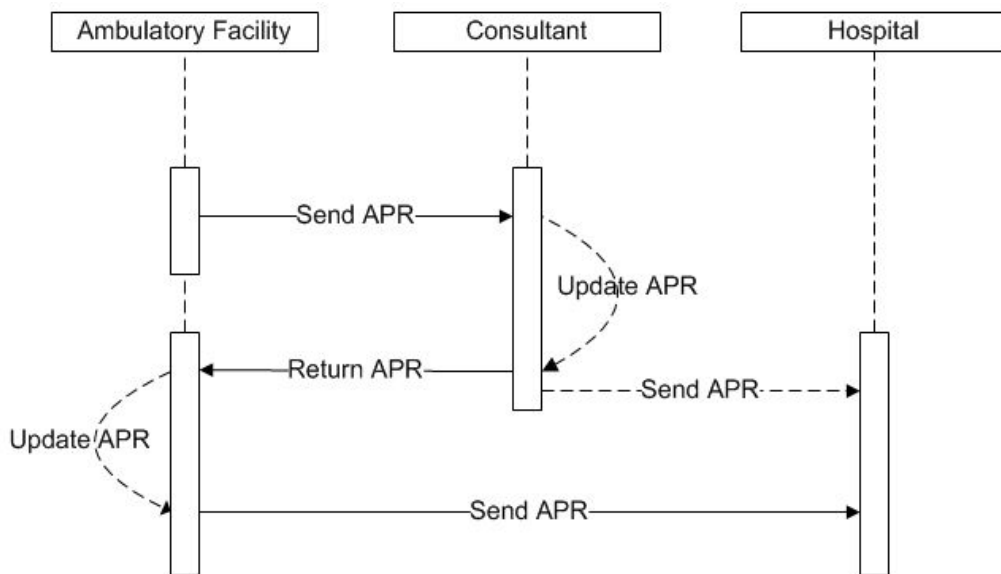
- 235 1. A Content Consumer shall be able to consume an APS document.
2. A Content Consumer shall implement the View Option or Discrete Data import option, or both.
3. A Content Consumer that implements the Document Import or Section Import Option shall implement the View Option as well.
- 240 4. A Content Consumer that implements the View option shall be able to:
 - a. Demonstrate rendering of the document for display.
 - b. Print the document.
 - c. Display the document with its original style sheet.
 - d. Support traversal of any links contained within the document.
- 245 5. A Content Consumer that implements the Document Import Option shall:
 1. Store the document.

2. Demonstrate the ability to access the document again from local storage.
6. A Content Consumer that implements the Section Import Option shall offer a means to import one or more document sections into the patient record as free text.
7. A Content Consumer that implements the Discrete Data Import Option shall offer a means to import structured data from one or more sections of the document.
8. A Content Consumer Actor shall be grouped with the Time Client Actor, and shall synchronize its clock with a Time Server.
9. All activity initiated by the application implementing the Content Consumer shall generate the appropriate audit trail messages as specified by the ATNA Profile. The bare minimum requirements of a Content Consumer are that it be able to log views or imports of clinical content.
10. A Content Consumer shall log events for any views of stored clinical content.
11. A Content Consumer shall use secure communications for any document exchanges, according to the specifications of the ATNA profile.

W.7 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 they appear in.

W.8 Process Flow



270 **Figure 0-1 Antepartum Summary Process Flow**

275 This process flow diagram shows the movement of the antepartum summary over the course 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.

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

Add Section X

X Antepartum History and Physical (APHP) Content Profile

285 **X.1 Scope and Purpose**

X.2 Use Cases

There are two actors in this profile, the Content Creator and the Content Consumer.

X.3 Actors/ Transactions

290 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
295 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



300 **Figure X.1-1 Antepartum History and Physical Actor Diagram**

X.4 Antepartum History and Physical Content Profile Options

Options that may be selected for this Content Profile are listed in the table X.2-1 along with the Actors to which they apply. Dependencies between options when applicable are specified in notes.

Actor	Option	Section
Content Consumer	View Option (See Note 1)	PCC TF-1: 2.13.1
	Document Import Option (See Note 1)	PCC TF-1: 2.13.2
	Section Import Option (See Note 1)	PCC TF-1: 2.13.3
	Discrete Data Import Option (See Note 1)	PCC TF-1: 2.13.4
Content Creator	No options defined	

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

X.5 Grouping

X.5.1 Content Bindings for 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.
- 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. Content profiles may impose additional requirements on the transactions used when grouped with actors from other IHE Profiles.

