**ACC, HIMSS and RSNA**

**Integrating the Healthcare Enterprise**

# IHE Patient Care Coordination Technical Framework

# Supplement 2006-2007

# Exchange of Personal Health Record Content (XPHR)

## Trial Implementation

## August 12, 2006

# 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 medical decisions is both correct and available to healthcare professionals. The IHE initiative is both a process and a forum for encouraging integration efforts. It defines a technical framework for the implementation of established messaging standards to achieve specific clinical goals. It includes a rigorous testing process for the implementation of this framework. And it organizes educational sessions and exhibits at major meetings of medical professionals to demonstrate the benefits of this framework and encourage its adoption by industry and users.

The approach employed in the IHE initiative is not to define new integration standards, but rather to support the use of existing standards, HL7, DICOM, IETF, and others, as appropriate in their respective domains in an integrated manner, defining configuration choices when necessary. 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 the American College of Cardiology (ACC), the Healthcare Information and Management Systems Society (HIMSS) and the Radiological Society of North America (RSNA). IHE Canada has also been formed. IHE Europe (IHE-EUR) is supported by a large coalition of organizations including the European Association of Radiology (EAR) and European Congress of Radiologists (ECR), the Coordination Committee of the Radiological and Electromedical Industries (COCIR), Deutsche Röntgengesellschaft (DRG), the EuroPACS Association, Groupement pour la Modernisation du Système d'Information Hospitalier (GMSIH), Société Francaise de Radiologie (SFR), Società Italiana di Radiologia Medica (SIRM), the European Institute for health Records (EuroRec), and the European Society of Cardiology (ESC). In Japan IHE-J is sponsored by the Ministry of Economy, Trade, and Industry (METI); the Ministry of Health, Labor, and Welfare; and 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 invited to join in the expansion of the IHE process across disciplinary and geographic boundaries.

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

## Table of Contents



 

# Volume I – Integration Profiles

Date: August 12, 2006

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105 These ”boxed” instructions for the author to indicate to the Volume Editor how to integrate the relevant section(s) into the overall Technical Framework

## 1 Introduction

## 1.1 Open Issues and Questions

## 1.2 Closed Issues

110 1. *Look at PHR Functional Model*
2. *Clarify that this is an extract.*
3. *How does this profile deal with time series data and summarization thereof? We recommend that no more than the last three months history of time series data be captured for various vital signs or other results that a patient might monitor on a routine*
115 *basis. For example, the vital signs section might include some recent history of various measures (e.g., blood pressure, weight), or results might include routing blood sugar measure. Please note that XPHR is not intended for communicating large volumes of these measurements. Time series information, such as that that would be generated by various automated monitoring devices are best dealt with by the Patient Care Devices*
120 *domain. We believe that this sort of information might apply other healthcare standards for communicating time series data, but that these would be communicated using other documents that might be part of the submission set that includes the PHR Extract.*
4. *Should we go to level 3 for some of these templates? We agreed to go to level 3 data structures in CDA Release 2.0 when there is a published R-MIM that covers the topic.*
125 5. *How would ATNA be applied to a patient owned computer system? We question the feasability of ATNA for PHR on a home computer system, but want to require support for it with the actors since the log of changes to the PHR data is part of the PHR data set.*
6. *What do we do about Vision? The AHIMA PHR Data Set defines a section that would contain Vision information, but went no further. We do not have the expertise to*
130 *determine what should go in this section. We defer to the IHE Eyecare domain with respect to whether such a section should be included in this profile, and if so, what content it should provide.*
7. *What do we do about Dental? The AHIMA PHR Data Set defines a section that would contain Dental information, but went no further. We do not have the expertise to*

 

*determine what should go in this section, and there is no IHE domain to defer to. We therefore did not include such information in the public comment text.*

8. *Should this profile have actors and transactions? This started as a content profile, but as we look it over before publication for comment, we realize that we want to enforce some behaviors on the different actors. One proposal is to have a PHR and EHR Actor, with different behaviors on import and export of PHR information.*
9. *How would an XDS Registry actor fit into the actors and transactions that would be defined by this profile if it does indeed define actors and transactions.*

# 2 Changes to Sections

## 2.4 History of Annual Changes

***Add the following bullet to the end of the bullet list in section 2.4***

Added the **Exchange of Personal Health Record Content (XPHR)** which 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 systems.

## 2.5 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 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 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.

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

Figure 2.5-1 shows the relations between the Content Integration Profiles of the Patient Care Coordination Domain.

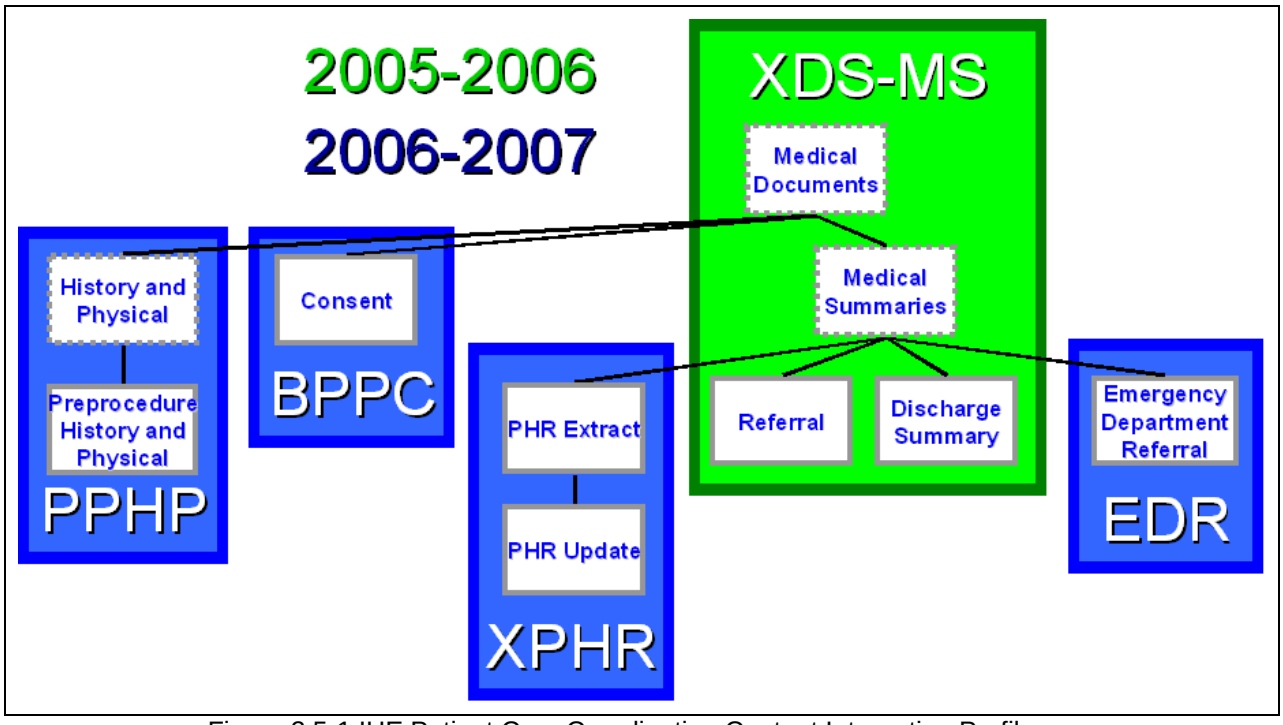


Figure 2.5-1 IHE Patient Care Coordination Content Integration Profiles

## 2.6 Integration Profile Dependencies

***Add the following section to Table 2.6-1 Integration Profiles Dependencies in section 2.6***

| Integration Profile | Depends on | Dependency Type | Purpose |
|---|---|---|---|
| Exchange of Personal Health Record Content (XPHR) | *Document Digital Signatures (DSG)* | XPHR Actors should digitally sign the content, and verify the digital signature of the content before importing it. | Ensures that content is not maliciously or even accidentally altered when tranmitted between PHR and EHR systems. |

# 4 XPHR Integration Profile

The **Exchange of Personal Health Record Content (XPHR)** integration profile describes the content and format of summary information extracted from a PHR system used by a patient for import into healthcare provider information systems, and visa versa. The purpose of this profile is to support interoperability between PHR systems used by patients and the information systems used by healthcare providers.

This profile does not address all the data exchange requirements of PHR systems. A PHR system may leverage other IHE Integration and Content Profiles for interoperability in addition to the XPHR Content Profile. For example, a PHR Systems may implement XDS-MS to import medical summaries produced by EHR systems, XDS-I to import imaging information, XDS-Lab to import laboratory reports, et cetera.

## 4.1 Exchange of Personal Health Record Content (XPHR)

Upon seeing a healthcare provider for the first time, patients are requested to provide a great deal of information, including, their address, telephone numbers, birth date, sex, marital status, emergency contacts, insurance information, a medical and family history, and current medications and allergies. This information is also reviewed and updated on subsequent visits. This information is usually obtained by having the patient fill out one or more forms, whose contents are then manually transferred in to the information systems used by the healthcare provider.