X.5.2 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 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.

335

X.5.3 Notification of Document Availability (NAV)

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 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 processed.

X.5.4 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 signature document and may perform the verification against the signed document content.

X.6 Requirements of APHP Actors

This section describes the specific requirements for each Actor defined within this profile. Specific details can be found in Volume 1 and Volume 2 of the technical framework.

X.6.1 Content Creator

1. A Content Creator shall be able to create an APHP Document according to the specifications for that content profile found in PCC TF-2.
2. A Content Creator shall be grouped with the Time Client Actor, and shall synchronize its clock with a Time Server.
3. A Content Creator shall be grouped with the Secure Node or Secure Application Actor of the ATNA profile.
4. All activity initiated by the application implementing the Content Creator shall generate the appropriate audit trail messages as specified by the ATNA Profile. The bare minimum requirements of a Content Creator are that it be able to log creation and export of clinical content.
5. A Content Creator shall use secure communications for any document exchanges, according to the specifications of the ATNA profile.

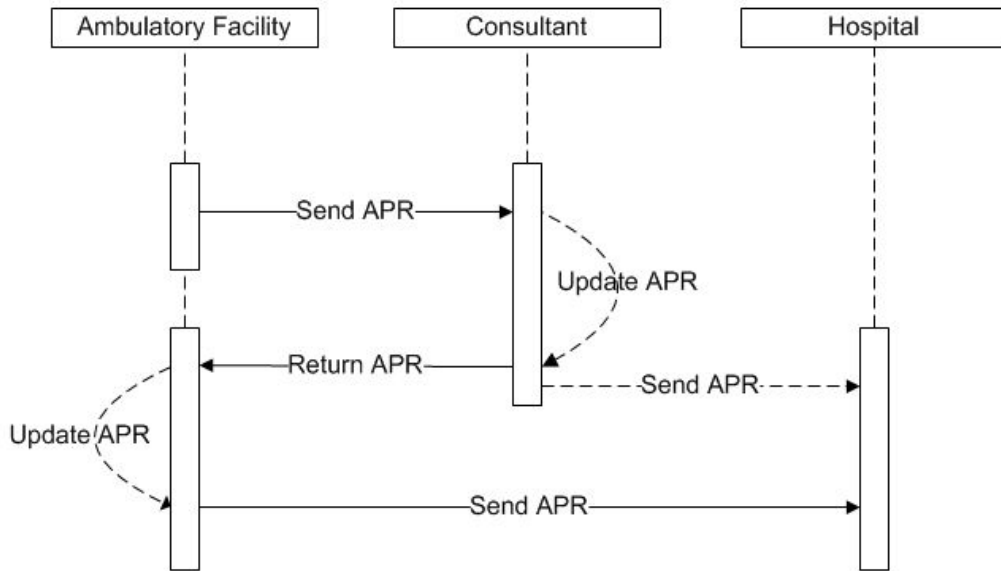
X.6.1 Content Consumer

1. A Content Consumer shall be able to consume an APHP document.
2. A Content Consumer shall implement the View Option or Discrete Data import option, or both.
- 375 3. A Content Consumer that implements the Document Import or Section Import Option shall implement the View Option as well.
4. A Content Consumer that implements the View option shall be able to:
 5. Demonstrate rendering of the document for display.
 6. Print the document.
 - 380 7. Display the document with its original style sheet.
 8. Support traversal of any links contained within the document.
 9. A Content Consumer that implements the Document Import Option shall:
 10. Store the document.
 11. Demonstrate the ability to access the document again from local storage.
 - 385 12. A Content Consumer that implements the Section Import Option shall offer a means to import one or more document sections into the patient record as free text.
 13. A Content Consumer that implements the Discrete Data Import Option shall offer a means to import structured data from one or more sections of the
 - 390 14. A Content Consumer Actor shall be grouped with the Time Client Actor, and shall synchronize its clock with a Time Server.
 15. All activity initiated by the application implementing the Content Consumer shall generate the appropriate audit trail messages as specified by the ATNA Profile. The bare minimum requirements of a Content Consumer are that it be
 - 395 16. A Content Consumer shall log events for any views of stored clinical content.
 17. A Content Consumer shall use secure communications for any document exchanges, according to the specifications of the ATNA profile.

X.7 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 they appear in.

X.8 Process Flow



405

Figure 0-1 Antepartum Summary Process Flow

This process flow diagram shows the movement of the antepartum summary over the course 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.

410

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

415

420

Add Section Y

Y Antepartum Education (APE) Content Profile

Y.1 Scope and Purpose

Y.2 Use Cases

There are two actors in this profile, the Content Creator and the Content Consumer.

425 **Y.3 Actors/ Transactions**

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 Y.1-1 Antepartum Education Actor Diagram

Y.4 Antepartum Education Content Profile Options

440 Options that may be selected for this Content Profile are listed in the table Y.2-1 along with the Actors to which they apply. Dependencies between options when applicable are specified in notes.

Actor	Option	Section
Content Consumer	View Option (See Note 1)	PCC TF-1: 2.13.1
	Document Import Option (See Note 1)	PCC TF-1: 2.13.2
	Section Import Option (See Note 1)	PCC TF-1: 2.13.3
	Discrete Data Import Option (See Note 1)	PCC TF-1: 2.13.4
Content Creator	No options defined	

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

445

Y.5 Grouping

Y.5.1 Content Bindings for 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:

450

- 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).
- 455 • 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.
- 460 • 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 grouped with actors from other IHE Profiles.

465 **Y.5.2 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 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.

Y.5.3 Notification of Document Availability (NAV)

475 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 has received and processed the notification. A Document Consumer should provide the capability to receive a Receive Notification Transaction per the NAV Integration Profile

480 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 processed.

485 **Y.5.4 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 signature document and may perform the verification against the signed document

490 content.

Y.6 Requirements of APE Actors

This section describes the specific requirements for each Actor defined within this profile. Specific details can be found in Volume 1 and Volume 2 of the technical framework.

495 Y.6.1 Content Creator

1. A Content Creator shall be able to create an APE Document according to the specifications for that content profile found in PCC TF-2.
2. A Content Creator shall be grouped with the Time Client Actor, and shall synchronize its clock with a Time Server.
- 500 3. A Content Creator shall be grouped with the Secure Node or Secure Application Actor of the ATNA profile.
4. All activity initiated by the application implementing the Content Creator shall generate the appropriate audit trail messages as specified by the ATNA Profile. The bare minimum requirements of a Content Creator are that it be able to log
- 505 5. A Content Creator shall use secure communications for any document exchanges, according to the specifications of the ATNA profile.

Y.6.1 Content Consumer

1. A Content Consumer shall be able to consume an APE document.
- 510 2. A Content Consumer shall implement the View Option or Discrete Data import option, or both.
3. A Content Consumer that implements the Document Import or Section Import Option shall implement the View Option as well.
4. A Content Consumer that implements the View option shall be able to:
- 515 5. Demonstrate rendering of the document for display.
6. Print the document.
7. Display the document with its original style sheet.
8. Support traversal of any links contained within the document.
9. A Content Consumer that implements the Document Import Option shall:
- 520 10. Store the document.
11. Demonstrate the ability to access the document again from local storage.
12. A Content Consumer that implements the Section Import Option shall offer a means to import one or more document sections into the patient record as free text.

- 525 13. A Content Consumer that implements the Discrete Data Import Option shall offer a means to import structured data from one or more sections of the document.
14. A Content Consumer Actor shall be grouped with the Time Client Actor, and shall synchronize its clock with a Time Server.
- 530 15. All activity initiated by the application implementing the Content Consumer shall generate the appropriate audit trail messages as specified by the ATNA Profile. The bare minimum requirements of a Content Consumer are that it be able to log views or imports of clinical content.
16. A Content Consumer shall log events for any views of stored clinical content.
- 535 17. A Content Consumer shall use secure communications for any document exchanges, according to the specifications of the ATNA profile.

Y.7 Content Modules

540 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 they appear in.