Automating this process will reduce transcription errors during the transfer of information, speed up the registration and check-in processes for patients, and also makes it possible for patients to have more participation in the management of their health information.

Providers also need to participate in helping patients to manage their healthcare information, however, providers should not be solely responsible for updating the patient's health record, since they often are only participating in a portion of the patient's overall health activities.

While PHR systems will allow patients to manage their healthcare information, and EHR and other information systems allow healthcare providers to manage the electronic records they maintain for their patients, but these two systems, operating separately, are not sufficient to allow patients and providers to collaborate in the care of the patient. What is needed is a way to integrate the activities of patients using a PHR system and healthcare providers using an EHR or other information system to provide for collaborative care between the patient and their provider.

The XPHR profile is intended to provide a mechanism for patients to supply the information most often requested by their healthcare providers, and to allow those same providers to assist patients in keeping their personal healthcare information up to date. It achieves this by allowing patients to provide a summary of their PHR information to providers, and gives providers a mechanism to suggest updates to the patient's PHR upon completion of a healthcare encounter.

## 4.2 Actors/ Transactions

There are two actors in this profile, the PHR Manager and the PHR Reviewer. PHR extracts are created by a PHR Manager and are to be consumed by the PHR Reviewer. Potential updates to the PHR are created by the PHR Reviewer, and consumed by the PHR Manager. The PHR Manager may obtain its initial data from a PHR Reviewer.

The sharing or transmission of PHR Content or updates from one actor to the other is addressed by the use of appropriate IHE profiles described by the section 4.3 below.

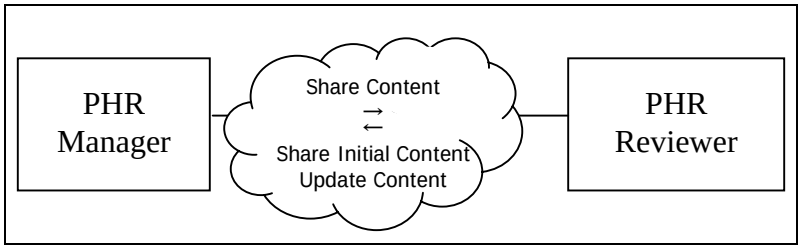


**Figure 4.2-1 XPHR Actors**

## 4.3 XD* Binding

It is expected that exchanges of PHR content 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, found here: http://www.ihe.net/Technical_Framework/.

Thus, implementors of the PHR Reviewer and PHR Manager Actors must also implement either the ITI XDS, XDM or XDR Profiles to exchange content, using the bindings listed below.

| Content | Binding | Actor | Optionality |
|---|---|---|---|
| PHR Extract Module *PCC TF-2: 5.4.1.5* | Medical Document Binding to XD* *PCC TF-2: 4.1* | PHR Manager | R |
| | | PHR Reviewer | R |
| PHR Update Module *PCC TF-2: 5.4.1.6* | Medical Document Binding to XD* *PCC TF-2: 4.1* | PHR Manager | R |
| | | PHR Reviewer | O |

**Table 4.3-1 Transactions and Content**

## 4.4 XPHR Content Modules

### 4.4.1 PHR Extract Module

The content exchanged shall be structured and coded as required by the PHR Extract Module Content specified in PCC TF-2: 5.4.1.5. The PHR Manager Actor creates a PHR Extract and shares it with the PHR Reviewer. The PHR Reviewer Actor can optionally create an PHR Extract and share it with a PHR Manager if both actors implement the Initialize PHR Option.

### 4.4.2 PHR Update Module

The content exchanged shall be structured and coded as required by the PHR Update Module Content specified in PCC TF-2: 5.4.1.6. The PHR Reviewer Actor creates a PHR Update document as an addendum to a previously exchanged PHR Extract document. This Update is an addendum to the prior document, and reflects changes to that document that are suggested by the PHR Reviewer Actor. The PHR Manager actor shall support viewing of an Update document, and may support import of the Update (see section 4.5.1 PHR Manager Options below) to reflect those changes to the PHR.

The purpose of this content module is to provide a mechanism whereby healthcare providers, using applications that implement the PHR Reviewer Actor, can suggest updates to a PHR for a patient.

## 4.5 XPHR Integration Profile Options

Table 4.5-1 summarizes the options that actors may take for this Integration Profile.
Dependencies between options when applicable are specified in notes.

| Actor | Options | Vol & Section |
|---|---|---|
| PHR Manager | *Document Import Update Option* | 4.5.1.1 |
| | *Section Import Update Option* | 4.5.1.2 |
| | *Discrete Data Import Update Option* | 4.5.1.3 |
| | *Initialize PHR Option* | 4.5.3 |
| PHR Reviewer | *View Extract Option (1)* | 4.5.2.1 |
| | *Extract Document Import Option (1)* | 4.5.2.2 |
| | *Extract Section Import Option (1)* | 4.5.2.3 |
| | *Extract Discrete Data Import Option (1)* | 4.5.2.4 |
| | *Create Update Option* | 4.5.2.5 |
| | *Initialize PHR Option* | 4.5.3 |

**Table 4.5-1 Actors and Options**

Note 1: At least one of these options must be implemented.

### 4.5.1 PHR Manager Options

#### 4.5.1.1 Document Import Update Option

This option defines the processing requirements placed on PHR Managers for providing access, and importing the entire PHR Extract document and managing it as part of the patient record. This option has identical requirements as the XDS-MS Document Import Option. See PCC TF-2: 3.1.2 for more details on this option.

#### 4.5.1.2 Section Import Update Option

This option defines the processing requirements placed on PHR Managers for providing access to, and importing the selected sections of the PHR Extract document and managing them as part of the patient record. This option has identical requirements as the XDS-MS Section Import Option. See PCC TF-2: 3.1.3 for more details on this option.

#### 4.5.1.3 Discrete Data Import Update Option

This option defines the processing requirements placed on PHR Managers for providing access, and importing discrete data from selected sections of the PHR Extract document and managing them as part of the patient record. This option has identical requirements as the XDS-MS Discrete Data Import Option. See PCC TF-2: 3.1.4 for more details on this option.

### 4.5.2 PHR Reviewer Options

#### 4.5.2.1 View Extract Option

This option defines the processing requirements placed on PHR Reviewer actors for providing access and rendering of the PHR Extract. This option has identical requirements as the XDS-MS View Document Option. See PCC TF-2:3.1.1 for more details on this option.

#### 4.5.2.1.1 Display Transform

A PHR Manager Actor may provide access to a style sheet that ensures consistent rendering of the PHR Extract content as was displayed by the PHR Manager Actor (See PCC TF-2: 5.4.1.1.2.1).

The PHR Reviewer Actor must be able to present a view of the document using this style sheet if present.

### 4.5.2.2 Extract Document Import Option

This option defines the processing requirements placed on PHR Reviewers for providing access, and importing the entire PHR Extract document and managing it as part of the patient record. This option has identical requirements as the XDS-MS Document Import Option. See PCC TF-2: 3.1.2 for more details on this option.

### 4.5.2.3 Extract Section Import Option

This option defines the processing requirements placed on PHR Reviewers for providing access to, and importing selected sections of the PHR Extract document and managing them as part of the patient record. This option has identical requirements as the XDS-MS Section Import Option. See PCC TF-2: 3.1.3 for more details on this option.

### 4.5.2.4 Extract Discrete Data Import Option

This option defines the processing requirements placed on PHR Reviewers for providing access, and importing discrete data from selected sections of the Medical Summary document and managing them as part of the patient record. This option has identical requirements as the XDS-MS Discrete Data Import Option. See PCC TF-2: 3.1.4 for more details on this option.

### 4.5.3 Initilize PHR Option

A PHR Manager supporting the Initialize PHR Option shall be able to consume PHR Extracts created by a PHR Reviewer. A PHR Reviewer supporting the Initialize PHR Option shall be able to create a PHR Extract to support initialization of data used by a PHR Manager.

## 4.6 XPHR Integration Profile Process Flow

One key use scenarios has been identified as an example. This use case originated in the Cross-Enterprise Document point-to-point Interchange (XDP) profile, and is reproduced here.

### 4.6.1 Personal Health Record (PHR) to ED/Primary Care EHR

**Precondition:** A patient is using a Personal Health Record application system at home for the record keeping of patient-originated medical information (e.g. social history, family history), snapshots of clinical information that may have been provided from previous care encounters (e.g. medication list, immunization records, etc), and current observations from home care medical devices (e.g. blood pressure, blood sugar level, etc).

**Events:** The patient requests their provider give them initial information to initialize their new PHR system. Later the patient does an extract of his PHR onto a portable media (USB key, CD)

 

to bring to the care facility as a current set of medical data for the clinician. The patient experiences a medical condition requiring that he needs to present at the ED or his PCP for care. The ED physician or primary care physician receives the portable media from the patient and loads it an office PC to display and/or import, as desired, the information provided on the portable media. Following the encounter, the provider does an extract of appropriate data elements from the office EMR to yield a snapshot of the patient's medical record. This snapshot is then transferred to an interchange media for the patient to bring home and update his private PHR. The PHR Manager imports this document and uses the information in it to update the content of the PHR: e.g., by applying the changes recorded in the PHR Update appropriately[1].

**Postcondition:** The patient's PHR is up to date.

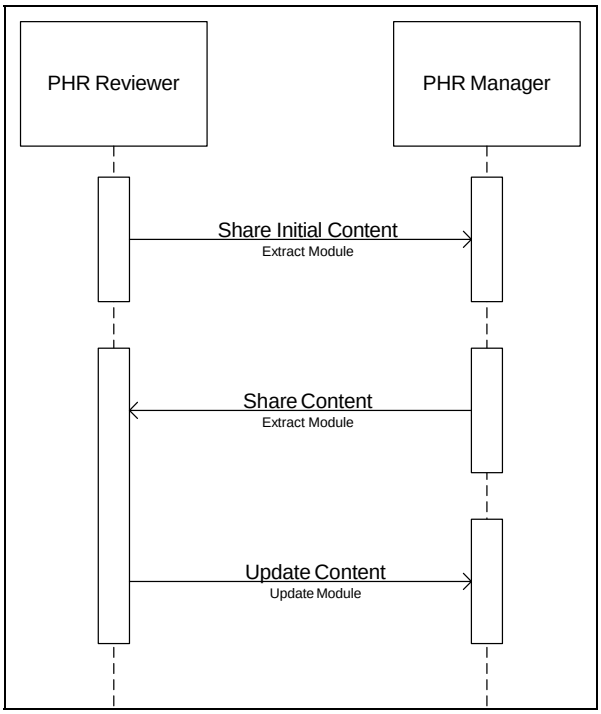


**Figure 4.6-1 Basic Process Flow in XPHR Profile**

[1] E.g., verifying the change with the patient, and ensuring that conflicting updates have not already occurred.

## 4.7 Grouping with Other Actors

### 4.7.1 Cross Enterprise Document Sharing, Media Interchange and Reliable Messaging

The PHR Manager and PHR Reviewer Actors shall be grouped with appropriate actors from the XDS, XDM or XDR integration profiles to support sharing of PHR Content and PHR Updates.

### 4.7.2 Document Digital Signature (DSG)

Creators of the XPHR Integration Profile content should digitally sign all documents using the Digital Signature (DSG) Content Profile.

Consumers of XPHR Integration Profile content should verify the Digital Signature of the submission set before use of the information it contains.

# Appendix A Actor Descriptions

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

**PHR Manager** The PHR Manager creates extracts of information from the PHR system to exchange with a PHR Reviewer, and optionally consumes updates or initial content that has been created by a PHR Reviewer.

**PHR Reviewer** The PHR Reviewer consumes extracts created by a PHR Manager, and optionally creates updates or initial content that can be consumed by a PHR Manager.

# GLOSSARY

**PHR**: Personal Health Record

# Volume 2 - Transactions

## 5 Content Profile

## 5.1 Namespaces and Vocabularies

### 5.1.1 Namespaces for Vocabularies used in this Document

*Add the following row to the list of Namespaces*

| codeSystem | codeSystemName | Description |
|---|---|---|
| 1.3.6.1.4.1.19376.1.5.3.3 | IHE PCC RoleCode | Vocabulary used to describe the role of participants. |
| 1.3.6.1.4.1.19376.1.5.3.4 | | Namespace OID used for IHE Extensions to CDA Release 2.0 |
| See PCC TF-3 | IHEPregancyObservations | This is a vocabulary domain that supports coded pregnancy observations. This vocabulary domain is expected to be specified for each realm using the National Extensions found in PCC TF-3. |
| See PCC TF-3 | IHEMeasurements | This is a vocabulary domain that supports measurements of vital signs. This vocabulary domain is expected to be specified for each realm using the National Extensions found in PCC TF-3. |
| See PCC TF-3 | IHEBloodType | This is a vocabulary domain that supports measurements of blood type. This vocabulary domain is expected to be specified for each realm using the National Extensions found in PCC TF-3. |

#### 5.1.1.1 IHE PCC Template Identifiers

*Add the following row to the list of IHE PCC Template Identifiers*

| root | Description | |
|---|---|---|

| | | |
|---|---|---|
| 1.3.6.1.4.1.19376.1.5.3.1.1.5 | The template identifier used to indicate that a CDA document conforms to the PHR Extract Module Specification. | 5.4.1.5 |
| 1.3.6.1.4.1.19376.1.5.3.1.1.6 | The template identifier used to indicate that a CDA document conforms to the PHR Update Module Specification. | 5.4.1.6 |
| 1.3.6.1.4.1.19376.1.5.3.1.2.1 | Language Communication | 5.4.2.2 |
| 1.3.6.1.4.1.19376.1.5.3.1.2.2 | Employer, School or other affiliated organization contact | 5.4.2.3 |
| 1.3.6.1.4.1.19376.1.5.3.1.2.3 | Pharmacy Contact | 5.4.2.6 |
| 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.1 | History of Occupational Exposure | 5.4.3.2.1 |
| 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2 | Vital Signs (Coded) | 5.4.3.4.1 |
| 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3 | History of Encounters | 5.4.3.2.3 |
| 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4 | History of Pregnancies | 5.4.3.2.2 |
| 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.5 | Medical Devices | 5.4.3.2.4 |
| 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.6 | History of Foreign Travel | 5.4.3.2.5 |
| 1.3.6.1.4.1.19376.1.5.3.1.4.12 | Immunization | 5.4.4.8 |
| 1.3.6.1.4.1.19376.1.5.3.1.4.13 | Simple Observation | 5.4.4.9 |
| 1.3.6.1.4.1.19376.1.5.3.1.4.14 | Encounter | 5.4.4.10 |
| 1.3.6.1.4.1.19376.1.5.3.1.4.15 | Family History Observation | 5.4.4.11 |

*Add the following section to the IHE Content Profiles Section of Volume II of the Patient Care Coordination Technical Framework.*

### 5.1.1.2 IHERoleCode Vocabulary

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

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

**Table 5.1-1 IHERoleCode Vocabulary**

## 5.4 CDA Release 2.0 Content Modules

*Add the following section to PCC TF-2: 5.4 the CDA Release 2.0 Content Modules Section of Volume II of the Patient Care Coordination Technical Framework.*

### 5.4.1.5 PHR Extract Module 1.3.6.1.4.1.19376.1.5.3.1.1.5

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

#### 5.4.1.5.1 Standards

| | |
|---|---|
| AHIMA-PHR | AHIMA PHR Common Data Elements |
| CCD | HL7 Continuity of Care Document (Draft) |
| CCR | ASTM E-2369 Continuity of Care Record |
| CRS | HL7 Care Record Summary |
| HL7-PHR | HL7 PHR Functional Model (Draft) |
| LOINC | Logical Observation Identifier Names and Codes |

#### 5.4.1.5.2 Conformance

An PHR Extract Module is a type of medical summary, and incorporates the constraints defined for medical summaries found in PCC TF-2: 5.4.1.2 Medical Summaries. While mappings have been provided to various standards, the intention is for this content module to conform to the ASTM/HL7 Continuity of Care Document when it is published.

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 below in Figure 5.4-1.

```
<ClinicalDocument xmlns='urn:hl7-org:v3'>
    <typeId extension="POCD_HD000040" root="2.16.840.1.113883.1.3"/>
    <templateId root="1.3.6.1.4.1.19376.1.5.3.1.1.2"/>
    <templateId root="1.3.6.1.4.1.19376.1.5.3.1.1.5"/>
        :
```

**Figure 5.4-1 Declaring Conformance**

A CDA Document may conform to more than one template, and can therefore have more that one <templateId> element. The <templateId> elements shown in Figure 5.4-1 above must be present.

#### 5.4.1.5.3 Data Element Index

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

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

A further requirement of transfers of information between PHR and EHR systems is that authorship of the information stored within the PHR shall be tracable through the various import/export cycles. PHR Manager Actors must be secure nodes, which requires logging of any updates to or accesses of PHR information.