Y.8 Process Flow

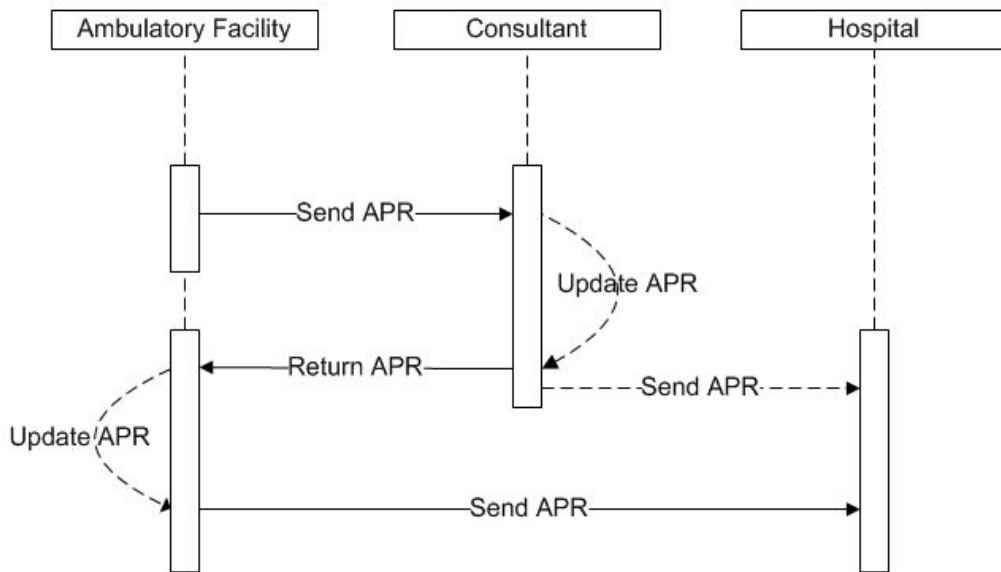


Figure 0-1 Antepartum Summary Process Flow

545 This process flow diagram shows the movement of the antepartum summary over the course 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.

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

555

Add Section Z

Z Antepartum Laboratory (APL) Content Profile

Z.1 Scope and Purpose

Z.2 Use Cases

560 There are two actors in this profile, the Content Creator and the Content Consumer.

Z.3 Actors/ Transactions

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

565

570



Figure Z.1-1 Antepartum Lab Actor Diagram

Z.4 Antepartum Laboratory Content Profile Options

Options that may be selected for this Content Profile are listed in Table X.2-1 along with the Actors to which they apply. Dependencies between options when applicable are specified in notes.

Actor	Option	Section
Content Consumer	View Option (See Note 1)	PCC TF-1: 2.13.1
	Document Import Option (See Note 1)	PCC TF-1: 2.13.2
	Section Import Option (See Note 1)	PCC TF-1: 2.13.3
	Discrete Data Import Option (See Note 1)	PCC TF-1: 2.13.4
Content Creator	No options defined	

580

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

Z.5 Grouping

Z.5.1 Content Bindings for XDS, XDM, and XDR

585 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:

- 590 • 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.
- 595 • All of these infrastructures support Security and privacy through the use of the Consistent Time (CT) and Audit Trail and Node Authentication (ATNA) profiles.

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

Z.5.2 Cross Enterprise Document Sharing, Media Interchange and Reliable Messages

605 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 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.

Z.5.3 Notification of Document Availability (NAV)

610 A Document Source should provide the capability to issue a Send Notification Transaction per the ITI Notification of Document Availability (NAV) Integration Profile

615 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
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
620 Acknowledgement to a Document Source that the notification was received and
processed.

Z.5.4 Document Digital Signature (DSG)

625 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
signature document and may perform the verification against the signed document
content.

Z.6 Requirements of APHP Actors

630 This section describes the specific requirements for each Actor defined within this
profile. Specific details can be found in Volume 1 and Volume 2 of the technical
framework.

Z.6.1 Content Creator

1. A Content Creator shall be able to create an APL Document according to the
specifications for that content profile found in PCC TF-2.
- 635 2. A Content Creator shall be grouped with the Time Client Actor, and shall
synchronize its clock with a Time Server.
3. A Content Creator shall be grouped with the Secure Node or Secure Application
Actor of the ATNA profile.
- 640 4. All activity initiated by the application implementing the Content Creator shall
generate the appropriate audit trail messages as specified by the ATNA Profile.
The bare minimum requirements of a Content Creator are that it be able to log
creation and export of clinical content.
5. A Content Creator shall use secure communications for any document
exchanges, according to the specifications of the ATNA profile.