The DSG profile should be used to ensure that information coming into, or exiting these systems is verifiably authored.

| AHIMA Common Data Elements | ASTM Continuity of Care Record | HL7 Clincial Document Architecture, Care Record Summary or Continuity of Care Document | HL7 PHR Conformance Criteria |
|---|---|---|---|
| Personal Information | Patient | patient | Demographic Information |
| Name | Patient | patient/name | Demographic Information |
| Address | Patient | patient/addr | Contact Information |
| Contact Information | Patient | patient/telecom | Contact Information |
| Personal Identification Information | Patient | patient/id | Demographic Information |
| Gender | Patient | patient/genderCode | Demographic Information |
| Date of Birth | Patient | patient/dateOfBirth | Demographic Information |
| Marital Status | Patient | patient/martitalStatusCode | |
| Race | Patient | patient/raceCode | |
| Ethnicity | Patient | patient/ethnicityCode | Demographic Information |
| *(Religious Affiliation[2])* | Patient | patient/religiousAffiliationCode | Spiritual Affiliation / Considerations |
| Languages Spoken | Patient | patient/languageCommunication | |
| Employer and School Contacts | Social History | participant[@roleCode='SCHOOL' \| @roleCode='EMPLOYER'] | |
| Hazardous Working Conditions | Social History | HISTORY OF OCCUPATIONAL EXPOSURE | |
| Emergency Contacts | Support | participant[@roleCode='ECON' or @roleCode='NOK' or @roleCode='PRS'] | |
| Healthcare Providers | Practitioners | performer | Healthcare Providers |
| Insurance Providers | Insurance | participant[@roleCode='HLD'] | Health Insurance Pharmacy Insurance |
| Pharamacy | | performer[@roleCode='PHARMACY'] | |
| Legal Documents and Medical Directives | Advance Directives | ADVANCE DIRECTIVES | Advance Directive |

[2] Religious Affiliation is not included in the AHIMA PHR Data Set

| AHIMA Common Data Elements | ASTM Continuity of Care Record | HL7 Clincial Document Architecture, Care Record Summary or Continuity of Care Document | HL7 PHR Conformance Criteria |
|---|---|---|---|
| General Medical Information | | | |
| Height, Weight | Vital Signs | VITAL SIGNS | |
| Blood Type | Results | RELEVANT DIAGNOSTIC TESTS AND/OR LABORATORY DATA | |
| Last Physical or Checkup | Encounters | HISTORY OF OUTPATIENT VISITS | Clinical Encounters and Procedures List |
| Allergies and Drug Sensitivies | Alerts | HISTORY OF ALLERGIES | Allergy and Reaction List |
| Conditions | Problems | HISTORY OF PAST ILLNESS<br>- or -<br>PROBLEM LIST | Problem List |
| Surgeries | Procedures | HISTORY OF SURGICAL PROCEDURES | Clinical Encounters and Procedures List |
| Medications – Prescription and Non-Prescription | Medications | HISTORY OF MEDICATION USE | Medication List |
| Immunizations | Immunizations | HISTORY OF IMMUNIZATIONS | Immunizations List |
| Doctor Visits | Encounters | HISTORY OF OUTPATIENT VISITS | Clinical Encounters and Procedures List |
| Hospitalizations | Encounters | HISTORY OF HOSPITALIZATIONS | Clinical Encounters and Procedures List |
| Other Healthcare Visits | Encounters | HISTORY OF OUTPATIENT VISITS | Clinical Encounters and Procedures List |
| Clinical Tests | Results | RELEVANT DIAGNOSTIC TESTS AND/OR LABORATORY DATA | Laboratory and Test Results |
| Pregnancies | | HISTORY OF PREGNANCIES | |
| Medical Devices | Medical Devices | HISTORY OF MEDICAL DEVICE USE | |
| Family Member History | Family History | HISTORY OF FAMILY MEMBER DISEASES | Family History |
| Foreign Travel | | HISTORY OF TRAVEL | |
| Therapy | Plan of Care | TREATMENT PLAN | Care Plans, Goals and Disease Management |
| Vital Signs | Vital signs | VITAL SIGNS | |
| Vision | | | |
| Dental | | | |

**Figure 5.4-2 PHR Extract Data Elements**

### 5.4.1.5.4 Requirements

A PHR Extract is a type of medical summary, and incorporates the constraints for Medical Summaries found in PCC TF-2: 5.4.1.2. This section defines additional constraints for Medical Summary Content used in a PHR Extract.

| AHIMA Common Data Elements | Opt | Content Module[3] | templateId |
|---|---|---|---|
| Personal Information | R | 5.4.2.1 | |
| Name | R | | |
| Address | R2 | | |
| Contact Information | R2 | | |
| Personal Identification Information | R2 | | |
| Gender | R | | |
| Date of Birth | R2 | | |
| Marital Status | R2 | | |
| Race | O | | |
| Ethnicity | O | | |
| *(Religious Affiliation[4])* | O | | |
| Languages Spoken | R2 | 5.4.2.2 | 1.3.6.1.4.1.19376.1.5.3.1.2.1 |
| Employer and School Contacts | O | 5.4.2.3 | 1.3.6.1.4.1.19376.1.5.3.1.2.2 |
| Hazardous Working Conditions | O | 5.4.3.2.1 | 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.1 |
| Emergency Contacts | R2 | 5.4.2.7 | 1.3.6.1.4.1.19376.1.5.3.1.2.3 |
| Healthcare Providers | R | 5.4.2.4 | |
| Insurance Providers | R2 | 5.4.2.5 | |
| Pharamacy | R2 | 5.4.2.6 | 1.3.6.1.4.1.19376.1.5.3.1.2.3 |
| Legal Documents and Medical Directives | R2 | PCC TF-2: 5.4.3.6 | 1.3.6.1.4.1.19376.1.5.3.1.3.34 |
| General Medical Information | R2 | 5.4.3.4.1 | 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2 |
| Allergies and Drug Sensitivies | R | PCC TF-2: 5.4.3.2.9 | 1.3.6.1.4.1.19376.1.5.3.1.3.13 |
| Conditions | R | PCC TF-2: 5.4.3.2.5<br>PCC TF-2: 5.4.3.2.3 | 1.3.6.1.4.1.19376.1.5.3.1.3.8<br>1.3.6.1.4.1.19376.1.5.3.1.3.6 |
| Surgeries | R2 | PCC TF-2: 5.4.3.2.8 | 1.3.6.1.4.1.19376.1.5.3.1.3.12 |
| Medications – Prescription and Non-Prescription | R | PCC TF-2: 5.4.3.3.1 | 1.3.6.1.4.1.19376.1.5.3.1.3.19 |
| Immunizations | R2 | PCC TF-2: 5.4.3.3.5 | 1.3.6.1.4.1.19376.1.5.3.1.3.23 |
| Doctor Visits | O | 5.4.3.2.3 | 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3 |
| Hospitalizations | O | 5.4.3.2.3 | 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3 |
| Other Healthcare Visits | O | 5.4.3.2.3 | 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3 |
| Clinical Tests | O | PCC TF-2: 5.4.3.5 | 1.3.6.1.4.1.19376.1.5.3.1.3.28 |
| Pregnancies | O | 5.4.3.2.2 | 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.4 |
| Medical Devices | R2 | 5.4.3.2.4 | 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.5 |
| Family Member History | O | PCC TF-2: 5.4.3.2 | 1.3.6.1.4.1.19376.1.5.3.1.3.15 |
| Foreign Travel | O | 5.4.3.2.5 | 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.6 |
| Therapy | O | PCC TF-2: 5.4.3.6 | 1.3.6.1.4.1.19376.1.5.3.1.3.31 |
| Vital Signs | R | 5.4.3.4.1 | 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2 |
| Vision | *See Open Issues Log* | | |
| Dental | | | |

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[3] See the PCC Technical Framework for references that begin with PCC TF-2, and this document for all others.

[4] Religious Affiliation is not included in the AHIMA PHR Data Set

#### 5.4.1.5.5 Constraints

The LOINC Document type code for this document is 34133-9 SUMMARY OF EPISODE NOTE.

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

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

### 5.4.1.6 PHR Update Content Module 1.3.6.1.4.1.19376.1.5.3.1.1.6

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

#### 5.4.1.6.1 Requirements

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

##### 5.4.1.6.1.1 Adding a New Section or Appending to an Existing Section

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

##### 5.4.1.6.1.2 Replacing a Section

A PHR Reviewer Actor may suggest a revision to a section in the PHR Extract by replacing that section. To replace a section, the PHR Reviewer Actor creates a section in the PHR Update document that is of the same type as the section to be replaced in the PHR Extract document, and adds a <ppc:replacementOf> element to that section to indicate the section that it replaces.

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

##### 5.4.1.6.1.3 Adding an Entry

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

##### 5.4.1.6.1.4 Replacing or Removing an Entry

The PHR Review Actor can replace an existing entry by adding an entry of the same type with new or modified information, and including in that entry a <reference> element that has an

<externalAct> element. The <id> element of the <externalAct> shall be that of the act that is being replaced

#### 5.4.1.6.1.5 Removing an Entry

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

### 5.4.1.6.2 Constraints

The LOINC document type code is the same as for the PHR Extract content module.

The PHR Update Content module must record the PHR Extract which it is updating as described in PCC TF-2: 5.4.2.8 below.

## 5.4.2 Header Modules

### 5.4.2.1 Personal Information

Name, address, contact information, personal identification information; religious, ethnic and racial affiliation, and marital status shall all be recorded in the appropriate fields of the recordTarget/patientRole, according to the guidelines provided in CCD and CRS.

The location for confering information regarding eye and hair color and birthmarks or scars is not defined by this content module.

### 5.4.2.2 Language Communication 1.3.6.1.4.1.19376.1.5.3.1.2.1

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

```
<languageCommunication>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.1'/>
    <languageCode code='en-US'/>
    <modeCode code='' codeSystem='2.16.840.1.113883.5.60' codeSystemName='LanguageAbilityMode'/>
    <proficiencyLevelCode code='E|G|F|P' codeSystem='2.16.840.1.113883.5.61'
        codeSystemName='LanguageProficiencyCode' />
    <preferenceInd value='true|false'/>
</languageCommunciation>
```

#### 5.4.2.2.1.1 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.1'/>

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

#### 5.4.2.2.1.2 <languageCode code=''/>

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

#### 5.4.2.2.1.3<modeCode code='' codeSystem='2.16.840.1.113883.5.60' codeSystemName='LanguageAbilityMode'/>

This element describes the mode of use, and is only necessary when there are differences between expressive and receptive abilities. This element is optional. When not present, the assumption is that any further detail provided within the languageCommunication element refers to all common modes of communication. The coding system used shall be the HL7 LanguageAbilityMode vocabulary when this element is communicated.

#### 5.4.2.2.1.4<proficiencyLevelCode code='' codeSystem='2.16.840.1.113883.5.61' codeSystemName='LanguageProficiencyCode' />

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

#### 5.4.2.2.1.5<preferenceInd value=''/>

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

### 5.4.2.3 Employer and School Contacts 1.3.6.1.4.1.19376.1.5.3.1.2.2

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

Figure 5.4-4 below shows how the information for this element is coded, and further constraints are provided in the following sections.

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

**Figure 5.4-4 Employer or School Contact**

#### 5.4.2.3.1.1<participant typeCode='PART'>

The typeCode of the participant shall be PART.

#### 5.4.2.3.1.2<templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.2'/>

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

#### 5.4.2.3.1.3<time><low value=''/><high value=''/></time>

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

#### 5.4.2.3.1.4<associatedEntity>

The <associatedEntity> element provides the contact information for the school, employer or affiliated organization.

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

The code value shall indicate whether the participant is the employer, school or other affiliated (e.g., volunteer) organization.

#### 5.4.2.3.1.6<associatedPerson><name>…</name></associatedPerson>

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

#### 5.4.2.3.1.7 <scopingOrganization>

```
<name>…</name>
<telecom value='' use=''/>
<addr>…</addr>
</scopingOrganization>
```

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

### 5.4.2.4 Healthcare Providers

Healthcare providers shall be recorded as described in CCD.

The identifier that the patient is known by to these providers may be included using the Patient Identifier extension described in section A.2 below in Appendix A Extensions to CDA Release 2.0. See the example shown in Figure 5.4-5 for use of this extension element.

#### 5.4.2.5 Insurance Providers

Insurance providers shall be recorded as described in CCD.

When recording policy holders, the <id> element of the <participant> shall be the subscriber identifier of the policy holder, or the member identifier is the subscriber is also the patient. To record the member identifier of the patient, an actor may include a <pcc:patient> element, with a <pcc:id> element that contains the member identifier. To record the group identifier for the sponsor, an actor may include a <pcc:sponsor> element, with a <pcc:id> element that contains the group identifier.

The Group and Subscriber extension is described in section A.2 below in Appendix A Extensions to CDA Release 2.0. See the example in that section for more details.

#### 5.4.2.6 Pharmacy 1.3.6.1.4.1.19376.1.5.3.1.2.3

Contact information for the patient's pharmacy shall be recorded as a performer in the CDA Header. These contacts shall conform to the constraints found in CCD.

Figure 5.4-5 below shows how the information for this element is coded, and further constraints are provided in the following sections.

```
<documentationOf>
    <serviceEvent classCode='PCPR'>
        <performer>
            <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.3'/>
            <time>
                <low value=''/>
                <high value=''/>
            </time>
            <assignedEntity classCode='CON'>
                <id root='' extension=''/>
                <code code='PHARMACY'
                    codeSystem='1.3.5.1.4.1.19376.1.5.3.3' codeSystemName='IHERoleCode'/>
                <associatedPerson>
                    <name>…</name>
                </associatedPerson>
                <scopingOrganization>
                    <name>…</name>
                    <telecom value='' use=''/>
                    <addr>…</addr>
                </scopingOrganization>
            </assignedEntity>
            <pcc:patient xmlns:pcc='urn:oid:1.3.6.1.4.1.19376.1.5.3.4' >
                <pcc:id root='' extension=''/>
            </pcc:patient>
        </performer>
    </serviceEvent>
</documentationOf>
```

**Figure 5.4-5 Pharmacy Contacts**

#### 5.4.2.6.1.1<performer>

The <performer> element identifies this person or organization as a performer of healthcare services.

#### 5.4.2.6.1.2 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.2.3'/>

The <templateId> element identifies this <performer> as a pharmacy contact for validation of the content. The templateId must have root='1.3.6.1.4.1.19376.1.5.3.1.2.3'.

#### 5.4.2.6.1.3<code code='PHARMACY' codeSystem='1.3.5.1.4.1.19376.1.5.3.3' codeSystemName='IHERoleCode'/>

The code value shall be PHARMACY to indicate to indicate that this participant is the patient's pharmacy.

#### 5.4.2.6.1.4<associatedPerson>

The <associatedPerson> element provides the name of the pharmacy contact, and relates the

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

#### 5.4.2.6.1.4.1 <name>…</name>

#### 5.4.2.6.1.5 <scopingOrganization>
```
<name>…</name>
<telecom value='' use=''/>
<addr>…</addr>
</scopingOrganization>
```

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

#### 5.4.2.6.1.6 <pcc:patient xmlns:pcc='urn:oid:1.3.6.1.4.1.19376.1.5.3.4' >
```
<pcc:id root='' extension=''/>
</pcc:patient>
```

This element may be present and if present shall provide the identifier by which the pharmacy knows the patient. This element uses the Patient Identifier extension described in section A.2 below in Appendix A Extensions to CDA Release 2.0.

### 5.4.2.7 Emergency Contacts

Emergency contacts are recorded as described in CCD.

#### 5.4.2.8 relatedDocument 1.3.6.1.4.1.19376.1.5.3.1.2.4

The relatedDocument element using this templateId shall refer to a document conforming to the PHR Extract Content module. All XML content with the exception of the <id> element must appear exactly as shown below.

```
<relatedDocument typeCode='APND'>
    <parentDocument classCode='DOCCLIN' moodCode='EVN'>
        <id root='' extension=''/>
    </parentDocument>
</relatedDocument>
```

**Figure 5.4-6 relatedDocument for Updating PHR**

##### 5.4.2.8.1 <id root='' extension=''/>

The <id> element shall refer to the PHR Extract that is being updated by its identifier.

### 5.4.3 Section Modules

*Add the following section to the appropriate Sections under 5.4.3 of Volume II of the Patient Care Coordination Technical Framework.*

#### 5.4.3.1 Reasons for Care

*See Section 5.4.3.1 Reasons for Care in Volume II of the Patient Care Coordination Technical Framework.*

#### 5.4.3.2 Other Condition Histories

*Add the following templates to section 5.4.3.2 of Volume II of the Patient Care Coordination Technical Framework.*

##### 5.4.3.2.1 Hazardous Working Conditions

| TemplateID | 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.1 |
|---|---|
| General Description | Hazardous working conditions only a narrative description of the patient's hazardous risks. |
| **Valid LOINC CODES** | **Description** |
| 10161-8 | HISTORY OF OCCUPATIONAL EXPOSURE |
| **Valid Entries** | **Description** |
| None | |

### 5.4.3.2.2 Pregnancy History

| TemplateID | 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. |
| **Valid LOINC CODES** | **Description** |
| 10162-6 | HISTORY OF PREGNANCIES |
| **Valid Entries** | **Description** |
| Measurement | This section shall contain one or more observation entries using codes from the IHEPregancyObservations vocabulary domain. See IHE PCC TF-4 for the realm specific vocabularies. |

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| LOINC CODE | Description | Type | Units or Vocabulary[5] |
|---|---|---|---|
| 11449-6 | PREGNANCY STATUS | CE | SNOMED CT, ICD-9-CM (V22) |
| 8678-5 | MENSTRUAL STATUS | CE | SNOMED CT |
| 8665-2 | DATE LAST MENSTRUAL PERIOD | TS | N/A |
| 11636-8 | BIRTHS LIVE (REPORTED) | QTY | N/A |
| 11637-6 | BIRTHS PRETERM (REPORTED) | QTY | N/A |
| 11638-4 | BIRTHS STILL LIVING (REPORTED) | QTY | N/A |
| 11639-2 | BIRTHS TERM (REPORTED) | QTY | N/A |
| 11640-0 | BIRTHS TOTAL (REPORTED) | QTY | N/A |
| 11778-8 | DELIVERY DATE (CLINICAL ESTIMATE) | TS | N/A |
| 11779-6 | DELIVERY DATE (ESTIMATED FROM LAST MENSTRUAL PERIOD) | TS | N/A |
| 11780-4 | DELIVERY DATE (ESTIMATED FROM OVULATION DATE) | TS | N/A |
| 11884-4 | FETUS, GESTATIONAL AGE (CLINICAL ESTIMATE) | PQ | d, wk or mo |
| 11885-1 | FETUS, GESTATIONAL AGE (ESTIMATED FROM LAST MENSTRUAL PERIOD) | PQ | d, wk or mo |
| 11886-9 | FETUS, GESTATIONAL AGE (ESTIMATED FROM OVULATION DATE) | PQ | d, wk or mo |
| 11887-7 | FETUS, GESTATIONAL AGE (ESTIMATED FROM SELECTED DELIVERY DATE) | PQ | d, wk or mo |
| 11955-2 | LAST MENSTRUAL PERIOD DATE AND TIME (REPORTED) | TS | N/A |

[5] CS, CV, CE and CD data types will need to specify the vocabulary, entries in this column provide examples, but not explicit requirements. Other data types (e.g., PQ, RTO) may need to specify the units, and should use the recommended values shown. In all cases this profile uses the HL7 UnitsOfMeasureCaseSensitive vocabulary for units.