Z.6.1 Content Consumer

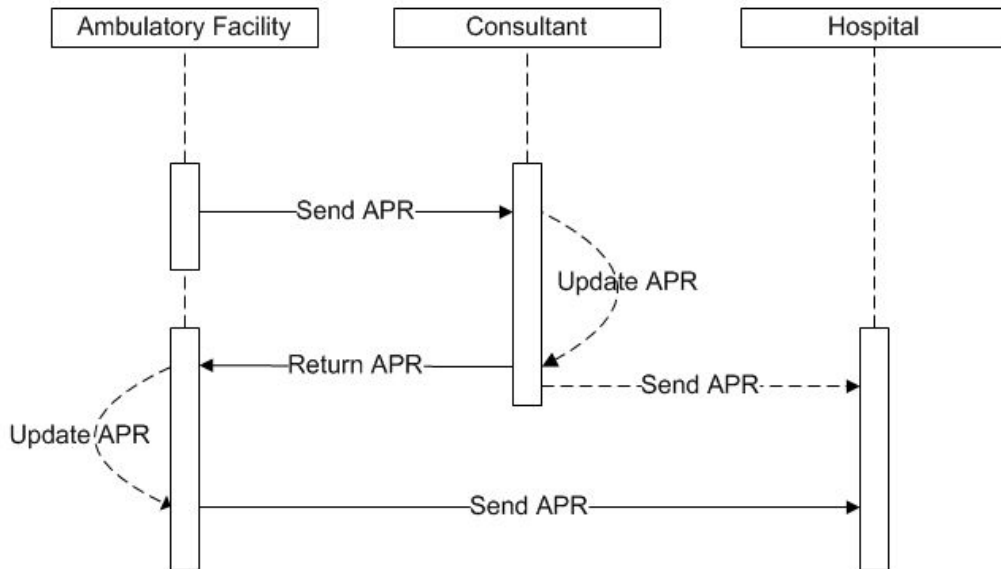
- 645 1. A Content Consumer shall be able to consume an APL document.
2. A Content Consumer shall implement the View Option or Discrete Data import
option, or both.
3. A Content Consumer that implements the Document Import or Section Import
Option shall implement the View Option as well.

- 650 4. A Content Consumer that implements the View option shall be able to:
5. Demonstrate rendering of the document for display.
6. Print the document.
7. Display the document with its original style sheet.
8. Support traversal of any links contained within the document.
- 655 9. A Content Consumer that implements the Document Import Option shall:
10. Store the document.
11. Demonstrate the ability to access the document again from local storage.
12. A Content Consumer that implements the Section Import Option shall offer a means to import one or more document sections into the patient record as free
- 660 text.
13. A Content Consumer that implements the Discrete Data Import Option shall offer a means to import structured data from one or more sections of the document.
14. A Content Consumer Actor shall be grouped with the Time Client Actor, and
- 665 shall synchronize its clock with a Time Server.
15. All activity initiated by the application implementing the Content Consumer shall generate the appropriate audit trail messages as specified by the ATNA Profile. The bare minimum requirements of a Content Consumer are that it be able to log views or imports of clinical content.
- 670 16. A Content Consumer shall log events for any views of stored clinical content.
17. A Content Consumer shall use secure communications for any document exchanges, according to the specifications of the ATNA profile.

Z.7 Content Modules

675 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 they appear in.

Z.8 Process Flow



680

Figure 0-1 Antepartum Summary Process Flow

This process flow diagram shows the movement of the antepartum summary over the course 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.

685

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

690

695 *Add the following to the Glossary*

Abortion, Induced (AB, Induced)

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

700 Abortion Spontaneous (AB, Spontaneous)

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

Ectopic pregnancy

705 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)

710 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.

Living Children

715 Number of living children of patient

Multiple births

Number of deliveries of more than one baby by patient

Premature

Delivery between 20 and 36 6/7 weeks gestation

720 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 weeks gestation.

725 Total Pregnancies

Number of total pregnancies

Antepartum History & Physical - Menstrual History

Birth Control Pills (BCP)

730 Oral contraceptives

Frequency

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

hCG+

735 Human Chorionic Gonadotropin pregnancy test.

LMP (last menstrual period)

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

- Approximate (month known) - Patient is unsure of exact date but can offer an approximate date.
- 740 • 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

Age at onset of initial menstrual period.

745 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

Last menstrual was typical in amount and duration.

750 Prior Menses

Date of most recent menstrual period.

Antepartum History & Physical - Past Pregnancies

Anesthesia

755 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 vitro) to establish a pregnancy.

760

Autoimmune disorder

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

Birth weight

765 Weight of infant at birth.

Delivery Date

Date of delivery of patient's previous pregnancies.

DES

Diethylstilbesterol

770 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

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

Infertility

780 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 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.

785 Place of Delivery

Hospital name, city and state if known.

Preterm labor

Labor that begins before 37 weeks gestation.

Pulmonary (TB, Asthma)

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

Sex Male/Female

Sex of patient's previously delivered babies.

795 Type Delivery

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

Urinary Tract Infection (UTI)

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

Uterine Anomaly

Any uterine structural abnormalities.