#### 5.4.3.2.3 Encounter Histories

| TemplateID | 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.3 | |
|---|---|---|
| Section Title | Encounter Histories | |
| General Description | The encounter history section contains coded entries describing the patient history of encounters. | |
| **Valid LOINC CODES** | **Opt** | **Description** |
| 46240-8 | R | HISTORY OF HOSPITALIZATIONS+ HISTORY OF OUTPATIENT VISITS |
| **Valid Entries** | **Opt** | **Description** |
| Encounter | R | This section shall contain one or more encounter entries as described in 5.4.4.10. |

#### 5.4.3.2.4 Medical Devices

| TemplateID | 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.5 | |
|---|---|---|
| General Description | The medical devices section contains narrative text describing the patient history of medical device use. | |
| **Valid LOINC CODES** | **Opt** | **Description** |
| 46264-8 | R | HISTORY OF MEDICAL DEVICE USE |

#### 5.4.3.2.5 Foreign Travel

| TemplateID | 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.6 | |
|---|---|---|
| General Description | The foreign travel section contains only narrative text describing the patient's travel history. | |
| **Valid LOINC CODES** | **Opt** | **Description** |
| 10182-4 | | HISTORY OF TRAVEL |

### 5.4.3.3 Medications

250 *See Section 5.4.3.3 Medications in Volume II of the Patient Care Coordination Technical Framework.*

### 5.4.3.4 Physical Exam

*Add the following templates to section 5.4.3.4 of Volume II of the Patient Care Coordination Technical Framework.*

#### 5.4.3.4.1 Vital Signs

| TemplateID | 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2 | |
|---|---|---|
| General Description | The vital signs section contains coded measurement results of a patient's vital signs. | |
| **Valid LOINC CODES** | **Opt** | **Description** |
| 8716-3 | R | VITAL SIGNS |
| **Valid Entries** | **Opt** | **Description** |
| 1.3.6.1.4.1.19376.1.5.3.1.4.13 | R | 5.4.4.9 Simple Observations<br>This section shall contain one or more observation entries using codes from the IHEMeasurements vocabulary domain. See IHE PCC TF-3 for the realm specific vocabularies. |

*Move to Volume 3*

It may contain one or more observation entries with the following LOINC codes:

| LOINC CODE | Description | Type | Units or Vocabulary[6] |
|---|---|---|---|
| 20564-1 | OXYGEN SATURATION[7] | PQ | % |
| 18686-6 | RESPIRATION RATE | RTO | min[8] or s |
| 11328-2 | HEART BEAT | RTO | |
| 8480-6 | INTRAVASCULAR SYSTOLIC | PQ | mm[Hg] |
| 8462-4 | INTRAVASCULAR DIASTOLIC | PQ | |
| 11289-6 | BODY TEMPERATURE | PQ | Cel or [degF] |
| 3137-7 | BODY HEIGHT (MEASURED) | PQ | m, cm,[in_us] or [in_uk] |
| 3138-5 | BODY HEIGHT (STATED) | PQ | |
| 3141-9 | BODY WEIGHT (MEASURED) | PQ | kg, g, [lb_av] or [oz_av] |
| 3142-7 | BODY WEIGHT (STATED) | PQ | |
| 8287-5 | CIRCUMFRENCE.OCCIPITAL-FRONTAL[9] (TAPE MEASURE) | PQ | m, cm,[in_us] or [in_uk] |
| 8306-3 | BODY HEIGHT^LYING[10] | PQ | |

[6] CS, CV, CE and CD data types will need to specify the vocabulary, entries in this column provide examples, but not explicit requirements. Other data types may specify the units in this column; in all cases this profile uses the HL7 UnitsOfMeasureCaseSensitive vocabulary for units.

[7] Units should be in %.

[8] The numerator should be unit-less (representing a quantity of beats or breaths), the denominator should be in minutes or seconds.

[9] Head Circumference

### 5.4.3.5 Results

#### 5.4.3.5.1 Blood Type

| TemplateID | 1.3.6.1.4.1.19376.1.5.3.1.1.5.3.2 | |
|---|---|---|
| Parent Template | 1.3.6.1.4.1.19376.1.5.3.1.3.27 | |
| General Description | The results section shall contain an observation of the patients blood type. | |
| **Entries** | | **Description** |
| 1.3.6.1.4.1.19376.1.5.3.1.4.13 | R | 5.4.4.9 Simple Observations<br>This section shall contain one observation entry using a code from the IHEBloodType vocabulary domain. See IHE PCC TF-3 for the realm specific vocabularies. |

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| LOINC CODE | Description | Type | Units or Vocabulary[11] |
|---|---|---|---|
| 882-1 | ABO+RH GROUP[12] | CE | SNOMED CT, ISBT 129 |

[10] Body Length

[11] CS, CV, CE and CD data types will need to specify the vocabulary, entries in this column provide examples, but not explicit requirements. Other data types may specify the units in this column; in all cases this profile uses the HL7 UnitsOfMeasureCaseSensitive vocabulary for units.

[12] A number of different coding systems may be used to record this value, e.g., SNOMED CT, ISBT 128.

### 5.4.4 Entries

*Add the following section to the end of the PCC TF-2: 5.4.4*

#### 5.4.4.8 Immunizations 1.3.6.1.4.1.19376.1.5.3.1.4.12

HL7 Immunizations

```
<substanceAdministration typeCode='SBADM' moodCode='EVN' negationInd='true|false'>
    <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>
    <entryRelationship typeCode='FLFS'>
        <sequenceNumber value=''/>
        <substanceAdministration typeCode='SBADM' moodCode='INT'>
            <id root='' extension=''/>
        </substanceAdministration>
    </entryRelationship>
    <entryRelationship inversionInd='true' typeCode='CAUS'>
        <observation typeCode='OBS' moodCode='EVN'>
            <id root='' extension=''/>
        </observation>
    </entryRelationship>
    <!-- Optional <entryRelationship> element containing comments -->
</substanceAdministration>
```

##### 5.4.4.8.1.1<substanceAdministration typeCode='SBADM' moodCode='EVN' negationInd='true|false'>

An immunization is a substance administration event. An immunization entry may be a record of why a specific immunization was not performed. In this case, negationInd shall be set to "true", otherwise, it shall be false.

##### 5.4.4.8.1.2<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.12'/>

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

##### 5.4.4.8.1.3<id root='' extension=''/>

This shall be the identifier for the immunization event.

#### 5.4.4.8.1.4<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[13].

| 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.[14] |

**Table 5.4-1 Vaccination Codes**

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

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

#### 5.4.4.8.1.6<statusCode code='completed'/>

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

#### 5.4.4.8.1.7<effectiveTime value=''/>

The effectiveTime element shall be present and should contain a time value that indicates the date of the substance administration. If the date is unkown, this shall be recorded using the nullFlavor attribute, with the reason that the information is unknown being specified. Otherwise, the date shall be recorded, and should have precision of at least the day.

#### 5.4.4.8.1.8<routeCode code='' codeSystem='' codeSystemName='RouteOfAdministration'/>

See routeCode under Medications at PCC TF-2: 6.4.4.8.2.9.

#### 5.4.4.8.1.9<approachSiteCode code='' codeSystem='' codeSystemName='HumanSubstanceAdministrationSite'/>

See approachSiteCode under Medications at PCC TF-2: 6.4.4.8.2.10.

#### 5.4.4.8.1.10 <doseQuantity value='' units=''/>

See doseQuantity under Medications at PCC TF-2: 6.4.4.8.2.11.

---

[13] This requires a little bit of explanation. The CPT-4 vocabulary describes procedures where a specific vaccine type is used, however, the RxNORM vocabulary describes a medication (or vaccine). Use of the former is valid because it describes a vaccination procedure. The latter would be incorrect because it describes a substance, not an act.

[14] Only those codes used to record vaccination procedures should be used in this case.

#### 5.4.4.8.1.11 <consumable typeCode='CSM'>

See consumable under Medications at PCC TF-2: 6.4.4.8.2.14.

#### 5.4.4.8.1.12 <code code='' codeSystem='' codeSystemName=''>

See code under Medications at PCC TF-2: 6.4.4.8.2.15 for more requirements.

Note also that 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, or the HL7 VaccineType codes[15]. Code systems that describe vaccination procedure (such as CPT-4) shall not be used to describe the vaccine (see notes above under section 5.4.4.8.1.4).

| codeSystem | codeSystemName | Description |
|---|---|---|
| 2.16.840.1.113883.6.59 | CVX | CDC Vaccine Codes |
| 2.16.840.1.113883.5.145 | VaccineType | HL7 Vaccine Type Codes |
| 2.16.840.1.113883.6.88 | RxNorm | RxNorm |
| 2.16.840.1.113883.6.63 | FDDC | First DataBank Drug Codes |
| 2.16.840.1.113883.6.96 | SNOMED-CT | SNOMED Controlled Terminology |

Table 7.6-7 Example Vaccine Vocabularies

#### 5.4.4.8.1.13 <entryRelationship typeCode='FLFS'>

This optional entry relationship indicates that the parent immunization entry is in fullfillment of some plan or order. If present, it shall not be empty.

#### 5.4.4.8.1.14 <sequenceNumber value=''/>

The <sequenceNumber> element is optional. If present, it indicates the sequence of the parent immunization in a sequence of similar immunizations (e.g., to record that this was the second TB vaccination).

#### 5.4.4.8.1.15 <substanceAdministration typeCode='SBADM' moodCode='INT'>

This optional <substanceAdministration> element points to the immunization plan. The details of an immunization plan are part of the plan of care section, and so do not appear in detail within the immunization itself.

#### 5.4.4.8.1.16 <id root='' extension=''/>

This required element contains the identifier of the detailed immunization plan that may be found elsewhere.

#### 5.4.4.8.1.17 <entryRelationship inversionInd='true' typeCode='CAUS'>

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

[15] Note that the HL7 VaccineType codes are a snapshot of the CDC Maintained code set, and so preference should be given to the CDC maintained code set over the HL7 Code set where possible

 

#### 5.4.4.8.1.18 <observation typeCode='OBS' moodCode='EVN'>

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

#### 5.4.4.8.1.19 <id root='' extension=''/>

This element is required, and gives the identifier of the adverse reaction. The adverse reaction pointed to by this element shall be described in more detail using the Allergies entry, elsewhere in the document where this element was found.

#### 5.4.4.8.1.20 <!-- 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[16]. Other comments may also be present.

### 5.4.4.9 Simple Observations 1.3.6.1.4.1.19376.1.5.3.1.4.13

```
<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='' codeSystem='' codeSystemName='IHEMeasurements|IHEPregnancyObservations'/>
    <text><reference value='#xxx'/></text>
    <statusCode code='completed'/>
    <effectiveTime value=''/>
    <repeatNumber value=''/>
    <value xsi:type='' …/>
    <interpretationCode code='' codeSystem='' codeSystemName=''/>
    <methodCode code='' codeSystem='' codeSystemName=''/>
    <targetSiteCode code='' codeSystem='' codeSystemName=''/>
</observation>
```

#### 5.4.4.9.1.1<observation typeCode='OBS' moodCode='EVN'>

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

#### 5.4.4.9.1.2<templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13'/>

The <templateId> element identifies this <observation> as a simple observation, allowing for validation of the content. The templateId must have root='1.3.6.1.4.1.19376.1.5.3.1.4.13'.

#### 5.4.4.9.1.3<id root='' extension=''/>

Each observation shall have an identifier.

#### 5.4.4.9.1.4<code code='' codeSystem='' codeSystemName=''/>

Observations will 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

[16] The HL7 RIM supports a reasonCode attribute for just such an event, however, this was constrained (removed) from the CDA R-MIM, and so cannot be supported using that attribute.

a section. Content modules derived from the Simple Observation content module may restrict the code system and code values used for the observation.

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

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

#### 5.4.4.9.1.6<statusCode code='completed'/>

The status code of all observation measurements shall be completed.

#### 5.4.4.9.1.7<effectiveTime value=''/>

The <effectiveTime> element shall be present, and shall record the date and time when the measurement was taken. This element should be precise to the day. If the date and time is unknown, this element should record that using the nullFlavor attribute.

#### 5.4.4.9.1.8<value xsi:type=" …/>

The value of the observation shall be recording using a data type appropriate to the observation. Content modules derived from the Simple Observation content module may restrict the allowable data types used for the observation.

#### 5.4.4.9.1.9<interpretationCode code='' codeSystem='' codeSystemName=''/>

If there is an interpretation that can be performed using an observation result (e.g., high, borderline, normal, low), these may be recorded within the interpretationCode element.

#### 5.4.4.9.1.10 <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[17].

#### 5.4.4.9.1.11 <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.

[17] For example, LOINC often pre-coordinates the method of observation with the observation code, and so this code would not be present in many cases when LOINC is used.

#### 5.4.4.10 Encounters 1.3.6.1.4.1.19376.1.5.3.1.4.14

```
<encounter classCode='ENC' moodCode='APT|ARQ|EVN'>
    <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.14'/>
    <id root='' extension=''/>
    <code code='' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActEncounterCode' />
    <text><reference value='#xxx'/></text>
<!-- Not transmitted.
    <statusCode code='completed'/>
-->
    <effectiveTime>
        <low value=''/>
        <high value=''/>
    </effectiveTime>
    <priorityCode code=''/>
    <performer typeCode='PRF'>
        <time><low value=''/><high value=''/></time>
        <assignedEntity>…</assignedEntity>
    </performer>
    <author />
    <informant />
    <participant typeCode='LOC'>
        <participantRole classCode='SDLOC'>
            <id/>
            <code/>
            <addr>…</addr>
            <telecom value='' use=''/>
            <playingEntity classCode='PLC' determinerCode='INST'>
                <name></name>
            </playingEntity>
        </participantRole>
    </participant>
</encounter>
```

##### 5.4.4.10.1.1 <encounter classCode='ENC' moodCode='APT|ARQ|EVN'>

This element is an encounter. The classCode shall be 'ENC'. The moodCode may be APT to indicated a scheduled appointment, ARQ to describe a request for an appointment that has been made but not yet scheduled by a provider, or EVN, to describe an encounter that has already occurred.

##### 5.4.4.10.1.2 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.14'/>

The templateId indicates that this <encounter> entry conforms to the constraints of this content module.

##### 5.4.4.10.1.3 <id root='' extension=''/>

This required element shall contain an identifier for the encounter. More than one encounter identifier may be present.[18]

##### 5.4.4.10.1.4 <code code='' codeSystem='2.16.840.1.113883.5.4' codeSystemName='ActEncounterCode' />

This required element shall contain a code from the HL7 ActEncounterCode vocabulary describing the type of encounter (e.g., inpatient, ambulatory, emergency, et cetera). Developers

[18] e.g., as might be the case where a PHR and an EHR use two different namespaces to identify encounters.

should take care to check that rational combinations of encounter.code and encounter.moodCode are used[19], but this profile does not restrict any combination.

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

The <text> element shall contain a reference to the narrative text describing the encounter.

#### 5.4.4.10.1.6 <statusCode/>

StatusCode shall not be transmitted for the encounter element. This element is used to manage the state of the encounter act internally within the PHR or EHR. An incomplete encounter should not be transmitted between an EHR and PHR system in any of the moods specified above.

#### 5.4.4.10.1.7 <effectiveTime><low value=''/><high value=''/></effectiveTime>

This element records the time over which the encounter occurred (in EVN mood), or the desired time of the encounter in ARQ or APT mood. In EVN or APT mood, the effectiveTime element shall be present. In ARQ mood, the effectiveTime element should be present, and if not, the priorityCode shall be present to indicate that a callback is required to schedule the appointment.

#### 5.4.4.10.1.8 <priorityCode code='CS'/>

This element shall be present in ARQ mood when effectiveTime is not provided. It indicates that a callback is requested to schedule the appointment.

#### 5.4.4.10.1.9 <performer>

For encounters in EVN mood, at least one performer should be present that identifies the provider of the service given during the encounter. More than one performer may be present. The <time> element should be used to indicate the duration of the participation of the performer when it is substantially different from that of the effectiveTime of the encounter.

In ARQ mood, the performer may be present to indicate a preference for a specific provider.

In APT mood, the performer may be present to indicate which provider is scheduled to perform the service.

#### 5.4.4.10.1.10 <author>

The <author> element should be present on the Encounter entry to indicate the creator of that entry.

### 5.4.4.11 Family History 1.3.6.1.4.1.19376.1.5.3.1.4.15

See CCD.

[19] It does not make a great deal of sense to have an appointment for an emergency encounter, for example.