Varicosities/Phlebitis

Swelling or inflammation of veins.

805

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

810 Adnexa

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.

815 BP - Blood Pressure

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

820 In humans, one of the paired regions in the anterior portion of the thorax. The breasts 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)

825 Diagonal Conjugate

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

Extremities

A bodily limb or appendage.

830 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

835 The normal female pelvis.

Heart

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

HEENT

Head, Eyes, Ears, Nose and Throat

840 Height

Measurement of stature

Lungs

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

845 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

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

Sacrum

Triangular bone below the lumbar vertebrae.

Skin

855 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

860 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 alveolar processes of the jaws for the biting and mastication of food.

865 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.

870 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 symphysis pubis or 20 weeks' gestation when the fundus reaches the umbilicus.

Vagina

875 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.

880 Patient Weight

A measurement of mass.

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

885 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 protein (PAPP-A) to determine risk for trisomy 21, trisomy 13 and trisomy 18.

890

2nd Trimester serum screening

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

895 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.

900 Antibody screen

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

Anti-D Immune Globulin (RHIG)

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

905 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

910 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

915 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

920 Laboratory test to screen for gestational diabetes.

Familial Dysautonomia

925 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 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

930 Screening for genetic disorders, e.g. sickle cell, Thalassemia, Tay-Sachs, Canavan, 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)

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

GTT (if screen abnormal)

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

HBsAg Test

940 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 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

950 A blood test done to measure the different types of hemoglobin. The test can detect 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

955 Discussion with pregnant patient regarding Human Immunodeficiency Virus/ HIV 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

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

Multiple marker screening test

965 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 measured: alpha-fetoprotein, human chorionic gonadotropin, 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.

970 PPD Skin Test

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

Rubella Test

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

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.

980 Ultrasound

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

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

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.

990 Varicella

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

VDRL (Venereal Disease Research Laboratories)

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

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

First Trimester

1000 Alcohol

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

1005 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

1010 Discussion with the patient on educational programs available for childbirth and hospital choice.

Domestic violence

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

1015 Environmental/Work hazards

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

Exercise

1020 Discussion with patient on appropriate level of exercise activities during the pregnancy.

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.

1025 Indications for ultrasounds

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.

1030 Nutrition and weight gain counseling, special diet

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

Risk factors identified by prenatal history

Seatbelt use

1035 Discussion with patient on use of seatbelts.

Sexual activity

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

Smoking counseling

1040 Discussion with patient regarding smoking cessation and smoke exposure.

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.

1045 Toxoplasmosis precautions

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

Travel

Discussion with patient on travel precautions, if any.

1050 Use of any medications (including supplements, vitamins, herbs or OTC drugs)

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

Second Trimester

1055 Abnormal lab values

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

Domestic violence

1060 Screening/Discussion with patient regarding physical threats/abuse/safety concerns; referral to appropriate counseling, legal and/or social advocacy program if appropriate.

Influenza vaccine

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

Postpartum family planning/tubal sterilization

1065 Discussion with patient of intended postpartum contraception options, including tubal sterilization.

Selecting a newborn care provider

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

1070 Signs and symptoms of preterm labor

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

Smoking counseling

Discussion with patient regarding smoking cessation and smoke exposure.

1075 **Third Trimester**

Anesthesia/Analgesia plans

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

Breast or bottle feeding

1080 Discussion with patient of nutritional advantages/disadvantages of human breast milk, bottled formula; advise on available lactation consultation services.

Circumcision

Discussion with patient on circumcision of male newborn.

Domestic violence

1085 Screening/Discussion with patient regarding physical threats/abuse/safety concerns; referral to appropriate counseling, legal and/or social advocacy program if appropriate.

Family medical leave or disability forms

1090 Discussion with patient about any forms the patient will need completed for employment or insurance purposes.

Fetal Movement monitoring

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

Influenza vaccine

1095 Discussion with patient of risks/benefits of influenza and influenza vaccine during pregnancy.

Labor signs

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

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

1100 Prenatal discussion with patient of preventive public health screening procedures 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.

- Discussion of positioning of infant to reduce SIDS risk. Education regarding car seat safety.
- 1105 Postpartum depression
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
- 1110 Discussion with patient of signs and symptoms of hypertension.
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.
- 1115 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
- 1120 Notation of date the consent form for tubal sterilization signed and the initials of person witnessing.