#### 5.4.4.12 Update 1.3.6.1.4.1.19376.1.5.3.1.4.16

The update entry contains two references. The first reference is to the entry or section which is being replaced. This reference shall not be present when the update entry

Entries and sections can be added, updated, or removed from a PHR

An update act element indicates the entry in the original PHR Extract that should be replaced or updated with new information contained within the entry. Only one organizer of this type is allowed in a section, and if present, it must be the first entry in the section.

```
<entry>
    <organizer classCode='ORGANIZER' moodCode='EVN'>
        <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.16'/>
        <reference typeCode='RPLC'>
            <externalAct classCode='ACT' moodCode='EVN'>
                <id root='' extension=''/>
            </externalAct>
        </reference>
    </organizer>
</entry>
```

**Figure 5.4-7 Update Entry**

##### 5.4.4.12.1 <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.16'/>

This templateId indicates that the organizer is used to update a PHR Extract.

##### 5.4.4.12.2 <reference typeCode='RPLC|APND'>

Either one reference element shall be present with typeCode APND, or one or more with typeCode RPLC, but APND cannot be combined with RPLC.

The reference element lists the acts that are affected by the update. When the typeCode is RPLC, it indicates that any referenced act is being replaced with new information, and this element must be present, and may be repeated to replace more than one act at a time. When the typeCode is APND, the referenced act must be to a section with the same LOINC code as the section containing this entry, and only one reference element is allowed.

##### 5.4.4.12.3 <externalAct classCode='ACT' moodCode='EVN'>

This element must appear as shown above. It indicates that the reference is to an external act (a section or entry contained in the parent document).

##### 5.4.4.12.4 <id root='' extension=''/>

This element identifies the information being replaced. The identifer is of the entry or section being replaced. If the identifier is of the section being replaced, only one reference element is permitted.

# Appendix A Extensions to CDA Release 2.0

This section describes extensions to CDA Release 2.0 that are define by the IHE Patient Care Coordination Technical Framework.

All IHE PCC Extensions to CDA Release 2.0 are in the namespace urn:oid:1.3.6.1.4.1.19376.1.5.3.4. The approach used to create extension elements created for the PCC Technical Framework is the same as was used for the HL7 Care Record Summary (see Appendix E) and the ASTM/HL7 Continuity of Care Document (see secion 7.2).

## A.1 replacementOf

The <replacementOf> extension element is applied to a section appearing in a PHR Update Document to indicate that that section's content should replace that of a previously existing section. The identifier of the previously existing section is given so that the PHR Manager receiving the Update content will know which section to replace. The model for this extension is shown below in Figure A.1-1.

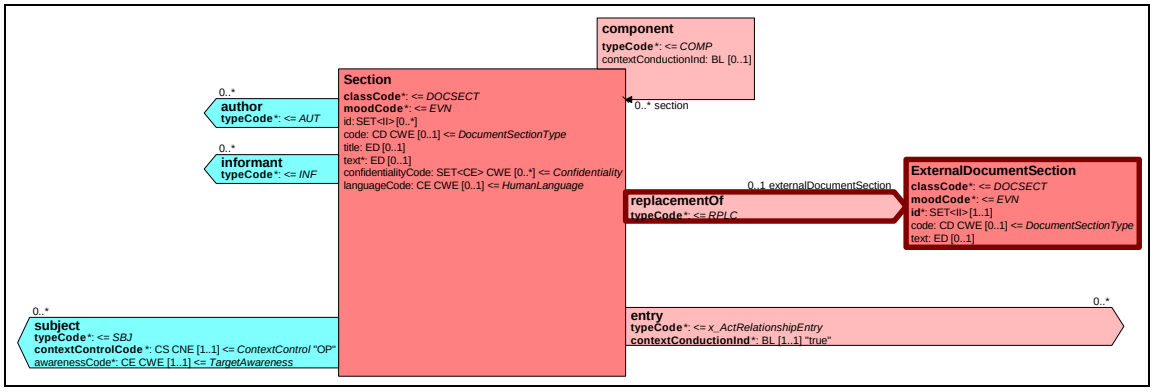


**Figure A.1-1 Model for replacementOf**

Use of this extension is shown below in Figure A.1-2. The <replacementOf> element appears after all other elements within the <section> element. The <id> element appearing in the <externalDocumentSection> element shall provide the identifier of the section being replaced in the parent document.

```
<section>
    <id root='' extension=''/>
    <code code='' codeSystem='2.16.840.1.113883.6.1' codeSystemName='LOINC'/>
    <title>Name of the Section</title>
    <text>Text of the section</text>
    <entry></entry>
    <component></component>
    <pcc:replacementOf xmlns:pcc='urn:oid:1.3.6.1.4.1.19376.1.5.3.4'>
        <pcc:externalDocumentSection>
            <pcc:id root='58FCBE50-D4F2-4bda-BC1C-2105B284BBE3'/>
        <pcc:externalDocumentSection/>
    </pcc:replacementOf>
</section>
```

**Figure A.1-2 Example use of the replacementOf extension**

## A.2 Group and Subscriber Identiifers

There is a need to record the identifier by which a patient is known to a payer, as well as the identifier by which the policy sponsor is known to a payer (the group identifier). The model for this is shown in Figure A.2-1.

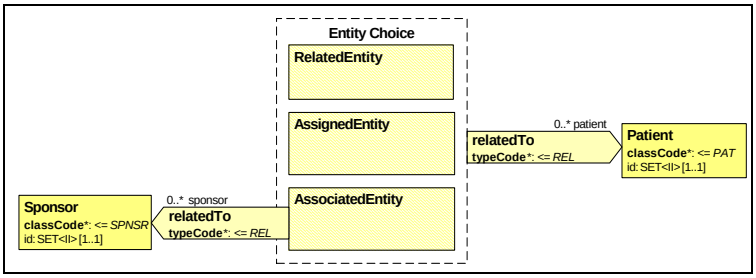


**Figure A.2-1 Identifier Model**

Use of these extensions to record the member identifier and group identifier is shown below in Figure A.2-2. Also note the location of the subscriber identifier, and payer identifier.

```
<participant typeCode='HLD'>
    <time>
        <low value='20050101'/>
        <high value='20051231'/>
    </time>
    <associatedEntity classCode='POLHOLD'>
        <id extension='Subscriber-Id' root='' />
        <code code='PHFAMDEP' codeSystem='2.16.840.1.113883.5.1095'/>
        <addr>
            <streetAddressLine>17 Daws Rd.</streetAddressLine>
            <city>Blue Bell</city><state>MA</state><postalCode>02368</postalCode>
            <country>USA</country>
        </addr>
        <telecom value='tel:(999)555-1212' use='WP'/>
        <associatedPerson>
            <name><prefix>Mr.</prefix><given>Kenneth</given><family>Ross</family></name>
        </associatedPerson>
        <scopingOrganization>
            <id extension='Payer-Id' root=''/>
            <name>Good Health Insurance Company</name>
            <telecom value='tel:(203)555-1212' use='WP'/>
            <addr>
                <streetAddressLine>3191 Broadbridge Avenue</streetAddressLine>
                <city>Stratford</city><state>CT</state><postalCode>06614-2559</postalCode>
                <country>USA</country>
            </addr>
        </scopingOrganization>
        <pcc:patient xmlns:pcc='urn:oid:1.3.6.1.4.1.19376.1.5.3.4' >
            <pcc:id root='' extension='Member-ID'/>
        </pcc:patient>
        <pcc:sponsor xmlns:pcc='urn:oid:1.3.6.1.4.1.19376.1.5.3.4' >
            <pcc:id root='' extension='Group-ID'/>
        </pcc:sponsor>
    </associatedEntity>
</participant>
```

**Figure A.2-2 Example use of the Group and Subscriber Identifiers**

## A.3 Patient Identifier

There is a need to record the identifer by which a patient is known to another healthcare provider. This extension provides a role link between the assigned, related or associated entity, and the patient role. This extension is also modeled in Figure A.2-1 above.

Use of this extension to record the identifier under which the patient is known to a provider is shown below in the example in Figure A.2-3.

```
<assignedEntity>
    <id extension='1' root='1.3.6.4.1.4.1.2835.1'/>
    <code code='59058001'
        codeSystem='2.16.840.1.113883.6.96'
        codeSystemName='SNOMED CT'
        displayName='General Physician'/>
    <addr>
        <streetAddressLine>21 North Ave</streetAddressLine>
        <city>Burlington</city>
        <state>MA</state>
        <postalCode>01803</postalCode>
        <country>USA</country>
    </addr>
    <telecom value='tel:(999)555-1212' use='WP'/>
    <assignedPerson>
        <name>
            <prefix>Dr.</prefix><given>Bernard</given><family>Wiseman</family><suffix>Sr.</suffix>
        </name>
    </assignedPerson>
    <pcc:patient xmlns:pcc='urn:oid:1.3.6.1.4.1.19376.1.5.3.4' >
        <pcc:id root='1.3.6.4.1.4.1.2835.2' extension='PatientMRN'/>
    </pcc:patient>
</assignedEntity>
```

**Figure A.2-3 Example use of the Patient Identifier Extension**

The <patient> element records the link between the related, assigned or associated entity and the patient. The <id> element provides the identifier for the patient. The root attribute of the <id> should be the namespace used for patient identifiers by the entity. The extension attribute of the <id> element shall be the patient's medical record number or other identifier used by the entity to identify the patient.