Volume 2

1 Preface to Volume 2

1125 [No changes to Final Text](#)

2 Introduction

No changes to Final Text

3 IHE Transactions

1130

No changes to Final Text

4 IHE Patient Care Coordination Bindings

No changes to Final Text

1135 **5 Namespaces and Vocabularies**

Add the following to the IHE Format Codes table in Section 5.1.1

5.1.1 IHE Format Codes

1140 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 Type	Template ID
2008 Profile Proposals			
Antepartum Record (APR)	urn:ihe:pcc:aphp:2008 urn:ihe:pcc:aps:2007 urn:ihe:pcc:apl:2008 urn:ihe:pcc:ape:2008	text/xml	

6 PCC Content Modules

6.1 Conventions

1145

Add the following to the Folder Content Modules

6.2 Folder Content Modules

6.X.1 APR Folder Specification

1150 The APR folder was defined in the APR profile for Trial Implementation in 2008. This is now deferred waiting for the profile to be rewritten.

Add section 6.3.1.x: History and Physical Specification

1155 6.3 HL7 Version 3.0 Content Modules

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

1160 *Add Section 6.3.1.y: Antepartum Summary Specification*

6.3.1.y Antepartum Summary Specification 1.3.6.1.4.1.19376.1.5.3.1.1.11.2

1165 The Antepartum Summary represents a summary of the most critical information to an antepartum care provider regarding the status of a patient's 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.y.1 Format Code

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

1170 6.3.1.y.2 Standards

CCD [ASTM/HL7 Continuity of Care Document](#)

CDAR2 [HL7 CDA Release 2.0](#)

ACOGAR [American College of Obstetricians and Gynecologists \(ACOG\), Antepartum Record](#)

LOINC [Logical Observation Identifiers, Names and Codes](#)

SNOMED [Systemized Nomenclature for Medicine](#)

6.3.1.y.3 Data Element Index

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.y.4 Specification

1175 This section references content modules using Template ID as the key identifier. Definitions of the modules are found in either:

- IHE Patient Care Coordination Volume 2: Final Text
- IHE PCC Content Modules 2009-2010 Supplement (For Public Comment)

Table 6.3.1-1

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

<p>Plan of Care APS forms SHOULD include an observation stating if an anesthesia consult is planned. When present, the observation value for this observation is '(xx-anest-cons-pland)'. The codeSystem is '2.16.840.1.113883.6.1'. The codeSystemName is 'LOINC'. If the type of anesthesia planned is known, systems SHOULD include an observation to represent that data using the LOINC code '(xx-type-of-anesth-pland)' with a CD value including one of the following values: (General Epidural Spinal) or a Null flavor to represent unknown or not listed.</p>	R	1.3.6.1.4.1.19376.1.5.3.1.3.31
<p>Medications Medications should include start and stop date if known.</p>	R	1.3.6.1.4.1.19376.1.5.3.1.3.19
<p>Problems Related Plans should be included in the Plan of Care section.</p>	R	1.3.6.1.4.1.19376.1.5.3.1.3.6
<p>Estimated Delivery Dates</p>	R	1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.1
<p>Antepartum Visit Summary Flowsheet</p>	R	1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.2

1180 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 replacement by including a <relatedDocument typeCode='REPL'> element as below.

```
1185 <ClinicalDocument xmlns='urn:hl7-org:v3'>
1190 :
      <relatedDocument typeCode='REPL'>
        <parentDocument>
          <id root=' ' extension=' '/>
        </parentDocument>
      </relatedDocument>
    :
  </ClinicalDocument>
```

6.3.1.y.5 Conformance

1200 CDA Release 2.0 documents that conform to the requirements of this content module shall indicate their conformance by the inclusion of the appropriate <templateId> elements in the header of the document. This is shown in the sample document below. A CDA Document may conform to more than one template. This content module inherits from the [Medical Summary](#) content module, and so must conform to the requirements of that template as well, thus all <templateId> elements shown in the example below shall be included.

```

1205 <ClinicalDocument xmlns='urn:hl7-org:v3'>
      <typeId extension="POCD_HD000040" root="2.16.840.1.113883.1.3"/>
      <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.2'/>
      <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.11.2'/>
      <id root=' ' extension=' '/>
1210 <code code=' ' displayName=' '
      codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
      <title>Antepartum Summary</title>
      <effectiveTime value='20080601012005'/>
      <confidentialityCode code='N' displayName='Normal'
1215 codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
      <languageCode code='en-US'/>
      :
      <component><structuredBody>
        <component>
1220 <section>
          <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.13'/>
          <!-- Required Allergies Section content -->
          </section>
        </component>
1225 <component>
          <section>
            <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.34'/>
            <!-- Required Advance Directives Section content -->
            </section>
          </component>
1230 <component>
          <section>
            <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.31'/>
            <!-- Required Plan of Care Section content -->
            </section>
          </component>
1235 <component>
          <section>
            <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.19'/>
            <!-- Required Medications Section content -->
            </section>
          </component>
1240 <component>
          <section>
            <templateId root='1.3.6.1.4.1.19376.1.5.3.1.3.6'/>
            <!-- Required Problems Section content -->
            </section>
          </component>
1245 <component>
          <section>
            <templateId root='1.3.6.1.4.1.19376.1.5.3.1.1.11.2.2.1'/>
            <!-- Required Estimated Delivery Dates Section content -->
            </section>
          </component>
1250 <component>
          <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>
1255 </structuredBody></component>
1260 </ClinicalDocument>

```

Figure 6.3-1 Sample Antepartum Summary Document

Add Section 6.3.1.z: Antepartum History and Physical Specification

1265

6.3.1.z 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.

1270

6.3.1.z.1 Format Code

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

6.3.1.z.2 LOINC Code

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

6.3.1.z.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)

1275

6.3.1.z.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	

IHE PCC Technical Framework Supplement – Antepartum Record (APR)

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.z.5 Specification

This section references content modules using Template ID as the key identifier.

Definitions of the modules are found in either:

- IHE Patient Care Coordination Volume 2: Final Text
- IHE PCC Content Modules 2009-2010 Supplement (For Public Comment)

1280

Table 6.3.1-2

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
Ethnicity The ethnicity 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

IHE PCC Technical Framework Supplement – Antepartum Record (APR)

<p>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'.</p>	R	1.3.6.1.4.1.19376.1.5.3.1.3.18
<p>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.</p>	R	1.3.6.1.4.1.19376.1.5.3.1.1.9.15
<p>Vital Signs If Vital Signs data are present they SHALL be included as a subsection of Physical Examination.</p>	C	1.3.6.1.4.1.19376.1.5.3.1.3.25

6.3.1.z.6 Conformance

1285 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.

1290

IHE PCC Technical Framework Supplement – Antepartum Record (APR)

1295

```
<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'/>
```

1300

```
:
<component><structuredBody>
```

1305

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

1310

```
    </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 -->
```

1315

```
    </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 -->
```

1320

```
    </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 -->
```

1325

```
    </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 -->
```

1330

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

1335

```
    </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 -->
```

1345

```
    </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 -->
```

1350

```
    </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 -->
```

1355

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

1360

1365

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

Figure 6.3-2 Sample Antepartum History and Physical Document

1370

Add Section 6.3.1.a: Antepartum Lab Specification

6.3.1.a Antepartum Laboratory Specification

1.3.6.1.4.1.19376.1.5.3.1.1.16.1.2

1375

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.a.1 LOINC Code

1380

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

6.3.1.a.2 Standards

CDAR2 [HL7 CDA Release 2.0](#)

6.3.1.a.3 Conformance

1385

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.

```

1390 <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' />
1395 <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' />
1400 <confidentialityCode code='N' displayName='Normal'
          codeSystem='2.16.840.1.113883.5.25' codeSystemName='Confidentiality' />
      <languageCode code='en-US' />
      :
      <component><structuredBody>
1405 </structuredBody></component>
    </ClinicalDocument>
    
```

Figure 6.3-3 Sample Antepartum Laboratory Document

Section 6.3.1b: Antepartum Education Specification

6.3.1.b Antepartum Education Specification 1.3.6.1.4.1.19376.1.5.3.1.1.16.1.3

1410 The Antepartum Education document contains a list of patient education activities that have occurred, or have been planned to review with the patient.

6.3.1.b.1 Format Code

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

6.3.1.b.2 LOINC Code

1415 The LOINC code for this document is **34895-3** EDUCATION NOTE

6.3.1.b.3 Standards

CDAR2 [HL7 CDA Release 2.0](#)

6.3.1.b.4 Specification

This section references content modules using Template ID as the key identifier. Definitions of the modules are found in either:

- 1420 - IHE Patient Care Coordination Volume 2: Final Text
- IHE PCC Content Modules 2009-2010 Supplement (For Public Comment)

Table 6.3.1-3

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

1425

6.3.1.b.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.

1430

1435

```
<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>

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

1440

1445

1450

1455

Figure 6.3-4 Sample Antepartum Education Document

1460